CONFLICT HANDLING STYLES USED IN RE-MEASUREMENT CONSTRUCTION CONTRACTS IN SRI LANKA

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DECLARATION

I declare that this is my own work, and this thesis does not incorporate without acknowledgment any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and believe it does not contain any material previously published or written by another person except where the acknowledgment is made in the text.

Further, I acknowledge the intellectual contribution of my research supervisor Dr. (Mrs.) Pournima Sridarran and under supervision of Ch.QS. Prof. (Mrs.) B.A.K.S. Perera for the successful completion of this research dissertation.

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The above candidate has carried out research for a Master's Dissertation under my supervision

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Dr. (Mrs) Pournima Sridarran Date

Dissertation Supervisor

DEDICATION……

This work is

a dedication to

my beloved family

for their unstinted

Support

ABSTRACT

Conflict Handling styles used in Re-Measurement Construction Contracts in Sri Lanka

Re-measurement contracts often suffer from massive conflicts between the consultant and contractor during the post-contract stage. A high diversity of multidisciplinary involvement with more stakeholders occurs in this stage. These conflicts influence the project positively and negatively. In a re-measurement contract, experts use different styles to handle these different dispute types during a post-contract stage. Thus, this study aimed at investigating the use of conflict handling styles to resolve conflicts encountered by consultants and contractors in re-measurement contracts during the post-contract stage of Sri Lankan construction projects. A qualitative research approach was selected using semi-structured interviews as the data collection technique to attain the study's aim. The empirical data collected from the twelve interviews were analyzed using **manual content analysis**. The scope of the study was limited to the post-contract stage of re-measurement construction projects which use ICTAD/SBD/02.

As per the research findings, interviewees identified forty-three (43) conflicts. Thirty-nine (39) and forty-one (41) conflicts by consultants and contractors in re-measurement contracts, respectively, during the post-contract stage of Sri Lankan construction projects. Twenty-two (22) conflicts, most common to both the consultant and the contractor, were identified, whereas *Impracticable design* and *Consultant changes by the client and the consultant* were identified as unique to the consultant, and *contradictory record-keeping* and *Less experiences* were noted as unique to the contractor. After considering the conflict-handling styles, the consultants identified eleven (11) conflict-handling styles applicable to solve thirty-nine (39) conflicts, and contractors identified ten (10) conflict-handling styles that can solve (41) conflicts during the interviews. Nine (9) conflict-handling styles were unique to the consultant and seven (7) conflict-handling styles were unique to the contactor. Finally, the study revealed that the majority of conflict-handling styles are common to both consultants and contractors. Consultants and contractors used only a few conflict-handling styles, unique for each, during the post-contract stage in re-measurement contracts.

***Keywords*:** *Conflict handling styles, Conflicts, Consultant, Contractor, Re-measurement Contract, Post-Contract Stage*

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Damayanthi, T.
Department of Building Economics.

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LIST OF ABBREVIATIONS

Abbreviations	Description
BOQ	Bill of Quantities
ROCI –II	Rahim Organization Conflict Inventory – II
ICTAD/SBD/02	Institute of Construction Traning and Development – Standard Bedding Document – Major contracts – [2nd Edition (Revised) January 2007]
JKR	Jabatan Kerja Raja
IFCEL	International Federation of Consulting Engineers Lausanne
FIDIC	Fédération Internationale Des Ingénieurs Construction
MEP	Mechanical, Electrical, and Plumbing
TKI	Thomas and Kilmann's Conflict Mode Instrument

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CHAPTER 01
INTRODUCTION

1.1 Background

The construction industry has several features: intricacy, high social variety, and a huge procedure that will create construction industry conflicts (Kteily, Saguy & Taylor, 2013). Therefore, the stakeholders such as consultants, contractors, and other construction-connected experts should be provided with proper guidance (Shin, 2000). Furthermore, in the terms of a construction project, conflict is to be expected as stakeholders have different views about the project objectives (Wu, Liu, Zhao & Zuo, 2017). There are so many construction conflicts, identifying this complex and defining the relationships among them at an early stage may assist the project stakeholders to identify the backgrounds of conflicts and take decisions to diminish the impact on the success of the project (Charkhakan & Heravi, 2019).

Construction conflicts can be defined as differences among stakeholders in a mutual action (Femi, 2014). Those differences need to be controlled for the project management and the opportunity of an agreeable decision if they are converted to conflicts that need lawful action for their determination (Adnan, Shamsuddin, Supardi, & Ahmad, 2011). According to Kathleen (2003), negative conflicts result from inadequate capital, e.g., insufficient work period, cash, manpower, resources, and construction plants and heavy machinery. Persons having different ideas, opinions, and viewpoints may create task conflicts in the construction project (Huan & Yazdanifard, 2012). The relationships conflict occurs due to differences between persons (Chou & Yeh, 2007). Fisher (2002) has introduced five main conflict types. They are interpersonal conflicts, role conflicts, intergroup conflicts, multi-party conflicts, and international conflicts. That occurs due to the mismatched requirements, styles, and goals of two entities about the personal relationship or/and professional relationship.

Lu, & Wang (2017) considered the innovative idea of conflict styles and the part of impartiality done the so-called conflict-handling styles. Conflicts handling style is an

active procedure with many parties, take their own equally conflicting ideas to reach achievement arrangement demand to the extreme advantage to their construction peoples (Marsh, 2001). Collaboration, conflict, and conflict handling styles are regular and repetitive in the construction industry (Benoliel, 2011). Hence, conflict handling requirement is an initial effort to resolve the conflicts and provide the chances to the stakeholders (Cheung,1996), and conflict handling is the maximum price-operative process to resolve construction conflicts as same as familiar, quick, and non-intricate (Cheung & Chuah, 2006).

The Lumpsum contract and Measurement contract are popular contract methods in the construction industry (Doloi, 2013). According to Civil Engineering Procedure (2016), a measurement contract is based on an item rate contract or percentage rate contract, where the bill of quantities is prepared for all anticipated items. In the item rate contract, the items are priced by the contractor and subject to acceptance by the owner; payments are made for the work performed. The project contract payment terms are divided into three standard forms: fixed price, re-measurement, and cost-plus. The three kinds of re-measurement contracts are to be categorized as Schedule of Rates, Bill of Quantities, and Bill of Materials (Pertubuhan Akitek Malaysia,2000).

The rising novel investments have developed industrial expansion and infrastructure facilities (The Report: Sri Lanka, 2016). Therefore, conflicts will increase these situations in the construction industry (Heenkenda & Chandanie, 2012). Conflicts in the construction industry will lead to loss of productivity, avoid gaining the worth for the cash and prevent completion of the project according to the specified duration (Yiu & Cheung, 2006). Fenn, Lowe, and Speck (1997) identified a suitable conflict-handling style as the principal method in longline achievement and expansion of the project. According to Thalgodapitiya (2010), stated that Sri Lanka arranged such a conflict-handling way that they directly approach resolution rather than avoiding the conflicts initially through proper conflict management. However, the conflict management process of dealing with or monitoring in such a way will not cause any negative effect on the project's success (Paletz, Chan & Schunn, 2017). Thus, it is important to study the conflicts that commonly arise in re-measurement contracts and

conflict handling styles used by different parities. In general re-measurement unit price contracts are contracts in which the volume of work listed in the contract is an estimate and will be re- measured together with the service user and the service provider to determine the volume of work that is performed or: "A unit price contract where the Bill of quantity is subject to re-measurement"(Nazarkhan Yasin,2014). Therefore conflicts commonly arise in re-measurement contracts.

1.2 Problem Statement

Unmanaged conflicts could effectively generate negative issues in the construction by raising disagreements that need exclusive and time-related handling processes (Adnan, Shamsuddin, Supardi & Ahmad, 2011). Research conducted on the consequence of inter-organizational conflicts on Chinese projects has proved that conflict adds value to a construction project with moderated conflict management strategies (Wu, Zhao, & Zuo, 2017). Chen, Zhang, and Zhang (2014) identified that the firm focus on the constructive aspects of the conflicts and the mutual trust establishment are the keys to reducing the conflicts. However, only a few research have investigated the construction conflicts and the conflict styles, identifying their impact on project performance and relational quality project team motivation by focusing on Chinese, Korean, South African, and British construction industries, to name a few (Balogun & Ansary, 2017; Guangdong, Zhao Jian, & Zuo, 2017; Irfaan, Thaheem, Gabriel, Malik,& Nasir,2019).

The post-contract stage of Sri Lankan construction projects revealed that conflicts happen when all stakeholders have familiar experiences (Senaratne, Udawatta, & Gunasekara, 2013). Several time-tested conflict-handling styles had been introduced and practiced over a period to overcome such situations, but they have affected the project's progress. Therefore a gap is noted in research investigating the construction conflicts, in examining the relationship between the consultant and the contractor, the conflict of re-measurement contract in the post-contract stage of Sri Lankan construction projects, and the conflict-handling styles that avoid or resolve them.

1.3 Aim and Objectives

Aim

This study aims to investigate the use of conflict handling styles by consultants and contractors in re-measurement contracts during the post-contract stage of Sri Lankan construction projects.

Objectives

- Review the concepts of conflicts, conflict handling, and conflict styles.
- Identify different types of conflicts faced by consultants and contractors in re-measurement contracts during the post-contract stage.
- Investigate different conflict-handling styles used by consultants for the above-identified conflicts.
- Investigate different conflict-handling styles used by contractors for the above-identified conflicts.

1.4 Research Methodology

A comprehensive literature review was carried out using journals, conferences proceedings, books, articles, thesis, and dissertations, which helped find research-related factors. Conflicts and conflict handling styles in re-measurement construction industry-related papers were used to prepare the review to collect the findings. A qualitative approach was used for the study and twelve semi-structured interviews were used to collect data about the conflicts and conflict handling styles for the re-measurement contracts in the post-contract stage. Collected data was analysed to have a better interpretation of the study. The collected data was analysed using **manual content analysis**. Finally, a discussion was built-up through comprehensive pattern matching.

1.5 Scope and Limitation

The research scope was limited to the post-contract stage of construction projects. Further, the research scope was limited to projects which use ICTAD/SBD/02 with re-measurement contracts.

1.6 Chapter Breakdown

Figure 1.1 presents the chapter breakdown of this study.

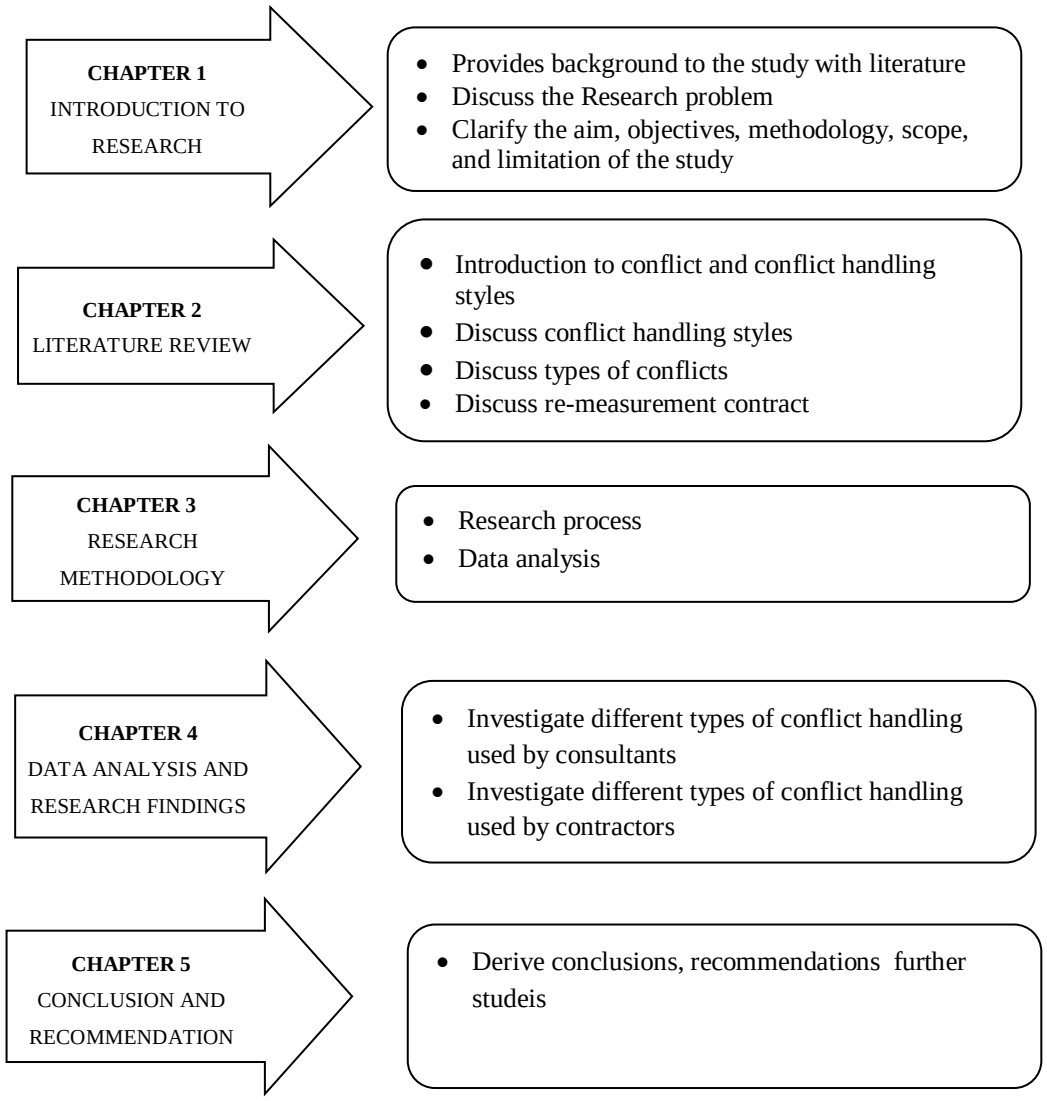

Figure 1.1: Chapter Breakdown

CHAPTER 02
LITERATURE REVIEW

2.1 Introduction

Chapter two provides a literature review, mainly focused on finding existing models of contract types, conflict types, and conflict handling styles, which is the availability of measuring such styles in re-measurement contracts. This chapter further reviews the negative and positive influences of conflicts and their impact on the post-contract stage of re-measurement construction projects and how the construction professionals address them.

2.2 Type of Contracts

A contract is a promise or set of promises between parties, which the law will enforce. It is balancing & distributing risks, with the participation of contractual parties to manage the risk towards the project's success (Gad & Shane,2013). Outdated contracting has created many inadequacies in a contractual arrangement that defines dissimilar procedures (Doloi, 2013). There are four types of contracts: (a) Cost-plus contract, the client allows nearly any contractual hazard, (b) Re-measurement contract, the contractors accept the share of the risk related with the group and approach in the construction action/procedure, (c) Alliance contract, contractors undertake not only the hazard related with the re-measurement contracts but also the hazards involved with the negative aspects of the construction aim, and (d) Turn-key (Lump Sum) contract, the contractor accepts nearly all construction hazards. The contract type a - type d, the essential contract hazard is favorable on the client-side, and therefore, growing on the contractor’s party (FIDIC: Lausanne,1993). The widely used contracting systems are the Lumpsum contract and Re-measurement contract (Soares, 2012).

2.3 Re-measurement Contracts

Re-measurement is to be classified as the measurement procedure to gain the finished work (Farlex, 2015). Mattawan (2011) identified a type of construction contract known

as a unit price. Here, the consultant or his/her employer provides a BOQ with predictable measures, mentioned by the contractor as an interest rate to build the project value. Re-measurement is the re-calculation of assessing advantages or disadvantages in a firm's financial report (Kierszniowska & Seiwent, 2009). The purpose for re-assessment is to all the more exactly depend on the organization's cost-related and working position, irrespective of whether the re-measurement is beneficial (or not) to the firm (Kierszniowska & Seiwent, 2009).

Civil Engineering Procedure (2016) suggested that re-measurement is the 'measurement of the worked measures of activity on the contractor to verify the compensation to a contractor.'

Re-measurement is similarly recognized as a value of measurement. Re-measurement of works frequently occurs due to numerous issues: If a contract is a measurement contract which cannot be exactly calculated during the initial period, and adjustments must be made under variation or mentioned in the contract and provisional quantities of the works in the BOQ (Jabatan, Kerja & Raya, 2010).

2.3.1 The concept of Re-measurement Contracts

In re-measurement contracts, the essential characteristics are that the unit rates in the BOQ (Bill of Quantities) form part of the contract, but not the quantities themselves, these being subject to re-measurement. Until recently, such contracts have been the recognized norm for the majority of engineering works carried out in this country, as Employers/Clients have traditionally preferred to separate the design of projects from their construction successfully (FIDIC,2006).

The Pertubuhan Akitek Malaysia (2000) identified three types of re-measurement contracts created on compensation:

- The contractor has reimbursed their expenses at arranged unit rates: Re-measurement in Schedule of Rates.

- The client agrees to the ordinary rate per cube meter square of output rates and unit rates: Re-measurement in-Bill of Quantities.
- The client agrees to the rate per regular room: Re-measurement in - Bill of Materials.

White and Case (2020) identified re-measurement requirements are typically used in building and construction projects. The project is indeterminate as to the measure of work to be completed by the contractor. Re-measurement may be necessary for these circumstances, but it is important that the 'regulation for measurement' is clear. In Maeda Corporation v Bauer Hong Kong Ltd. (2020), the current situation from Hong Kong highlights matters that can occur e.g. (a) Measurement of the depth from rock layer and further locations in the subsoil at the project location, (b)This measurement could help regulate parts of the site and subsoil agreed to pre-agreed rock types specified in the sub-contract, with accepted as any other rate. Both partners did not agree with the re-measurement method. This case is a consenting uncertainty to be formed by contradictions in the related requirements. Both parties have suggested these standards. Therefore, re-measurement contracts created more disagreements and conflicts.

2.4 Definition for Conflict

When the construction industry knows there is a conflict, the stakeholders inform the industry, others are doing about it, and of possible solutions (Brockman, 2013). During the last several decades, many researchers attempted to define "conflict" using different parameters and variables. However, these efforts have made it difficult to establish an effective and exact classification for the conflict (Slabbert, 2004). Investigators and experts have introduced more classifications that require the aims and opportunity of conflicts. Most definitions were created, and the classifications are identified as a mutual situation, subsequently critical for a combined academic expansion in conflicts. Table 2.1 shows the classification based on the Sri Lankan influence, organization interest, and people's interest.

Table 2.1: Definition for Conflict

Source	Definition for Conflict
Smith (1992)	Conflict is a prevalent problem that may complicate communication among persons, disrupt personal and expert connections, and decrease efficiency.
Brown et al. (1993)	Conflict is the uncertainty of a problem, disagreement, mismatch performance, disagreement, or destructive interface arguments are some of the ranges of proceedings.
Kathleen (2003)	Conflict is an outcome of inadequate assets such as insufficient period, currency, manpower, resources, and/or machines.
Chou & Yeh (2007)	Conflict is consciousness, on the share of both parties which elaborates differences in ideas or mismatched requirements.
Bendersky & Hays (2012)	Conflicts due to their positions in groups' social hierarchy.
Hussein, Al-Mamary & Hassan (2017)	Conflict is a devoted concept of every individual's life and it is impossible to avoid.
Irfaan, Thaheem, Gabriel, Malik & Nasir (2019)	Conflicts may differ concerning their framework, party-politics and statutory influence, monetary, cultural, and community background.

According to Table 2.1, based on the interest, environment, and precedence of stakeholders, conflicts may vary in terms of its framework, political and statutory influence, economic, cultural, and social background, and their framework, political, influence, economic, cultural, and social background conflicts should be changed (Irfaan, Thaheem, Gabriel, Malik & Nasir, 2019). Furthermore, considering their outcomes and processes, several researchers have introduced different definitions of conflicts.

2.5 Types of Conflicts

High human diversity and lengthy process of construction due to which the conflicts will occur (Jaffar, Tharim & Shuib,2011). Specific variations can produce conflicts among stakeholders regarding the related period, price, and fineness. Therefore, conflict modification may convey a failure of the contracts among construction parties (Peansupap & Cheang, 2015; Peasupap & Tachi, 2013). All stakeholders, such as owners, consultant teams, contractors, and sub-contractors highly involved, and their participation and activities can raise conflicts (Khahno & Ali, 2014). Engaging stakeholders with different agendas and expectations brings more conflict types during the process, and among themselves, in the building industry (Irfaan et al., 2019; Zhu et al., 2020).

Positive or negative conflicts depend on the five types of categories based on the consistency suggested by the group. These conflicts are the owner-suggested conflicts, the consultant-suggested conflicts, the contractor-suggested conflicts, third parties-suggested conflicts, and other construction substance-suggested conflicts (Acharya, Lee, & Im 2006; Chou & Yeh, 2007; Lu et al., 2011; Posthuma, 2011).

The name of the conflict type explains the content. According to Bendersky and Hays (2012), there is an inconsistency where conflicts can improve a team's decision once it confuses group participants from the principal matters in the construction industry. The core causes of the conflicts mentioned above are the unclear condition of the owner, unnecessary modification instructions, power of owner or consultant, mistakes and errors in design, non-payment to subcontractor, poor documents, poor message, variations in site state, and community intermission (Acharya, Lee, & Im, 2006).

Madalina (2016) highlighted that relationship conflict is the awareness of incompatibles and disagreements about interpersonal issues between team members, e.g., the tension between parties, the exasperation of each other, etc. Conflicts in the procedure of relational conflict are also recognized as relationship conflict (Brockman, 2013). The type is the status conflict, where the conflict happens due to their situations

in the teams' social hierarchy (Bendersky & Hays, 2012). The type is process conflicts, which is the consciousness of disagreements among the group members about how the task accomplishments may advance (Jehn, 1997). The type of task as conflict is sharing resources, sharing their information and services, and contributing to administrative invention and production (Lu et al., 2011; Posthuma, 2011). The conflicts occur due to the disagreement in completing work-related conflicts such as source provision, approving rates, variation events, and rules, and ruling on excellence can be recognized as task conflicts (Dreu & Vianen, 2001).

Borvon and Abdullah (2012) have identified conflict among individuals and groups in four types: inter-personal conflicts, intrapersonal conflicts, intra-group/inter-group conflicts, and intra-organizational conflicts. Leung et al. (2005) have identified that various purposes and incompatible reportage dealings which could lead to intra-group conflicts.

Guangdong, Zhaojian, and Zuo (2017) identified two types based on the uniformity of the teams' objectives and goals as (a) collaborative conflicts with shared targets and (b) practicable conflicts with impartial inconsistency. Table 2.2 summarizes the classification of conflicts in terms of their sources and considering all stakeholders for all procurement types.

Table 2.2: Classification of Conflicts in terms of their sources in construction projects

Classification of conflicts \ Source	A	B	C	D	E	F	G	H	I	J	K	L	M
Suggested on the consistency of the issue (a) Owner's suggested conflicts (b) Consultant's suggested conflicts (c) Contractor's suggested conflicts (d) Third parties' suggested conflicts (e) Other project matters suggested	✓		✓				✓						
Based on disagreements in the same group (a) Relationship conflict (b) Task conflicts (c) Process conflicts (d) Status conflicts			✓	✓	✓	✓	✓	✓		✓			
Based on the individuals and groups (a) inter-personal conflict (b) intra-personal conflict (c) intra-group conflicts (d) inter-group conflicts (e) intra – organizational conflicts		✓						✓				✓	
Based on the uniformity of the team **(**a) Collaborative conflicts (b) Competitive conflicts									✓				✓

A (Acharya, Lee & Im, 2006; Chou & Yeh, 2007); B (Borvon & Abdullah, 2012); C (Lu et al., 2011: Posthuma, 2011); D (Senaratne & Udawatta, 2013); E(Jehn,2005); F (Zhang & Zhang, 2012); G (Bendersky & Hays, 2012); H (Madalina, 2016); I (Guangdong, Zhaojian, & Zuo, 2017); J (Simons & Peterson, 2000); K (Soliman, 2017); L (Rahim, 2002); M (Lewicki et al., 2001)

The study provides a more exact opinion of conflicts created on the most common conflict situations, such as task-created conflicts, relationship-created conflicts,

process-created conflicts, and status-based conflicts, which can be practically experienced in the re-measurement contract.

The task conflicts principle will occur due to the persons having different opinions, interpretations, and ideas (Huan & Yazdanifard, 2012). Further, task conflicts may be sharing of properties, actions, or rules and clarifying evidence (Dreu & Vianen, 2001). In a group, task conflicts can enhance teamwork and boost the art of thinking of its members with multiple viewpoints on the same problem, thereby improving the overall group performance (Suifan, Alhyari, & Sweis, 2019).

Relationship conflict is measured overall as a measurement instrument or a measure of relationship position, which is of excessive status to the valuation of dynamic relations (Jelodar Yiu,& Wilkinson, 2012). Relationship conflicts occur due to the differences between persons in both parties (Chou & Yeh, 2007). However, a conflict is handled as much as possible to depreciate the condition (Tjosvold et al., 2016). This invigorates the awareness of firming and believing in an improved relationship among both parties (Zapata et al., 2013). Relationship conflicts are the disagreement of both teams who aim to achieve one target (Senaratne & Udawatta, 2013). Relationships rarely have a negative effect on the decision-making process, group satisfaction, and group commitment (Suifan, Alhyari, & Sweis, 2019).

Process conflicts arise due to differences concerning the activities, approaches, and allocation of responsibilities and power that are additionally connected to the condition of contract documents (Jehn & Chatman, 2000). The core causes of procedure conflicts are poor communiqué, issues about the working method, avoiding rules and regulations, issues about capacity delivery, and matters concerning arrangements (Senaratne & Udawatta, 2013).

Bendersky and Hays (2012) have identified four unique features which differentiate status conflicts from other types. The first feature is, status conflicts are not encouraged by the quality of the interpersonal relationships, but it influences the interest to achieve a higher status or defend his/her own status position. The second feature is zero-sum.

When the superior wins, the other party loses. On the other hand, it lowers the other person's rank in the hierarchy. It is achieved by denigrating others or exaggerating oneself. The third feature is its teamwork or an alliance of actors on the same hierarchies. The primary sources of status conflict on a social position in the group are immaterial to the issues related to tasks, personal values, or management procedures.

2.6 Conflicts in the Construction Industry

In the Sri Lankan building industry, conflicts are unavoidable in high modifications in benefits between the parties in a project (Yiu & Cheung, 2006). Due to the nature of conflicts in the construction project, it is very difficult to maintain the atmosphere of co-operation during the process of construction (Fenn et. al.,1997). Gudiene, Banaitis, and Banaitiene (2013) argue that each project is unique and uses a standard to describe an effective construction project. As per Loosemore and Ngyun (2000), the construction industry is vital on conflict preclusion, which in chance, can make significant chance budgets. However, claims that construction professionals should be improved to involve in functional conflict and that an unselective attempt to decrease conflict in construction suffers an opportunity – cost for clients and professionals (Loosemore et. al, 2000).

Lei et al. (2011) have identified the conceivable reasons for conflicts in the construction industry: (a) the participants are challenged with huge issues and a multitude of implied and clear interest; (b) there are clear changes in intellectual performance, nation, character, etc., between dissimilar representatives. However, depending on their aptitudes, information, and favorites; (c) a massive measure of data is essential for result-creation in the building industry. Thus, it is hard for result-creators to grip the necessary data altogether.

On the other hand, conflicts occur due to the process involved in construction projects and coupled networks of related activities (Kim, 2001). Lack of experience to address different situations, failure to act according to the situation and others' opinions, poor briefing and coordination, errors and omissions in designs (Maiti & Choi, 2018),

failure to obtain approvals of decisions formally, problems in the functionality of the building, politics (Karthieyan & Manikandan, 2017), failing to meet design requirements in construction (Udawatte & Senarathne, 2013), different importance on the project, failure to manage different stages of professional groups, and the submission and misuse of contract documents and standard forms, are the key reasons for construction conflicts (Karthieyan & Manikandan, 2017).

The number of stakeholders is very high in the measurement contract (Suifan, Alhyari, & Sweis, 2019). Therefore, more stakeholders can create conflicts. In addition, the complexity of the project, the comprehensiveness of contract documents, amendments done to conditions, lack of communication, lack of resources, financial constraints, design inadequacy, labour issues, and force majeure events can create more conflicts (Arditi & Thaveeporn, 2010).

2.6.1 Consultants and Contractors' conflicts in a Re-measurement Contract

Consulting is a regularly attractive and extraordinary provision (Lassala, Carmona, & Momparler, 2015). Haverila, Bateman, and Naumann (2011) stated that the consulting party crate a more significant part in the construction industry. The project consultant experts play an important role in the construction procedure (Yadollahi et al., 2014). Chen et al. (2014) stated four kinds of conflict arise with consultants in the building industry: relationship conflicts, payment conflicts, documentation conflicts, and work-related conflicts. These conflicts can definitely or destructively affect a construction project (Wu et al., 2017).

On the one hand, the contractor emphasized the timely delivery of projects within budget and to the level of the quality standard specified by the client (Chan & Kumaraswamy, 2000). Therefore, the contractor's attention is on the completion of the project by specified schedules and attempt to make financial, each party seems contradictory in achieving their goals, such circumstances could lead to conflict. The cause of the conflict can be caused by consultants, contractors, contract and specification, human resources, and project conditions (Susila,2012).

The factor of conflict at the implementation stage occurs when stated in the contract does not according to the implemented in the field. Factors that cause conflicts in construction projects based on previous research can be seen in table 2.3.

Table 2.3: Consultant's and Contractor's Conflict types identified previous researchers

Category	Conflict type	Authors											
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**
1.0 Payment conflicts	1.1 Financial issues of the delay payment	✓		✓						✓			
	1.1. Late submission of interim payment certificate	✓	✓										
	1.2. Financial issues of the non-payment	✓	✓							✓			
	1.3. Late submission of the interim payment application	✓	✓										
2.0 Relationship conflicts	2.1 Unprofessional behavior			✓									✓
	2.2 Poor communication			✓									✓
	2.3 Design changes	✓		✓	✓		✓						✓
	2.4 Contradictory record-keeping			✓									✓
	2.5 Disagreement between parties			✓									✓
	2.6 Difficulties in coordination			✓									✓
	2.7 Difference in attitudes			✓									✓
	2.8 Late submission of documents	✓		✓			✓						✓
	2.9 Less experience			✓									✓
	2.10 Lack of contact management							✓	✓	✓			

	2.11 Supervision, and coordination					✓							
3.0 Documentation conflict	3.1 Poor documentation	✓			✓	✓		✓					
	3.2 Contradiction of documents	✓			✓								
	3.3 Negligence	✓			✓								
	3.4 Impracticable design	✓				✓							
	3.5 Designs are not finalized	✓				✓							
	3.6 Consultant changes by the client and the consultant	✓				✓			✓				
	3.7 Delayed in materials approval	✓				✓				✓			
	3.8 Lack of clarity of documents,	✓						✓				✓	
	3.9 In completed documents	✓					✓	✓					
	3.10 Underestimating real cost	✓					✓						
	3.11 Late submission of documents	✓											
	4.1 Design errors	✓			✓	✓	✓						
4.0 Work-related conflicts	4.2 Disagreement between parties	✓			✓								
	4.3 Requirements of parties	✓											
	4.4 Contradictory record-keeping	✓											
	4.5 Poor coordination	✓									✓		
	4.6 Incorrect record-keeping,	✓											
	4.7 Approved unavailability of resources										✓		
	4.8 Poor communication	✓			✓	✓					✓		
	4.9 Less experience	✓					✓						
	4.10 Late submission of approval	✓				✓							

	4.11 Negligence	✓			✓								
	4.12 Delayed instruction	✓				✓	✓						
	4.13 Delay work	✓					✓						
A-(Acharya, 2006); B-(Fisher, 2000); C - (Cheng., Zhang, & Zhang, 2014); D - (Jaffar et, al, 2011); E- (Ng & Skitmore, 2000); F –(Hall,2002); G- (Kissiedu ,2009); H-Carmiched.,2002); I (Wu Qiuli,et. al, 2013); J- (Cheung & Chuah, 1999);K- Poerdiyatmono, 2007); L- Senaratne & Udawatta, 2013)													

Table 2.3 categorizes conflicts into four types: payment conflicts, relationship conflicts, and documentation conflicts are common conflict situations regarding work-related conflicts. These are described as follows.

(a) Payment Conflicts

Wu Qiuli et al. (2013) identified re-measurement contract price changes during the project construction process. Thus, all adjusted matters belong to impartial detail, and fact initially happened and occurred independently of persons particular alertness. However, contract prices concentrate on value variation, modification in regulation, and construction fits impartial facts. The value variation effect on growth or reduction of construction cost and change is the major item to influence project amounts. Therefore, the growth or decline of construction cost is produced by construction alteration and should depend on the measurement procedure. According to that situation, conflicts arrive in two groups due to intergroup conflict in relationship issues (Zhang Xiaoli, 2013).

Further, valuation norms in re-measurement outcomes are registered in the reimbursement, emplacing efficiency of quantity outcomes, and all preceding expense through the procedure. Hence the method should confirm the construction re-measurement outcomes and contract price (Dynamic Expert - System for Valuing Variations in Civil Engineering, 2013). Therefore, non-payment can occur, reviewed measurement results and it should be handled in the method regulated in the contract (Wu Qiuli, et.al, 2013).

(b) Relationship Conflicts

Desivilya et al. (2010), Chou and Yeh (2007), Simons and Peterson (2000), and Senaratne and Udawatta (2013) found relationship conflicts as discrepancies among persons who try to accomplish the goal. Wild (2002) identified that relationship conflicts touch the project routine level. However, they are private or task-related. The most significant common conflict condition is a conflict between the consultant and contractor that happens between both parties due to task-related issues Cheng, Zhang, and Zhang, 2014). Acharya et al. (2006) stated that poor supervision, poor managerial process, and source distribution matters would censoriously interrupt the task-related matters.

(c) Documentation-related Conflicts

The common conflict situations under documentation-related conflicts (Jehn & Chatman, 2000; Simons & Peterson, 2000; Senaratne & Udawatta, 2013) are design errors, contradictions between documents, non-finalized design, documents errors, and late submission of documents related to administrative procedure. Jaffar et al. (2011) identified contradictions of records in the re-measurement contract; someone in the drawings is not valued in the BOQ. Therefore, errors, omissions, or additions in documents are major sources of conflict. Wu Qiuli et al. (2013) identified many kinds of site visas as very important to re-measurement contracts; the visa is only the basis of a compensation claim. The fact does not include value at all but is an indication of the confident event. Hence, this is the substance to reasons for contract value fluctuation and documentation-related conflicts.

(d) Work-related Conflicts

Huan and Yazdanifard (2012) and Senaratne and Udawatta (2013) have identified Work-related conflict categories as task conflicts. There are four common conflicts: variation, issues concerning approving on rates, matters concerning assets, and poor-quality matters. A consultant suggests ‘variation’ as conflicts that depend on the client's obligation and uncertain construction possibilities (Acharya et al., 2006). Issues regarding agreeing on rates lead to relationship conflicts (Simons & Peterson,

2000), and issues regarding the resources conflict state basis of conflicts (Senaratne & Udawatta, 2013). Quality issues are most critical of works that directly affect the client's expectations and good-worth produce though dealing with low time frame and cost for plan and project (Ng &Skitmore, 2000).

2.7 Common Causes in Re-measurement Contracts

A conflict may generate many costs for clients and create contest responsibility for faults which they may or not be responsible for, and the public often feels left out of decision-making reasons for conflicts within a separate usually arise once people are undefined about what task is predictable to do, if not clarified by the supervisor or the person (Henry, 2009; Agwu, 2013). The four common causes for measurement contracts are errors, defects, and omissions in contract documents, underestimating the real cost of the construction in the commencement, altering situations, and stakeholders' complications with the construction process (Kululanga et al., 2001; Borvorn, 2011).

2.7.1 Errors

Error in team reflexiveness is realized as a change procedure; thus, the group manners among routine affairs (Schippers et al., 2018). A group is preliminarily worried about assessing its routine and emphasizes arrangement events (Lyubovnikova et al., 2017). Team performance depends on the strength of a team's collective affective commitment towards the organization (Gardner et al., 2011). Cooperation excellence is a significant issue for team products (Hoegl, 2001). Negative team feelings damage the value of relational team communication (but not incomplete to the absence of satisfactory arrangement and/or direction matters) (Curseu, 2011). In Korean construction projects, Irfan et al. (2019) have identified varying site conditions, obstruction of locals, disagreement in change order evaluation, design errors, workload, and ambiguity in specification.

2.7.2 Defects and omissions in contract documents

Poerdiyatmono (2007) identified more defects in the contract document and specifications, such as lack of clarity of document in the delivery of the plan, unclear relations in the agreement, the standings that can reason a dual sense in the construction agreement, and a large alteration in the considerate of contracts in overseas idioms through the similar agreement and the Indonesian language. Arditi and Thaveeporn (2010) have identified that the comprehensiveness of contract documents and amendments done to conditions involved in the adversarial atmosphere between the contractor and the client fails in creating a cooperative environment.

2.7.3. Under estimating the real cost of the project at the beginning

A re-measurement contract, also recognized as a unit price contract, is an agreement whereby the owner or its consultant affords a BOQ with estimated measures (Mattwan, 2011). The contractor can apply their interested unit rates to build up the estimated contract sum (Wu Qiuli et al., 2013). On the other hand, BOQ also prepared progressive phases, or through calculating the final amount, after there is the same little to do cost controller works, an inexpensive alternative should be considered. In this case, a quantity surveyor should suggest cheaper materials and follow alternative specifications to the items rather than control the budget (Hiew & Ng, 2007). Therefore, Contractor quality of effort, the mistake of estimating or price, late instructions from the architect or engineer are measured as the influences of conflict payable to practical complications (Jaffar et al., 2011).

2.7.4 Changing conditions and stakeholder involvement

Stakeholder conflicts can occur due to opportunity modification, mistakes in agreement, and variable goalmouths and purposes (Cakmak & Cakmak, 2014). Client, contractor, design, contract, social performance, plan, and external factors are the leading causes of stakeholder conflicts (Mitkus & Mitkus, 2014). Jaffar et al. (2011) gathered reasons for conflicts into social votive and mechanical complications. The absence of statements or feeble communiqué produces conflicts after a minor development routine (Martinez-Moreno et al., 2009). Al-Sibaie et al. (2014) identified

six influences relevant to participant conflicts, i.e., outside, inside, principal-associated, information-associated, administration-associated, and community-associated.

2.8 Issues in Re-measurement Contract

The re-measurement contract indicated that the building industry often faced relationship conflict situations, in the post-contract stage (Senaratne & Udawatta, 2013). Therefore, the propensity of consuming conflicts is additional after being associated with the pre-contract passé. In the post-contract stage, conflicts such as consultant-contractor conflicts, contractor-subcontractor, conflicts between workers, and conflicts between nominated sub-contractors will occur since people have different attitudes, different social statuses, and different educational backgrounds (Cheng, Zhang, & Zhang, 2014). Therefore, it is problematic to handle by creating everybody's effort on one goal, and it will often generate issues (Chatman, 2000). Senaratne and Udawatta (2013), Simons and Peterson (2000) recognized that relationship conflicts are frequently individual and seldom connected to task-associated substances. Cheng, Zhang, and Zhang (2014) exposed those conflicts can happen among both teams owing to task-associated matters. Table 2.4 presents the issues and meanings of some associated sources.

Table 2.4: Issues of Re-Measurement Contract identified by previous researchers

Issue	Author										
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**
Delay in contractor's payment	✓	✓					✓	✓			
Requirement of more consultant teams control the construction			✓			✓			✓		
Difficulty in controlling and reporting				✓	✓			✓		✓	
The client's risk is comparatively high						✓					✓
The final value is very difficult to forecast						✓					✓
A (Fisher, 2000); B (Howe, 2013); C (De Church et al., 2007); D (Senaratne & Udawatta, 2013);E (Ng & Skitmore,2000); F (Cheng, Zhang, & Zhang, 2014); G (Thalgodapitiya, 2010; Howe, 2013); H (Gebrehiwet & Luo, 2017); I (Suifan, Alhyari, & Sweis, 2019); J (Simons & Peterson, 2000); K											

2.8.1 Delay in contractor's payment

Delay & non-payment are considered to be one of the most common problems in the construction industry in an excess of negative influences on the project (Gebrehiwet & Luo, 2017). The payment of consuming uncontrolled conflicts is knowingly growing yearly and later generates extra and additional conflicts, demanding conflict resolution (Thalgodapitiya, 2010; Howe, 2013). Delay or non-compensation can often be a managerial conflict or infrequently a relational conflict liable on the condition (Howe, 2013). Thus, annual cost and time consumption for conflict resolution have increased at an alarming rate (Howe, 2013). Therefore, a high rate for operative conflict administration is necessary during the post-contract period of any building industry (Fish, 2000). The non-payment troubled the achievement in construction happening useless excess of period and relationship matters, and non-payment will happen due to lack of manpower, low quality of the project, and manpower wasting (Howe, 2013; Thalgodapitiya, 2010).

2.8.2 A high number of consultant teams may be required for handling the project

A severe relationship conflict will contrariwise touch effort routine (De Church et al., 2007). In a re-measurement contract in a group, task conflicts can enhance teamwork, boost the art of thinking of its members with multiple viewpoints on the same problem, and enhance the overall group performance (Suifan, Alhyari, & Sweis, 2019). They will aim to improve the quality of decision-making as it enables the conversation of evidence between the group associates while enhancing the team's effectiveness (Zhang & Zhang, 2012; Kiernan, Ledwith, & Lynch, 2020). Therefore, task conflict can severely impact team members' satisfaction (Jehn, 2005).

2.8.3 Controlling and reporting will be a difficult task

Task conflicts happen due to the differences among persons occupied in similar teams. Concerning the gratified of the results, they argue that in measurement contract, controlling and reporting can start at the post-construction period due to unsuccessful construction arrangement and development, laterally with the increased cost escalation in resources, and unavailability of services such as essential utilities and more availability of tasks (Senaratne & Udawatta, 2013; Simons & Peterson, 2000; Gebrehiwet & Luo, 2017).

2.8.4 The client's risk is comparatively high

As per Cheng, Zhang, and Zhang (2014), conflicts may frequently arise among both parties depending on the task-related matters. Soliman (2017) argues that actual quantities are fundamentally caused by failures in project value, given that the value of work done. Therefore, Project value cannot predict the final value of the project; in that case, clients' risk is very high (Cheng, Zhang, & Zhang, 2014).

2.9 Effect of Conflicts and their Impacts on the Post-Contract stage of Construction Projects

Construction operation project stakeholders get complicated in source conversation, information, and statement to archive the target with plans and specifications. However, conflicts could have determined assets on the construction development. Because of these conflicts, the construction projects are inundated by a progressively argumentative relationship among the members, mainly between the consultant and the contractor (Chen et al., 2014). The influence of such conflicts on its team members may affect the construction project constructively and destructively (Tabassi et al., 2019). Safapour et al. (2019) stated that conflicts significantly affect the project schedule performance in engineering, procurement, and construction phases. The inter-administrative conflicts affect the additional cost in projects, especially measurement contracts (Wu et al., 2017). Dickey (2015) argued that a group could have dissimilar conflicts, such as misunderstanding among the group's associates, which may occur in construction actions. However, the organization should manage it effectively.

2.9.1 Positive effects of conflicts

Conflict allows exploring in another way and delivers the real obligation to the procedure of conclusion creation. Conflict handling is a very disruptive procedure, which is likely to be the device used in the expanded process in a group (Uchendu et al., 2013). Johari, Morni, Bohari, and Sahari (2013) argued that the difference subsequent from the conflict is a fundamental principle towards positive results and helps address the problem, i.e., real administration of the construction industry. They identified that disagreement calls for the complete satisfaction of the stakeholder’s needs necessary for effective performance. If the conflicts resolve amicably, it can strengthen the relationship that one has with the other construction experts. In the construction field, conflicts occur from encounters, differences, and influences connecting tasks, parts, procedures, and purposes that are valuable to the construction project and its success. It also understands the problem and improves the solutions (Gorse, 2003).

2.9.2 Negative effects of conflicts

Construction conflicts diminish the value of the project's money (Gunarathna, Yang, & Fernando, 2018). Thus, if conflicts are not managed properly in the organizational context and between the individuals, it may harm and reduce productivity (Irfan et al., 2019). Past researchers highlight a shared awareness nearby the unhelpful and negative awareness of the conflict for the attention of every person. Some believe that conflict typically principals to damage a group's routine, and it is improved to evade conflict (Major & Burke, 2013). The reason behind seeking harmony is the existence of a conflict, which requires timely and effective resolution (Lee, 2011). Balogun and Ansary (2017) have identified the construction process by the parties that bring the construction project to a point where it becomes a miracle to make the construction project free from conflicts. Moreover, conflict damages the relationships between the project stakeholders, causing delays in projects, claims, and disputes, which may eventually delay the completion (Awakul & Ogunlana, 2002). Corporations can be a valuable technique to recover statements and faith between a client and a contractor and decrease the confrontational situations (Drexler & Larson, 2002).

2.10 Conflict handling styles

The choice of conflict-handling style commands more outcomes (Wang, Wu, Gu, & Hu, 2021). Many experts and groups have elaborated on projects with their standards, interests, instructions, and requirements in the post-stage. Therefore, more conflicts will occur in the post-contract stage (Thalgodapitiya, 2010). It can be argued that the construction industry fulfills all necessities that are wanted for making conflict circumstances easy (Rahim & Magner, 1995). Research by different researchers on conflict-handling styles generates several ways that could handle different situations of a conflict effectively by examining its nature, the expected outcome, and the impacts (Johari, Morni, Bohari, & Sahari, 2013).

2.10.1 Rahim Model (2002)

Referring to the conceptualization theory of both Black and Mouton (1964) and Thomas and Kilmann (1976), Rahim (2002) differentiated the conflict-handling styles

using two-dimensional theory, focusing the concern on our self against the concern on others. As per the dual concern theory, the method both teams freely perform or are required to perform in a conflict scenario may be achieved by the conflicts (Lee, 2008). Desivilya et al. (2010) stated that conflicts could be appropriately managed because the concept recommends that creating high or low anxiety is assumed to reach personality requirements and the want of the other group. Chou and Yeh (2007) have explained conflict-handling styles such as integrating, obliging, dominating, avoiding, and compromising.

2.10.2 Thomas and Kilmann two-dimensional model (1976) ("TKI")

Two elements characterize negotiations: (1) a shared interest and (2) a matter of conflict (Thomas, 1976; Heiba, 1964). The impression of negotiating is to use the common benefits of the teams to negotiate on the matters at issue. The TKI has two dimensions based on the 'dual concern model': (a) concern for the satisfaction of one's own needs, also referred to as *the assertiveness option*, i.e., the extent to which the individual attempts to satisfy his concerns, and (b) concern for satisfying the needs of others, which forms the basis of various style, also referred to as the *cooperativeness option*.

2.10.3 Putnam and Wilson theory (1982)

Based on organizational communication, Putnam and Wilson (1982) introduced three instruments of relational conflict-handling as "non-confrontation" (avoiding disagreements and restrain from arguments by indirectly apposition while searching for innovation), and "control" (arguing with others with determining positions, and using nonverbal behavior emphasizing demand) (Rahim, 1985).

2.10.4 Mary Follet theory (1940)

Follet (1940) identified three main ways of handling conflict: "domination" (where one party wins over the other party), "compromise" (each party to the conflict may give up to a certain extent to maintain the relationships by proceeding with the activity

interrupted by the conflict), and "integration" (both parties may bring their differences to an open forum to evaluate and form a fair decision) (Follet, 2019).

2.10.5 Pruitt and Rubin model (1986)

Pruitt and Rubin (1986) introduced five negotiation styles: problem-solving, contending, inaction, withdrawal, and yielding. It considers the party's apprehension about the consequence of negotiation. The 'separate only' cares about his result relatively than the extra party's product. In conflict problem-solving, separate is worried about both his own and other party's outcomes. Table 2.5 summarizes the conflict-handling styles introduced by past researchers in the field. Further discussion on these styles is provided below.

Table 2.5 Summary of conflict-handling styles identified by past researchers

Detailed styles / Reference of the conflict-handling style	Integrating	Obliging	Dominating	Avoiding	compromising	collaborating	Accommodating	competing	Contending	Problem-solving	Yielding	Inaction	Withdrawal	Non-confrontation	Solution-orientation	control
Rahim Model (2002)	✓	✓	✓	✓	✓											
Thomas and Kilmann Two-dimensional Model partners (1976) ("TKI")				✓	✓	✓	✓	✓								
Putnam and Wilson Theory (1982)														✓	✓	✓
Mary Follet Theory (1940) conflicts	✓		✓		✓											
Pruitt and Rubin Model (1986)									✓	✓	✓	✓	✓			

According to Table 2.5, sixteen (16) conflict-handling styles were identified. The re-measurement construction industry typically uses five handling styles, as per the existing researches: obliging, integrating, compromising, dominating, and avoiding. According to Lee (2008), who argued dual concern theory is the way two parties willingly behave in a conflict situation. It can help manage conflicts.

The five conflict-handling styles are: *Integrating styles* - caring for the relationships, mutual understanding, and goodwill between the construction personnel; *Dominating style* - also known as "authority," is a famous tool to manage conflicts in construction projects as all the stakeholders respect the hierarchy of the organization and the line of authority; *Compromising style* - compromising improves the mutual understanding among team members and strong commitment among teams; *Obliging style* - appears with low concern for self and a deep concern for others. Parties may not give real importance or devalue their goals to maintain the relationship, but they produce a long-lasting solution, and *Avoiding style* - the conflict parties do not see the value of the original goal or the relationship against the issue (Rahim, 2002).

2.11 The Importance of Identifying Conflict Handling Styles for Resolving Construction Conflicts in Re-measurement Contracts

Conflicts have become inevitable in every constriction project due to its complex nature, multidisciplinary involvement, and lengthy duration of construction. Therefore, trying to resolve them would be a waste of time and money; it will also anger the parties involved. Hence the best conflict-handling style is to manage them effectively (Jaffar, Tharim, & Shuib, 2010; Zhu, Wang, Yu, & Yang, 2020). However, in the causes of construction, conflicts are branded as unhelpful reasons as it is not accomplished to get positive effects (Senaratne, Udawatta, & Gunasekara, 2013). Adopting conflict-handling styles and dealing with the conflict would be the ideal solution for effective management of construction conflicts. Elfenbein (2013) highlighted the standing of such representations on conflict handling. Pruitt and Rubin (1986), the Dual concern model (Rahim, 2002), and Thomas-Killman Instrument (Thomas & Killman,1974) —all theoretical mockups are valuable to discourse only both party negotiation. The results validate the position of value formation earlier than

value delivery through the shared improvements method (Susskind & Cruikshank, 2016).

Integrating is one of the most successful conflict management styles as it inspires openness, and transparency can be seen between the parties to the conflict (Khanaki & Hassanzade, 2010). Integrating enriches a win-win situation by assuring the parties to the conflict, meeting with each other, and collaborating to find a solution and make the parties move forward. It also helps to exchange views and find alternatives to the required solution to resolve the conflict (Ogunbayo, 2013). Adopting integrating style to resolve the conflicts can do less harm to the progress of the measurement work (Khanaki & Hassanzadeh, 2010), and it may allow studying different circumstances, carefully and comprehensively, as it fuels the caring relationships, mutual understanding, and goodwill between the construction personnel (Leeds, 1992). In the measurement contract, dominating is also known as "authority." It is a famous tool to manage conflicts in construction projects as all stakeholders respect the hierarchy of the organization and the line of authority (Ogunbayo, 2013). Compromising could be identified as a gain-pain approach where the parties must bargain to solve a pending problem which ultimately satisfies both parties with a clear resolution (Lee, 2008). Compromising improves the mutual understanding among team members resulting in strengthening commitment among teams (Hussein, Al-Mamary, & Hassan, 2017). The obliging style appears with low concern for self and more concern for others (Hussein, Al-Mamary, & Hassan, 2017). However, parties may not give real importance or devalue their goals to maintain the relationship, but they have produced a long-lasting solution (Ogunbayo, 2013). This is vital in maintaining the party's satisfaction for measurement contract to achieve their goals (Gunarathna, Yang, & Fernando, 2018). Avoiding style would work when the parties to the conflict do not see the value of the original goal or the relationship against the issue.

Re-measurement of works when preparing the final account, clause 25.1 of the JKR: Jabatan Kerja Raja (2010), stated that measurements and valuation, variation works, and fair valuation should be directed by a supervising person for all variations as instructed by the supervising person in marks as per Clause 24.1 of the JKR: Jabatan Kerja Raja (2010). Therefore, in the re-measurement contract in Sri Lanka, to maintain

a good professional association with the other team, especially with the employer, the construction industry professionals use this style even disregarding the financial loss they gain from the conflict (Gunarathna et al., 2018).

2.12. Chapter Summary

This chapter provides the prevailing knowledge of construction conflicts and their conflict-handling styles. According to literature findings, conflict is a natural and unavoidable phenomenon in every re-measurement construction project. In building construction, there is a broad range of conflicts in conditions of their outcomes and processes. Many scholars have introduced different classifications of conflicts based on workgroups and teams. Different negotiation styles consider the nature of their consequences for addressing these conflicts. The conflicts between the consultant and the contractor engaged in the post-contract stage of re-measurement construction projects have a significant effect on the construction performance. Therefore, identifying different conflict types and their negotiation styles is vital for achieving project goals.

The Sri Lankan construction industry has gained an enormous demand and development with foreign and local investments, highways, infrastructure, and industrial development. Most of these projects are under re-measurement contracts. Accordingly, the difficulty and novelty have drawn building construction projects into more conflicts, especially during the post-contract stage of building projects. Therefore, identifying these conflicts between the consultant-contractor and their conflict-handling styles in the post-contract stage of building projects would be valuable for the fruitful achievement of building construction projects.

It revealed that studies dealing with studying the conflict types, conflict handling styles in re-measurement contracts, post-contract stage, and the relationship between the type and conflicts handling style in Sri Lankan building projects are absent. Hence this chapter provides a background study of literature to facilitate the imperial investigation of the research aim.

CHAPTER 03
RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the systemic processes and methods belonging to the study of methodology to achieve the defined research aim. Furthermore, research methodology is a way of solving the research issue or addressing the research question (Kumar,2011). As Rajasekar, Pitchai, & Veerapadran (2006) explained that research method is the overall research technique and the way of conducting the research. All the steps undergoing research methodology have been listed below in detail.

3.2 Research Design

Research design is a logical arrangement (Wyk,2012) and strategic framework to hold all the elements in the research (Akhtar,2016). The key aim of research design is to find a solution to identify the way that the research problem can be solved (Kumar,2011). Yen (2009) supported the above statement by stating that the research design is a systematic process consisting of the way of design and carrying out work eventually and solving the research problem. This research has also developed specific approaches, processes, and techniques to achieve the aims and objectives of this research.

3.3 Research Approaches

Research approaches have been described by Creswell (2014) as a plan and procedure to do the research which would take research from a more efficient way to a detailed method of data collection, analysis, and interpretation.

3.3.1 Available approaches

Johnston, (2014) identified that there are three major types of research approaches. Qualitative studies basically deal with words and quantitative studies deal with numbers (Creswell,2014). A quantitative approach is basically a pre-determined

approach based on instrument-based questions. That approach gives interpretation more statistically. furthermore, this analysis is also based on the statistical way. The qualitative method can be identified as an emerging approach. That approach mostly uses open-ended questions. In the qualitative method, the final interpretation can be given using the text or image. In a mixed-method, the combination of both quantitative and qualitative approaches is carried out (Creswell,2014). Below table 3.1 describes the available research approaches with some fundamental features.

Table 3.1: Available Research Approaches

Author	Characteristic	Quantitative Approach	Qualitative Approach	Mixed approach
(Mafuwane,2011)	Concept	Examination of variables that can be calculated on instruments from which numerical data analysis is conducted using statistical procedures to evaluate objective hypotheses	Understanding and examining the meaning given to a specific human or social problem by a person or a group of individuals.	An approach to reinforce the analysis by mixing both approaches with theoretical frameworks.
(Creswell,2014)	Questions from study	Questions focused on Instruments	Questions open-ended	Both
(Creswell,2014)	Technique	Statistical analysis	Text and image analysis	Both
(Creswell,2014)	Methods of data collection	Output data, data on attitude, observational data, and data from the questionnaire	Data from interviews, data from observations, data from records, and audio-visual data	Both
(Yin,2013)	Limitations	Improper representation of the target group	Difficulty experienced during analysis and a large amount of data	Both
(Rajasekar, Philominaathan & Chinnathambi,2013	Decision making	Answers for what, where, and when (If questions)	Why and how the investigation	Both

3.3.2 Selected approaches for this study

As a result, conflict-handling styles in construction projects would obviously become fundamental research to implement by assessing different industry professionals based on their opinions, attitudes towards the concept, and behaviors. Basically, it deals with the words, not the numbers. Qualitative studies help to answer the "why" and "how" questions (Rajasekar, Philominaathan, & Chinnathambi, 2013). On the other hand, the qualitative approach provides personal perspectives and experience-based answers (Hammarberg, Kirkman, & de Lacey,2016). Conflict handling styles in re-measurement construction industry research also need industry professionals' perspectives and experienced-based answers. Most of the time in-depth investigation studies have used the qualitative approach. A qualitative approach also encourages improved self-understanding and a greater understanding of the human condition, particularly of human experience and actions (Mafuwane,2011). Creswell (2014), stated that the qualitative method was selected to carry out this research considering the nature of the study and the characteristics. Furthermore, a qualitative approach that deals with descriptive and non-numerical data basically and requires logic to explain the meaning and feeling that leads to the explanation of the situation. Consequently, the research method was selected as the qualitative approach.

3.4 Research Strategy

Under this consideration, research strategies should help the researcher to answer the questions in the study (Johannesson & Perjons,2014). Some research strategies are mainly used in case of studies, experiments, & surveys (Johannesson & Perjons,2014; Tajvidi & Karami,2015). Survey researchers can come up with a set of methods to collect data on narrow and well–defined topics. When considering this study, it also can be identified as a well-defined topic, conflicts handling styles in the re-measurement construction industry. thus the survey strategy was used for the research.

3.5 Research Method

Forms of data collection, data analysis, and data interpretation include research methods (Creswell,2014). Methods of research are the methods to answer the questions correctly (Walliman, 2010). The interview series is conducted with a purposive sample representing many ideas of the construction industry. MacDonald & Headlamp (2011), explained that the most generic method, guided by a simple framework, is semi-structured interviews. The selection of data methods, however, depends on research objectives. To validate the data obtained through literature synthesis, interviews were conducted for this analysis. The interviews were carried out through semi-structured interviews basis on professional opinions given; semi-structured interview guidelines were followed to explain a systematic approach. Therefore, to obtain experiences, opinions, and perspectives on the subject, twelve (12) semi-structured interviews were conducted.

3.6 Data analysis Techniques

According to Flick, (2013) has identified data analysis process will take place when all the required scopes of data from the interviews are collected. According to the collected data, content analysis is used as a data analyzing method. One of the most common techniques for analysing qualitative data is the content analysis technique (Elo et.al.,2014; Wahyuni,2012).

As per Bengtsson (2016), the content analysis consists of a few rules to be followed and decreases the amount of data collected, and makes categorization easier by improving the contextual meaning. In addition, manual coding increases the data set emphasis (Saldana,2013) and removes the diversion from the method rather than the contextual value of data (Cope,2014). Therefore, content analysis with manual coding was adopted for the analysis of data.

3.7 Research Process

All the research steps are briefly explained within the research process. The research process is shown in figure 3.1 below.

This research process is shown in Figure 3.1; the overall flow of achieving defined objectives over the research period. The above figure summarizes all of the processes, approaches, and techniques. The primary information and objectives are extracted through the literature review. Then from the semi-structured interviews with professionals, related data was collected and shown as objectives of the study. The illustrated steps from the research process achieved each objective. Collected data was analyzed using content analysis and the outcome and the recommendation for the question were provided.

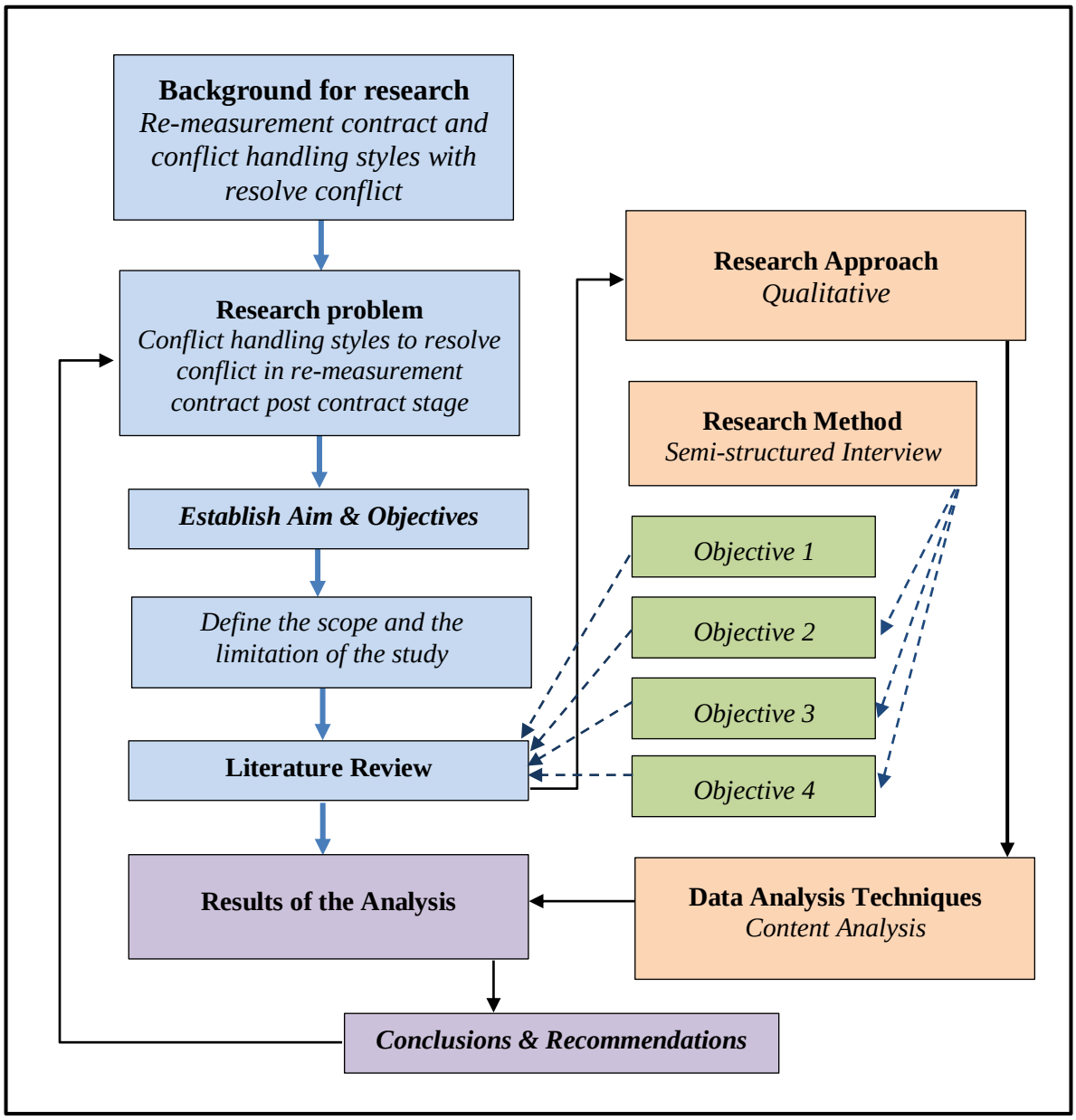

Figure 3.1: Research Process

3.8 Summary

This chapter is intended to deliver the methodology that will be adopted in analyzing research findings including the most appropriate research approach, strategies, methods, and techniques to achieve research objectives. The qualitative approach is being selected as a research approach. The research process illustrates the plan of the research with a diagram.

CHAPTER 04
RESEARCH FINDINGS AND ANALYSIS

4.1 Introduction

This research chapter elaborates on different findings obtained from semi-structured interviews in building expertise as well as collecting required research data. In this chapter, the collected data has been presented in a meaningful way with proper analysis. It has compared research findings with the literature review at the end of the objectives by using the pattern matching method at the end of each objective. The later part of this fourth chapter provides relevant solutions for each conflict to manage and enhance the usage of conflict handling styles in the re-measurement contract at the post-contract stage.

4.2 Semi-Structured Interviews

As the post-contract stage of the data collection process of this research, twelve (12) Semi-structured interviews were conducted with the professionals who are experts in related research areas and practicing in organizations involved in construction projects. The findings which hold different opinions and perceptions of conflict handling styles between consultant and contractor were analyzed using the content analysis. The respondents were interviewed by online platforms within approximately 45-60 minutes.

4.3 Objectives of Semi-Structured Interviews

This research comprises four main objectives. Mainly the objectives are fulfilled with the literature review and the semi-structured interviews (refer to appendix A and B). Participants in the interview provided their opinions on different scales. It was based on their experience and knowledge about the research area. The data is collected to achieve the objectives concerning the stakeholders in the construction industry. Semi-structured interviews were conducted adhering to the 'Interview Guideline' which was prepared with the use of literature reviews. After entering the subject cause in the

interview, which was found in the literature review, the conflicts handling styles are checked with the interviewers, whether these can be used with conflict reality. According to the process following objectives were fulfilled at the time of interviews. Furthermore, from the interview series, the current usage of conflict handling styles techniques was assessed. Moreover, the collected ideas were used to develop conflict-handling styles and features to resolve a conflict in a re-measurement contract.

Further, in the interview series, the participant's opinions on the direct impact of conflict handling styles with difficulty resolving conflicts were observed. Their opinions have also helped to discover methods to manage the negative impact caused by the barriers.

4.4 Respondent details for Interviews

In this research twelve (12) interviews were carried out successfully according to the semi-structured interview guidelines. All the interviews were conducted with professionals in the construction industry. As this research was carried out in conflict-handling styles, the sample of the experts was a purposive sampling, which helped to select those with experience and knowledge in the research area, in different contexts and different age groups. The interview respondents, who had to have more than 5 years of working experience in the construction industry. The sample selected included participants from different age groups. Hence it was possible to get ideas based on their different levels of experience. This sample has variant exposure levels to the areas which are related to that study. Importantly, the selected sample contended with different levels of industry practices, therefore it helped to implement the conflict-handling styles. The following tables illustrate the profile of the respective interviewees.

Table 4.1 and 4.2 profile in the interviewees

Table 4.1: Profile of Interviewees-Consultant's Perspective

Code	Designation	Experience (Years)	Key Expertise Areas related
CN1	Senior Manager	18 Years	• Conflicts management with job planning and budgeting • Conflict handling experience with the cost estimates and progress planning.
CN2	Project Manager	12 Years	• Conflicts handling with job planning and budgeting • Conflict handling experience with the cost estimates and progress planning.
CN3	Project Engineer	13 Years	• Conflicts handling including activities planning to budget
CN4	Architect	13 Years	• Conflicts handling in a construction project (working experience)
CN5	MEP Engineer	15 Years	• Conflicts handling including planning in cost planning
CN6	Chartered Quantity Surveyor	8 years	• Conflict management & handling with cost planning and estimating

Table 4.2: Profile of Interviewees - Contractor's Perspective

Code	Designation	Experience (Years)	Key Expertise Areas related
CR1	Construction Manager	25 Years	• Conflicts management & handling with cost planning and budgeting
CR2	Project Manager	18 Years	• Conflicts handling with progress planning and budgeting • Conflict handling experience with the cost estimates and planning
CR3	Resident Engineer	13 Years	• Conflicts handling including planning in cost estimation
CR4	Civil Engineer	13 Years	• Conflicts handling with progress maintain in the construction industry

Code	Designation	Experience (Years)	Key Expertise Areas related
CR5	MEP Engineer	15 Years	• Conflicts handling including planning in cost planning
CR6	Graduate Quantity Surveyor	7 years	• Conflicts management & handling with cost planning and budgeting

The sample respondents represent the re-measurement construction project and information technology industry. Therefore, the relevant data was collected to connect with the three industries type of conflicts in re-measurement contracts, using conflict-handling styles to resolve these conflicts and the most common & unique conflict handling styles in a conflict situation. Here construction industry respondents were selected from the consultant party, contractor party, and including information technology knowledge in the relevant field. Therefore, that kind of sample provides vital knowledge and experience-based answers for the research gap.

In that purposive sample covering different re-measurement projects, it helps to get an idea of the situation and the conflict handling styles in the construction industry. Furthermore, that analyses different kinds of economic systems and legal backgrounds for the implementation of that kind of conflict. Significantly, that sample illustrates how the behaviors of the government and specific stakeholders to the implementation of new technologies. Findings of semi-structured interviews were conducted with those criteria.

4.5. Findings of semi-structured interviews

4.5.1. Different types of conflicts faced by consultants and contractors in re-measurement contracts during the post-contract stage

In order to identify the conflicts of consultants and contractors, first, table 2.4 was prepared with the use of a literature review. In the literature review, thirty-nine (39) numbers of consultant and contractor conflicts were identified. During the interview, another four (4) conflicts were added and given in bold letters. All those conflicts identified in the interviews are shown in Table 4.3 below.

Table 4.3: Conflicts faced by consultants & contractors in the re-measurement contract during the post-contract stage

No.	Type of Conflict	Consultants' Respondents						Contractors' Respondents					
		CN1	CN2	CN3	CN4	CN5	CN6	CR1	CR2	CR3	CR4	CR5	CR6
1.0	**Payment conflicts**												
1.1	Financial issues of the delay payment	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1.2	Late submission of interim payment certificate	✓	✓	✓		-	-		✓	✓			
1.3	Financial issues of the non-payment	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1.4	Late submission of interim payment valuation		✓		✓			✓	✓	-	✓	✓	
1.5	**Financial issues of the final value**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.0	**Relationship conflicts**												
2.1	Unprofessional behavior	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.2	Poor communication	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.3	Design changes	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓
2.4	Contradictory record-keeping							✓		✓	✓	✓	
2.5	Disagreement between parties	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.6	Difficulties in coordination	✓		✓			✓	✓	✓	✓	✓	✓	✓
2.7	Difference in attitudes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.8	Late submission of documents	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.9	Less experience								✓		✓	✓	
2.10	Lack of contact management	✓		✓			✓	✓	✓	✓	✓	✓	✓
2.11	Supervision, and coordination	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.12	**Requirement of more consultant teams**	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
3.0	**Documentation conflicts**												
3.1	Poor documentation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3.2	Contradictions of documents	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

No.	Type of Conflict	Consultants' Respondents						Contractors' Respondents					
		CN1	CN2	CN3	CN4	CN5	CN6	CR1	CR2	CR3	CR4	CR5	CR6
3.3	Negligence		✓	✓		✓				✓	✓		✓
3.4	Impracticable design			✓									
3.5	Designs are not finalized	✓			✓	✓				✓		✓	
3.6	consultant changes by the client and the consultant	✓	✓	✓	✓	✓	✓						
3.7	Delayed in materials approval	✓		✓			✓		✓		✓		
3.8	Lack of clarity of the document	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3.9	In completed document	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3.10	Underestimating real cost	✓		✓						✓		✓	
3.11	Late submission of documents	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3.12	**Late approval of rates**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.0	**Work-related conflicts**												
4.1	Design errors	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓
4.2	Disagreement between parties	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.3	Requirements of parties	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.4	Contradictory record-keeping,									✓		✓	
4.5	Poor coordination	✓		✓			✓	✓	✓		✓		✓
4.6	Incorrect record keeping		✓		✓						✓		✓
4.7	Approved unavailability of resources	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.8	Poor communication	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.9	Less experience									✓		✓	
4.10	Late submission of approval	✓		✓		✓			✓			✓	
4.11	Negligence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.12	Delayed instruction	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.13	Delayed work	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.14	**Difficulties in controlling & reporting**	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓

During the interviews, interviewees have identified forty-three (43) conflicts. Those all are divided into three categories, which are consultant's conflicts, contractor's conflicts, and consultant vs contractor conflicts. The consultant's vs contractors' conflicts are divided into two categories. All interviewees responded to both parties' conflicts as common conflicts; all interviewees did not respond to both parties' conflicts non-common conflicts. As per the consultant's perspective, the consultants have identified two (2) conflicts as only consultant's conflicts which are impracticable design and consultant changes by the client and the consultant. As per the contractor's perspective, the contractors have identified four (4) conflicts as only contractor's conflicts which are contradictory record-keeping, less experience under relationship conflicts & work-related conflicts. All Interviewers have not responded to both parties' non-common conflicts fifteen (15) and all interviewees responded to both parties' very important common conflicts these were twenty-two (22) among those forty-three (43) conflicts.

(a) Payment conflicts

All interviewees identified important most common conflicts as delay in payment & non-payment. The common conflicts situation represented by consultants & contractors can be seen as financial issues. The non – payment and delayed payment matters are habitual problems between consultants and contractors. In the findings, interviews directed to all experts, delay in payment, and non-payment created two of the above-mentioned payment issues.**CN1** stated that the "*According to a condition of the contract client did not pay to the contractor. Actually, the contractor had a problem with cash flow".* All consultant's members accepted payment delay as a serious issue, they had expressed during the post-contract stage.**CR1** mentioned that "*The consultant was not to paid monthly payment continuously. As the contractor had bad cash flow, this is a serious issue. A contractor had faced subcontractors 'payments and labour payments".***CR4** stated that *"Delayed payments have occurred bad situation for the construction program. Actually, the serious situation they had faced during post-contract stage".* The **CN5 & CN6** were confirmed the above statement. Fisher (2000), stated that payment issues between both teams conflict anywhere two teams in unity component find mismatches.

On the other hand, a most common situation about non-payment matters.**CN1** stated that "*Some clients did not pay properly due to their financial issues & re- measurement quantity issues. Therefore, the contractor could not pay the subcontractors because their cash flow was negative."* The speech exposed that non-payment worried the completion of the construction happening to needless excess duration and relationships matters. Furthermore, experts and members accepted that non-payment occurred other issues in bad- workmanship, reviewed measurement results, labourers idling, and labour shortage in the re-measurement contract. As literature review, Wu Qiuli, et. al, (2013), identified non-payment can occur, reviewed measurement results and it should be touched in the way planned in the project. However, according to Howe (2013), delay payment, without payment can also frequently be a managerial conflict or an interactive conflict dependent on the conditions.

Furthermore, in the findings, late submission of interim payment certificate and interim payment application are non-common conflicts in the re-measurement contract.**CN2**stated that "*In re-measurement contract, all works had measured according to actual work done & rules to be maintained according to the standard guideline. Another thing is that the contractor had done more work in one month, therefore, in the second month they don't have any work. However, a consultant needs more time and contractor wants to more time to prepare a valuation*". According to **CR1**, the contractor always believes in the consultant's action to maintain a good relationship and achieve the goal. Therefore, parties needed more time. However, both parties tried to resolve it fairly. Senaratne and Udawatha (2013) named task-connected conflicts as conflicts to managerial processes.

In re-measurement contracts most, important common conflict is the financial issue of the final value. More stakeholders participated to achieve their one goal. Therefore, the numbers of variations are frequently high in all four projects. According to **CR6**, they have identified about 160 variations at the completion of the project. Therefore, the client had spent extra costs. On the other hand, omission of BOQ quantities design errors and changes in the client's requirement raised additional amounts to the final value. Therefore, we cannot predict the final value.**CN1** agreed. Therefore, financial

issues of final value cannot predict especially in a re-measurement contract. It was revealed by Cheng. Zhang, & Zhang (2014), who have identified clients' risk as very high in this situation.

(b) Relationship conflicts

The interviewees notified that the re-measurement contract habitually challenged relationship conflict situations. Research findings appeared that social variety is a mutual thing due to different educational backgrounds, different behavior & attitudes, different social statuses, and different characteristics will often create conflicts. Accordingly, re-measurement building construction has to involve the same situation due to the participation of more stakeholders & more parties.

CN1 revealed that consultant and contractor conflicts are the most common situations in the re-measurement construction industry. All stakeholders stated that "*The problem is consultant and contractor are not very adjacent. Consultant and contractor opinion is not corrected with the problem. They work together. However, both parties have many different opinions".* **CN1**stated that*, "Chartered engineers, assistant engineers represented by the contractor's arguments to some related work. Therefore, unprofessional behavior with disagreements with parties occurred".* According to Cheng, Zhang, & Zhang (2014), those opinions exposed more consultant-contractor conflicts that have arisen in the working level of the professional hierarchy.

CN2 stated that mainly the issues between the contractor and subcontractor have occurred due to resource handling, quality, and payment issues. This is a mutual case in four projects. *"The main contractor is handled with poor communication, different attitude, late submission of documents, supervision, and coordination due to occurred disagreement of parties. Therefore, the subcontractor did not like to work with the main contractor and rejected the contract with the main contractor. Then the subcontractor liked to work with the owner and stopped the work".* Then this conflict became a conflict between the consultant and the contractor. This statement revealed by Acharya et.al., (2006), pointed that poor supervision, poor managerial process and source provision matters would strongly interrupt the task-associated matters.

On the other hand, conflict situation relationship between the contractor and specialized contractors. As per re-measurement, the contract can be seen more practice of specific procurement procedure. According to **CR1** stated that "*Resource handling is very difficult to coordinate with a specialized contractor. All specialized contractors had requested the same facilitation. But not given the same facility to all specialized contractors. Therefore, raised the conflicts between them in the post-contract stage. They always tried to resolve the performance not contractually. Thus, conflicts will occur with contractor and specialized contractor".* Therefore, the work is stopped. Thus, this conflict became a conflict between the consultant and the contractor. This is in line with Rahim (2002), who suggested that interactive conflicts will protect the effective achievement of the construction. Therefore, more affect to decrease the risk approaching from the extra teams and grow their authority.

According to **CR3**, The conflict is between labourers having arguments, disagreements and even damaging the property. Further, **CR4** stated that "*More conflicts had arisen in uncommon cases, the contractor had to interfere to resolve them. but did not work continuously"*. **CN06** established this conflict is related to the consultant & contractor conflict and this situation is comparable to practices, as such as in project 04. According to Dechurch et al. (2007), he pointed serious relationship conflicts that will disturb the effort routine.

In the findings, between the consultant and contractor relationship conflicts such as designed changes, lack of contract management, requirements of more consultant teams, and difficulty of coordination. As per the **CN1**, the additional design complex is created with the design changes. Through the interviews with experts, relationship conflicts were called task-related conflicts. Some design parts and contract management parts are to be handled by separate special teams. Therefore, it is necessary more teams. Therefore, difficulty coordination and conflicts are high. it is revealed that more parties involved had occurred more conflicts. Leung et. al, (2005), identified as various purposes and incompatible documents relations might aim to intra-group conflicts. This is in line with issues of re-measurement contract in the literature review.

Contradictory record-keeping is identified the contractor's party as relationship conflicts.**CR3** stated that "*Contradictory record-keeping creates more conflicts with our parties. Because the first-floor plumbing layout drawing & second-floor plumbing layout had small changes, therefore, two drawings are to be issued. When laying pipework on the first floor, selected the 2nd-floor layout had problems because of incorrect record keeping. Having finished the work consultant disagreed with us. He said you have to do the work according to drawings at your own cost".* This conflict created big money and time losses. Senaratne &Udawatta (2013), identified relationship conflicts habitually arise due to task-related matters.

(c) Documentation related conflicts

As per the meeting directed, they introduced five important conflicts under documentation conflicts. They are the lack of clarity of documents, poor documentation, late submission of documents, contradictions of documents, and in completed documents.

The most common conflict situation is a lack of clarity of documents. In the re-measurement contract, design changes are one of the frequent conflict situations in the post-contract stage.**CN1** pointed that "*Lots of design changes resulted in many obstacles due to increased target budget, getting many approvals, etc. furthermore in the initial stage design had more changes".***CN4** stated that "*Many changes to occurred due to more additional period used to correct the design".* According to Hoegl (2001), more teamwork superiority is a significant issue for team products. Curseu (2011), mentioned that negative team feelings are damaging to the worth of interactive group communication. Those are in line with the above findings. According to CR**1**, with more design came more design changes. In the discussion with both parties, four projects had design changes. According to WuQiuli, et. al, (2013), a site visa is very important to a re-measurement contract, the visa is only the basis of compensation claim and documentation-related conflicts.

The most common conflict situation is poor documentation. Some work items which is in the drawing but not priced in the BOQ. Therefore, errors, omissions, or addition

in documents are the main cause of conflicts.**CR1** mentioned that "*Actually, In the pricing of the initial stage, some work item did not mention in the description. however, the Contractor is priced without cost for some work items. Poor documents will have occurred in documentation conflict, The consultant did not issue some drawings and specifications initial stage. But the contractor had used alternative specifications to control the budget. Therefore, rate problem will have occurred in post-contract stage".* On the other hand, **CR4** stated that "*There is no respectable path price escalation in the re-measurement contract. However, price escalation for import materials and type of money must be involved to analyze the cost adjustment of import resources. Then, happened in documentation errors".***CR2** pointed that "*BOQ mentioned lower quantity than the usage quantity. How to take the duty-free facilities. So, this has happened with fewer tiles measurements according to BOQ"*. Teams parties' experts identified the and common cases in the re-measurement contract in the post-contract stage. However, the initial contract amount is to be increased. The other stakeholders confirmed that huge errors that occurred in negligence are not human errors. This is in line with the findings of Arditi &Thaveeporn, (2010), who identified that the comprehensiveness of contract documents, amendments done to conditions are involved in the adversarial atmosphere between the contractor and the consultant which fails to create a cooperative environment.

The common conflict situation is the delayed submission of documents.**CN1** stated that "*The condition of the contract is given on condition for submission of interim valuation. They did not agree to follow the condition of the contract. They give more progress first submission of their application. Therefore, submission is to be late".* Further to **CN3** pointed that delay submitting the valuation frequently occurred influences and preventions damaging the stakeholder's relationship. Jehn & Chatman (2000), Simons & Peterson (2000), and Senaratne &Udawatta (2013) revealed that situation in an administration conflict and is an achievement in one goal.

The commonly seen conflict is contradictions of documents in the re-measurement contract. **CR6** stated that *"112 mm thick. brick wall. in the BOQ, 112 mm thick. a brick wall is priced. The different thickness is mentioned in the drawing. In the meeting, they*

disused the matter. This conflict happened in the contradiction between BOQ and drawings". According to the condition of the contract, drawing is the priority of the agreement. The problem is 225mm thick. brick wall which is shown in the drawings but not shown in the BOQ. The contradictions of documents create the increasing professional's responsibilities into conflicts (Jaffar et. al, 2011),

Incompleted construction documents are another conflict situation in the re-measurement contract. The most common conflict situation is in completed design drawings.**CR5** stated that "*As a common situation for project 02 & Project 04. when starting the MEP work most of the MEP work layout of the ceiling was still not completed. However, the completed structural work was used with an incomplete MEP working layout. Therefore, when it was completed, we had to change more ended items. which created huge conflicts. Furthermore, it wasted time & money on additional work. This has occurred as the parties to some influences & disagreements.* Senaratne &Udawatta, (2013) said the conflicts revealed in design are frequently created by improper design mismatches according to the design situation. They recognized this conflict type as administrative conflict.

Furthermore, in the meeting, non-common conflicts are mentioned as negligence, where designs are not finalized, delayed material approval, and underestimates the real cost.**CR2** stated that "*Contractor needed more tile than it is mentioned in BOQ".* According to BOQ tile quantity is less than usage quantity. Further to **CN1**, this situation had resulted in an argument with both parties. The stakeholders who attended the meetings pointed that documentation errors are mentioned that most of the negligence is not due to human error. **CR3** mentioned that "*By we started the laying of conduit on first-floor slab, designs are not finalized. when they are finalized, we had changed several items. This occurred a lot of conflicts. Consultant teams are agreed that duty in our team but more work had to do limited period*". **CR4** stated that "*A lot of work carried out finishing stage to achieve the target, but tiles sample still not approved"*.**CN1** agreed to material approval given by the consultant team but due to the delay, teams had a lot of work in a given period. **CR5** mentioned that "*In the initial stage, some rates are underpriced due to lack of specification & drawing. Quantity*

surveyors followed alternative specification trying to control the budget".**CN1** stated that *"The consultant did not like to lose the client's money and try to protect the contractor. In the initial stage, you had to admit that, both parties had mistaken".* Simons & Peterson (2000), Senaratne &Udawatta (2013), and Dechurch et.al., (2007) all are suggested disagreements may occur between task-related conflicts among parties in accomplishing the goal.

Late approval of rate is the most common conflict identified by stakeholders by both parties. **CR2** mentioned that "*The project is to be completed given period but some rates are still not finalized. When finalizing the rates both parties had arguments due to achieving contractor expenses. This occurred in a lot of conflicts.in addition, to waste of time"*. Jehn &Chatman, (2000), identified this conflict type as process-related, administrative conflicts.

Impracticable design is a non-common documentation conflict in the four cases. **CN3** stated that "*There is more impracticable design in projects. Initial design. had to be corrected before issuing construction drawings. Therefore, steel quantities had increased. But the addition of steel qty created more conflicts".* This is revealed that more time and power are wasted to correct designs within a limited period and extra quantity due to an increase in the budget. Irfan et. al, (2019) identified that initial errors, workload, and ambiguity in specification created more conflicts.

Consultant changes by the client and the consultant as documentation non-common conflicts in the four cases. **CN1** mentioned that "*some initial design had changed due to suggestions by the owner. However, these are variations. and are categorized as owner suggested conflicts*". When variations are created any time which contractors had with occupied. Huan&Yazdanifard (2012), identified task conflicts principles will arise from different opinions, viewpoints, and ideas.

(d) Works related conflicts

The conflicts identified are common and non-common conflicts, both parties and stakeholders are categorized into four conflict situations discussed at the meeting.

Therefore, those four conflicts are namely, issues about approval of unit price, matters about construction quality and resources, and variation. However, Huan &Yazdanifard, (2012), Senaratne &Udawatta (2013), identified works related conflict types as task conflicts.

Issues about agreeing on rates are common conflict situations in the re-measurement construction industry. **CN6** stated that "*Basically if considered re-measurement contract, had done massive situation approved unit rate. So, sometimes the contractors had issued unreasonable rates, the consultant had argued with the contractor. So, the consultant had some cases carefully maintain the matters increasing rates. Therefore, these conflicts occurred disagreement with contractor and delay to the project".* It is in line with Simons and Peterson, (2000). They have identified these as process-related conflicts.

Issues regarding the resources as a common situation in four projects. According to all contractor's respondents**,** it is stated that *"Actually, approved unavailability of resources is a very critical case for all four projects. The Project did not have more super-workers and saves them in the project & timely supply resources to keep in the long run. However, the consultant had approved unavailability resources. Therefore, contractors did not supply materials on time then workers went out for outside works". We couldn't achieve completion of the contract*". Therefore, conflicts occur with both parties. Furthermore, both parties pointed out that they have provided that other facilities such as scaffolding, formwork, electrical facilities & water facilities to the sub-contractor and specialized contractors. Huan & Yazdanifard, (2012) and Senaratne&Udawatta (2013), identified works related conflict types as task conflicts regarding resources.

On the other hand, Parties paid full attention to requirements between parties.**CR**2 stated that the *"client did pay us Rs.0.5million immediately to clear material from the customs. The contractor did not pay this amount until the project is finished. The client did not consider because professional relationship made a good path for future".* In this situation, money resources are the main issue in the contractor.

The quality issues are the main problems in four cases. It is a very critical situation that directly involved the owner's requirements.**CR1** stated that "*Actually bad situation for efficient super-skilled labour. However, poor workmanship and poor communication is one of the reasons above situation".* Furthermore, work quality is to create more quality of work. The low quality of the product is not in a given value.**CN1 & CN6** and identified most of the supply materials were not of good standards. However, The consultant had frequently identified used low-quality products. This is in line with Ng and Skitmore (2000) that high-quality materials give a good quality final product not by distributing low duration and less cost for the construction industry.

Variation is the most common situation in four cases. Acharya et al. (2006), mentioned that variations were raised due to several requirements of the client and uncertain construction activities. recognized by the client. Therefore, it often created two groups which are owner-suggested conflict and consultant-suggested conflicts. Both parties' stakeholders who participated in the meetings established that variations are frequent to all four projects**. CR6** stated that "*Both consultant & client had done a lot of major changes, late submission of approval, delay instruction, negligence, incorrect record-keeping, and initial designs were created more variation approximately about 160 variations after project 04. Therefore, the contractor had spent more time".* According to **CN2**, it is necessary for them to achieve the completion date of the project's huge number of variations and had with several meetings should be controlled the conflicts occurred by the variation. Poerdiyatmono, (2007) identified that more defects for the contract document, drawing, and specification, will often lead to variation in the project which is work-related conflicts.

Less experience is identified by the contracting party as work-related conflicts**. CR5** stated that "*Engineer given instruction, shoring system it is needed to this side. You have to select a suitable system. The contractor's subordinate party already used GI pipe with timber planks. The contractor had argued with the engineer this is a suitable system. Having finished work, the contractor had identified this system is not suitable".* Less experience creates more loss and more conflicts.Huan&Yazdanifard

(2012), task matters on principle will arise to the person having different opinions, viewpoints, and ideas.

CR3 stated that "*Contradictory record-keeping is created more conflicts with our subordinate's parties. Lift bobby tile lay design not matched according to drawing. Contradictory record keeping created the above conflicts. They stopped the work. The consultant party argued, immediately correct according to drawing"*. This conflict created big money and time losses. Udawatta (2013) mentioned these issues in administration conflict and it is an interruption as a target-focused on conflict.

CR4 mentioned that the *"Controlling and reporting very difficult due to more stakeholders being involved in many activities. The contractor had done controlling and reporting within the contract. Subordinate parties are involved due to the lack of their program. More conflicts had occurred in the main construction program. Therefore, conflicts accrued between consultant & contractor about maintaining the main program".* Udawatta (2013) mentioned these issues in administration conflict and it is an interruption as a target-focused on conflict.

4.5.2. Conflict-handling styles faced by the consultants during the post-contract stage in the re-measurement contract

In the second part of the interview, it is discussed the conflict-handling styles that can be used by the consultant. Initially, the conflict-handling styles were identified with the use of literature review, and styles are currently used in the re-measurement by consultants were identified with the use of interviews. Those all conflict-handling styles used by the consultant were shown in Table 4.4 below.

Table - 4.4 Conflict handling styles used by consultants in the re-measurement contract during the post-contract stage

No.	Category	Type of Conflicts	Conflict Handling styles
1.1	**Payment conflicts**	Financial issues of the delay payment	• Integrating • Compromising • Dominating
1.2		Late submission of interim payment certificate	• Integrating • Compromising
1.3		Financial issues of the non-payment	• Dominating • Control
1.4		Late submission of interim payment application	• Integrating Compromising
1.5		Financial issues of the final value	• Integrating • Compromising • Obliging
2.1	**Relationship conflicts**	Unprofessional behavior	• Compromising • Integrating • Obliging • Inaction
2.2		Poor communication	• Integrating • Compromising • Problem-solving • Obliging • Collaborating • Avoiding
2.3		Design changes	• Dominating • Integrating • Avoiding • Collaborating
2.5		Disagreement between parties	• Compromising • Integrating • Avoiding • Obliging
2.6		Difficulties in coordination	• Dominating • Collaborating • Integrating • Avoiding
2.7		Difference in attitudes	• Compromising • Integrating • Avoiding • Yielding

No.	Category	Type of Conflicts	Conflict Handling styles
2.8		Late submission of documents	• Compromising • Integrating • Avoiding • Dominating
2.10		Lack of contract management	• Dominating • Avoiding • Collaborating • Integrating
2.11		Supervision and coordination	• Integrating • Obliging • Solution-orientation • Compromising
2.12		Requirement of more consultant teams	• Compromising • Integrating • Obliging
3.1	**Documentation conflicts**	Poor documentation	• Compromising • Integrating • Obliging • Avoiding • Problem-solving • Collaborating
3.2		Contradiction of documents	• Avoiding • Collaborating • Integrating • Compromising • Problem-solving • Obliging
3.3		Negligence	• Dominating • Integrating • Avoiding • Collaborating
3.4		Impracticable design	• Dominating • Integrating • Collaborating • Avoiding
3.5		Designs are not finalized	• Collaborating • Integrating
3.6		Consultant changes by the client and the consultant	• Avoiding • Dominating • Integrating
3.7		Delayed in materials approval	• Compromising • Integrating

No.	Category	Type of Conflicts	Conflict Handling styles
3.8		Lack of clarity of the documents	• Compromising • Integrating • Obliging • Dominating • Avoiding
3.9		In completed documents	• Integrating • Compromising • Obliging • Dominating • Avoiding
3.10		Under estimating real cost	• Integrating • Problem-solving • Compromising
3.11		Late submission of documents	• Integrating • Compromising • Obliging • Dominating • Avoiding
3.12		Late approval of rate	• Integrating • Compromising • Obliging
4.1	**Work-related conflicts**	Design errors	• Compromising • Collaborating • Integrating
4.2		Disagreement between parties	• Compromising • Collaborating • Integrating
4.3		Requirement of parties	• Obliging • Compromising
4.5		Poor coordination	• Compromising • Avoiding • Integrating • Obliging
4.6		Incorrect record keeping	• Dominating • Integrating • Control
4.7		Approved unavailability of resources	• Compromising • Integrating • Problem-solving
4.8		Poor communication	• Compromising • Integrating
4.10		Late submission of approval	• Integrating • Solution-orientation • Obliging

No.	Category	Type of Conflicts	Conflict Handling styles
4.11		Negligence	• Dominating • Integrating • Control
4.12		Delay instruction	• Integrating • Compromising
4.13		Delayed work	• Integrating • Control
4.14		Difficulties in controlling and reporting	• Compromising • Integrating

According to the 4.4 table, there were identified thirty-nine (39) conflicts in consultant responses in the interviews. There are identified eleven (11) conflict-handling styles that can be used in thirty-nine (39) conflicts in the meetings. The accommodating, competing, non-confrontation, withdrawal, and contending handling styles were not in practice in four projects. The literature review identified the sixteen (16) conflict-handling styles and thirty-nine (39) conflicts. The consultant' parties were identified conflict-handling styles as discussed as follows.

The consultant parties had faced the most common important conflict situation in delay payment.**CN2** clearly stated that "*The consultant most of the situation had with meeting and maintained a good relationship with the contractors."* This statement revealed that a consultant had to get a satisfactory answer from the client. In the findings, integrating and compromising, more used and less used dominating conflict-handling styles to resolve a conflict. In the findings, dominating and control styles are the most used styles in financial issues in non-payment.**CN1** mentioned that "*Some clients did not pay properly due to his financial issues".* According to **CN1**, the power had been used and gained carefully in the correct consent. According to payment-related conflicts that occur in late submission of interim payment certificate & delayed submission of interim payment, applications are in non-common conflicts in four cases. **CN2**stated that "*In re-measurement contract, all works had measured according to actual work done".* This statement revealed that more time frame has occurred in this situation. They used to integrate and compromise styles by gaining maximum satisfaction for both parties.**CN2**stated that "*The consultant and client had changed*

some initial design due to raised more variations. Therefore, cannot predict final amount". In the findings, the integrating, compromising & obliging styles had managed the meeting.

Unprofessional behaviors and different attitudes are a common situation in four cases.**CN1** revealed that *"Regarding a lot of mismatching ideas due to arisen unprofessional behaviors".* They used most of the common methods in negotiation. Therefore, we used to integrate, compromise, obliging, and inaction styles for handling these conflicts. Poor communication, poor documentation, contradictions of documents are the common situation in four cases**.CN1** stated that "*Main contractor due to poor communication, resources had not distributed equal portion of their subordinates' parties. The consultant had not issued specifications for the initial stage due to poor documentation. Contradictions of documents had occurred BOQ and drawings issues. All those situations had occurred, disagreement of parties".* Those statements revealed that the team members did not pay their full attention, they would like to use common methods in negotiation. Therefore, they used compromising, integrating, problem-solving, obliging, avoiding &collaborating styles for handling these conflicts.

The non - common conflicts are in four projects such as design errors, impracticable design, difficulties incoordination, lack of contract management, and negligence. According to **CN1**, most of the design changes and lack of contract management result in more variations. "*On the other hand,* the *initial design had to gain more changes due to the negligence".* The findings most used dominating integrating, avoiding & collaborating conflict-handling styles to resolve the conflicts.**CN2** mentioned that common conflict in the late submission of documents"*Actually, need more consultant teams due to having a lot of work within the limited period in the re-measurement contract".* They used conflict-handling styles are integrating, compromising, dominating & avoiding styles.

Designs are not finalized is a non-common conflict in four cases**.CN5** identified that "*Still not finalized lift lobby tile layout drawing when starting the work".* According

to **CN5,** our teams had a lot of work within a limited period. As per the findings, stakeholders who used the conflict-handling styles are collaborating and integrating. Consultant changes by the client and the consultant as a documentation conflict, identified by only the consultant party in the four cases.**CN1** it is mentioned that *some initial designs had been changed due to suggestions by the owner.* The stakeholders' used avoiding, dominating & integrating conflict-handling styles. **CN1** argued that delay in material approval is a duty in the consultant team due to huge work lord barricaded to our responsibilities. These conflicts situation created the parties' influences and issues, but they are more used to the integrating and compromising styles. The most common conflict situations are the lack of clarity of documents, in completed construction documents. In the re-measurement contract, **CN1** pointed that "*Lot of design changes which occurred many variations due to increased target budget. Most of MEP working drawings are not completed due to huge work lord limited time. Late approval of rates occurred to delay the work".* Those statements revealed that the party could not fully intend these situations. In the findings, they have used the compromising, integrating, and obliging, dominating & avoiding styles to manage conflicts.

Furthermore, design errors, poor communication, and disagreements between parties are common situations in four cases.**CN1** mentioned that "*BOQ mentioned different thickness in-floor concrete leads to design error conflict. This conflict occurred poor communication and disagreements between parties".* According to **CN6,** duty in the consultant team due to huge work lord barricaded to our responsibilities. They used compromising, integrating collaborating styles to manage both party's goals and their relationship as per the issues.**CN1**stated that "*In the re-measurement contract, numbers of variations are high. Therefore, rates approval is to be delayed. Therefore, these conflicts occurred disagreement with parties, and delay to the project".* They have used the compromising, integrating & obliging styles to manage conflict. **CN2** stated that "*Some materials are approved by the architect, but these not available in the market in this period".* They have used the compromising, integrating styles to manage conflict. On the other hand, Parties paid full attention to requirements between parties.**CN2** stated that *"The contractor needs to 0.5 million immediately to clear the*

material from customs". Further to **CN2**, they used the obliging & compromising styles to manage the situation expert level. Incorrect record-keeping is another non-common conflict in work-related conflict. **CN2** stated that "As *an Engineer, our responsibility is to issue correct drawings to the contractor and you have kept correct place".* Incorrect record-keeping causes arguments with both parties. In Sri Lanka construction industry use dominating styles often than integrating or controlling. According to **CN5**, *"Late submission of approval, and poor supervision & coordination will be occurred delay the project".* **CN1**agreed, duty in the consultant team due to huge work lord barricaded to our responsibilities. The most common styles are integrating, solution-orientation and obliging styles are suitable for conflicts that can be managed situations. Further to **CN2**, "*Delay instruction is created by delayed works & variation*. In the findings, they had used the compromising, integrating styles to manage conflict. **CN1** mentioned that "*In re-measurement contract, more stakeholders were involved all activities. A consultant had difficulty in controlling and reporting within the construction program".* The compromising & integrating styles are the most effective conflict-handling styles to resolve conflict. Furthermore, **CN1** stated that "*Delayed work, had gained more conflicts. Liquidated damages in one of the conditions of the contract to control the delay".* In this situation, integrating and compromising styles are effective conflict-handling styles to protect good professional ship future projects.

4.5.3. Conflict-handling styles faced by the contractors during the post-contract stage in the re-measurement contract

In the second part of the interview, it is discussed about the conflict-handling styles that can be used by the contractor. Initially, the conflict-handling styles were identified with the use of literature review, and styles are currently used in the re-measurement by contractors were identified with the use of interviews. All those conflict-handling styles used by contractors were shown in Table 4.5 below.

Table - 4.5 - Conflict handling styles used by contractors in the re-measurement contract during the post-contract stage

No.	Category	Type of Conflicts	Conflict Handling styles
1.1	**Payment conflicts**	Financial issues of the delay payment	• Integrating • Compromising • Control
1.2		Late submission of interim payment certificate	• Integrating • Compromising
1.3		Financial issues of the non-payment	• Compromising • Integrating • Problem-solving
1.4		Late submission of the interim payment application	• Integrating • Compromising
1.5		Financial issues of the final value	• Integrating • Compromising
2.1	**Relationship conflicts**	Unprofessional behavior	• Compromising • Integrating • Inaction
2.2		Poor communication	• Compromising • Integrating
2.3		Design changes	• Integrating • Compromising • Avoiding
2.4		Contradictory record keeping	• Integrating • Avoiding
2.5		Disagreement between parties	• Compromising • Integrating
2.6		Difficulties in coordination	• Compromising • Integrating • Avoiding
2.7		Difference in attitudes	• Compromising • Integrating
2.8		Late submission of documents	• Compromising • Integrating
2.9		Less experience	• Compromising • Integrating • Avoiding
2.10		Lack of contract management	• Avoiding • Compromising

No.	Category	Type of Conflicts	Conflict Handling styles
2.11		Supervision and coordination	• Compromising • Integrating
2.12		Requirement of more consultant teams	• Compromising • Integrating • Avoiding
3.1	Documentation conflicts	Poor documentation	• Compromising • Integrating • Avoiding
3.2		Contradiction of documents	• Avoiding • Collaborating • Integrating • Compromising
3.3		Negligence--	• Dominating • Integrating • Avoiding • Solution-orientation
3.5		Designs are not finalized	• Collaborating • Integrating
3.7		Delayed in materials approval	• Compromising • Integrating
3.8		Lack of clarity of the documents	• Compromising • Integrating • Obliging
3.9		In completed documents	• Compromising • Integrating
3.10		Underestimating real cost	• Integrating • Problem-solving • Compromising
3.11		Late submission of documents	• Dominating • Compromising • Avoiding
3.12		Late approval of rate	• Integrating • Compromising
4.1		Design errors	• Compromising • Collaborating • Integrating • Avoiding
4.2		Disagreement between parties	• Integrating • Compromising

No.	Category	Type of Conflicts	Conflict Handling styles
4.3	Work-related conflicts	Requirement of parties	• Obliging • Compromising • Integrating
4.4		Contradictory record keeping	• Dominating • Problem-solving • Control
4.5		Poor coordination	• Compromising • Avoiding • Integrating • Collaborating
4.6		Incorrect record keeping	• Dominating • Control
4.7		Approved unavailability of resources	• Compromising • Integrating
4.8		Poor communication	• Integrating • Compromising
4.9		Less experience	• Integrating • Compromising
4.10		Late submission of approval	• Compromising • Avoiding • Obliging • Dominating
4.11		Negligence	• Dominating • Control • Solution-orientation
4.12		Delay instruction	• Integrating • Compromising
4.13		Delayed work	• Integrating • Compromising
4.14		Difficulties in controlling and reporting	• Integrating • Compromising

According to the 4.5 table, it has identified forty-one (41) conflicts in contractor responses in the interviews. It has identified ten (10) conflict-handling styles that can be used in forty-one (41) conflicts in the meetings. The accommodating, competing, non-confrontation, withdrawal, yielding, and contending handling styles are not in practice in four projects. The literature review identified the sixteen (16) conflict-handling styles and thirty-nine (39) conflicts. The contractors' parties were identified conflict-handling styles as discussed as follows.

Delay in payment is a common important conflict in all four cases.**CR3** stated that *"Delay payment is directly involved our cash flow*". Professionals are always trying to maintain a good relationship with clients. In the findings, more used integrating and compromising and less used controlling conflict-handling style in the situation.**CR1** mentioned that the *"Client did not pay the main contractor due to financial issues".* According to this situation, it created the group's influences and argument but never used dominating style they more used the integrating and compromising & problem-solving styles because maintaining professional relationships for future success. Late submission of interim payment certificate and late submission of interim application are non-common conflicts in four cases. **CR2** stated that "*In the re-measurement contract both parties had involved measuring the quantity according to actual at the site".* This statement revealed that more time frame has occurred in this situation. They used more conflict-management theories such as integrating and compromising according to the situation. Financial issues of final value are a common situation in a re-measurement contract.**CR1**stated that "*Variations are frequently high in the re-measurement contract due to design error omission of quantities. Therefore, can not predict final value".* In the meeting, both parties managed the variations more used in integrating & compromising styles for the understanding and goodwill between the teams.

Unprofessional behavior is a common conflict situation in four cases.**CR1**stated that "*Engineer and work supervisor's arguments in some related work. Therefore, occurred unprofessional behavior and disagreements with parties".* They used the most common methods in negotiation. Therefore, they used compromising, integrating & inaction styles for handling these conflicts.**CR2** stated that "*The consultant had not to pay the main contractor due to quality issues. The main contractor had not paid the subcontractor due to poor quality. The main contractors argued with the subcontractor those reasons occurred due to payment issues. These are poor communication, different attitude, late submission of documents, poor supervision, and coordination due to issues delayed payment".* Both parties involved & resolved these conflicts in used negotiation styles. Therefore, they used compromising &

integrating styles for handling these conflicts. The common relationship conflicts are design changes, difficultly coordination, and lack of contract management. According to **CR1**, initial designs are to be changed consultants due to used poor coordination & lack of contract management in the pre-contract stage.**CR2** stated that the contractor managed the issues according to the situation. The contractor party is more used to integrating and compromising, & avoiding styles to resolve conflicts. Less experience is identified by the contracting party as relationship conflicts. **CR5** stated that "*Engineer instructed the main contractor needed smooth plaster to this sidewall. But main contractors had not considered due to less experience"*. Less experience has created more loss and more conflicts. Therefore, they used more compromising & integrating styles often than avoiding handling styles. According to **CR1** stated that "*Consultancy parties had more work with a contractor such as getting measurements according to the site, preparing planning and scheduling, checking quality, materials approval, etc. Therefore, consultancy parties need more consultant teams, without teams occurring more conflicts".* they more used compromising & integrating styles better than avoiding styles managed conflicts,

Poor documentation leads to more documentation conflicts. **CR2** stated that "*BOQ is mentioned lower quantity than the usage quantity*.". The contractor party had suffered more mistakes in the post-contract stage. They used more compromising style better than integrating, avoiding styles. A contradiction of documents was the common most important conflict in the four projects.**CR2** stated that "*Conflict regarding 112 mm thick. brick wall is priced. But 225 mm thick wall in the drawing"*. The more used avoiding, integrating, compromising, and collaborating styles to maintain a good relationship. The commonly seen conflict is the lack of contract management in the re-measurement contract. **CR2**stated that *This conflict happened due to the contradiction between agreement and initially issued document in a condition of contract".* They argued both parties signed a document as a final document, avoiding is a suitable style than compromising to resolve poor contract management knowledge. The non-common conflict is negligence in four cases.**CR3** mentioned that "*Contractor needed more steel than it is mentioned in BOQ".* Those who attended the meetings were experts and had decided that these errors were not people's mistakes but negligence.

The experts used dominating integrating, avoiding & solution - orientation styles to resolve these conflicts.**CR3** mentioned that "*Contractor had started the laying of conduit on first-floor slab, designs are not finalized".* The most used conflict-handling style is collaborating more often than integrating. **CR4** stated that "*A lot of work carried out in the finishing stage to achieve the target, but tiles sample were still not approved.***CR4** argued that delay in material approval is the responsibility of the consultant teams. The more used compromising style is better than the integrating style. According to **CR1**, the absence of clarity of the documents is shown in the project program. In the discussion with both parties, some projects had shown clarity of the construction documents. Further **CR2**, the obliging, compromising & integrating style more used was able to manage 1.1this situation.

Another common situation was in completed construction documents in the re-measurement construction industry. **CR5** stated that "*Most of MEP works such as electrical, mechanical & plumbing works layout of the ceiling still not completed".* The more used integrating & compromising styles manage the incompleted documents. **CR5** mentioned that *"some rates are underpriced due to lack of specification & drawing.* The more used integrating, problem-solving &compromising styles for handling this conflict. Late submission of approval is a common conflict situation in re-measurement contracts.**CR1** mentioned that "*Actually consultant party did not issue the variation order on time".* Professionals are more used to dominating, compromising & avoiding styles in certain situations to manage the issues. In the meeting, stakeholders for both parties identified late approval of rate as the most common conflict in those cases. **CR2** mentioned that "*Project is to be completed given period but some rates are still not finalized".* The more used compromise and integration styles to manage conflict according to situations. Furthermore, according to **CR1**, some variations are created to design errors, and poor coordination, **CR1** mentioned that "*Regarding thickness for the ground-floor concrete. Priority to the documents, the contractor had followed the drawing. The drawing had shown a design error".* They used compromising, collaborating, integrating & avoiding styles to achieve maximum satisfaction according to the situation**.CR1**stated that, *"Contractor always try to approve the rates before completion of the work.* They used

compromising, & integrating styles to achieve maximum satisfaction according to the situation. **CR1**mentioned that "*Actually, approved unavailability of resources occurred to delay the project".* According to **CR2,** parties could not attend full intention because maintain the professional relationship, according to a situation; they are more used to compromising & integrating styles able to manage the conflict. Parties had full attention requirements between parties.**CR2** stated that "*Contractor needed to complete the first floor due to client's need special requirement".* They used obliging, compromising & integrating styles to maintain future goals.

Furthermore, **CR1** stated that "*Incorrect record keeping due to accrued delayed work. If delayed the work, we had a lot of conflicts".* According to him, the dominating style is the most effective conflict handling style better than controlling & problem-solving. Furthermore, **CR1** stated that "*Delay instruction more often created delayed work. If delayed the work, we need pay liquidated damages".* Both parties had seen conflict therefore, the integrating & compromising systems were the most effective conflict-handling styles to resolve the conflict. **CR4** mentioned that the *"Contractor had done controlling and reporting within the contract.".* They used more integrating and compromising as the most effective conflict-handling styles to resolve the problem.

4.5.4. Conflict-handling styles used by the Consultants Vs Contractors during the post-contract stage in the re-measurement contract

In this section, a comparison was done on conflict-handling styles used by the Consultants Vs Contractors during the post-contract stage in the re-measurement contract with the use of the above findings in tables 4.4 and 4.5 as shown in Table 4.6 below.

Table- 4.6 – Common & Unique Conflict handling styles used by consultants Vs contractors in the re-measurement contract during the post-contract stage

Category	Type of Conflicts	Common Conflict Handling styles used by both parties	Unique handling styles used by consultants party	Unique handling styles used by contractors party
Payment conflicts	• Financial issues of the delay payment	• Integrating • Compromising	• Dominating	• Control
	• Late submission of interim payment certificate	• Integrating • Compromising		
	• Financial issues of the non-payment		• Control • Dominating	• Problem-solving • Compromising • Integrating
	• Late submission of interim payment valuation	• Integrating • Compromising		
	• **Financial issues of the final value**	• Integrating • Compromising	• Obliging	
Relationship conflicts	• Unprofessional behavior	• Compromising • Integrating • Inaction	• Obliging	
	• Poor communication	• Integrating • Compromising	• Problem-solving • Obliging • Avoiding • Collaborating	
	• Design changes	• Integrating • Avoiding	• Dominating • Collaborating	• Compromising
	• Disagreement between parties	• Compromising • Integrating	• Avoiding • Obliging	
	• Difficulties in coordination	• Integrating • Avoiding	• Dominating • Collaborating	• Compromising
	• Difference in attitudes	• Compromising • Integrating	• Avoiding • Yielding	
	• Late submission of documents	• Compromising • Integrating	• Dominating • Avoiding	

Category	Type of Conflicts	Common Conflict Handling styles used by both parties	Unique handling styles used by consultants party	Unique handling styles used by contractors party
	• Lack of contract management	• Avoiding	• Dominating • Integrating • Collaborating	• Compromising
	• Supervision and coordination	• Integrating • Compromising	• Solution-orientation • Obliging	
	• **Requirement of more consultant teams**	• Compromising • Integrating	• Obliging	• Avoiding
Documentation conflicts	• Poor documentation	• Compromising • Integrating • Avoiding	• Obliging • Problem-solving • Collaboration	
	• Contradiction of documents	• Avoiding • Collaborating • Integrating • Compromising	• Problem-solving • Obliging	
	• Negligence	• Dominating • Integrating • Avoiding	• Collaboration	• Solution-orientation
	• Designs are not finalized	• Collaborating • Integrating		
	• Delayed in materials approval	• Compromising • Integrating		
	• Lack of clarity of the documents	• Compromising • Integrating • Obliging	• Dominating • Avoiding	
	• In completed documents	• Integrating • Compromising	• Dominating • Avoiding • Obliging	
	• Underestimating real cost	• Integrating • Problem-solving • Compromising		
	• Late submission of documents	• Compromising • Dominating	• Integrating • Obliging • Avoiding	

Category	Type of Conflicts	Common Conflict Handling styles used by both parties	Unique handling styles used by consultants party	Unique handling styles used by contractors party
	• **Late approval of rates**	• Integrating • Compromising	• Obliging	
Work-related conflicts	• Design errors	• Compromising • Collaborating • Integrating		• Avoiding
	• Disagreement between parties	• Compromising • Integrating	• Collaborating	
	• Requirement of parties	• Obliging • Compromising		• Integrating
	• Poor coordination	• Compromising • Integrating • Avoiding	• Obliging	• Collaborating
	• Incorrect record keeping	• Dominating • Control	• Integrating	
	• Approved unavailability of resources	• Compromising • Integrating		
	• Poor communication	• Compromising • Integrating	• Collaborating	
	• Late submission of approval	• Obliging	• Solution-orientation • Integrating	• Compromising • Avoiding
	• Negligence	• Dominating • Control	• Integrating	• Solution-orientation
	• Delay instruction	• Integrating • Compromising		
	• Delayed work	• Integrating	• Control	• Compromising
	• **Difficulties in controlling and reporting**	• Compromising • Integrating		

Table- 4.7 - Conflict handling styles used by consultants Vs contractors in the re-measurement contract during the post-contract stage

Category	Conflict Handling styles	Conflicts used by consultants	Conflicts used by contractors
Payment conflicts	• Integrating	• Financial issues of the delay payment • Late submission of interim payment certificate • Late submission of the interim payment application • **Financial issues of the final value**	• Financial issues of the delay payment • Late submission of interim payment certificate • Financial issues of the non-payment • Late submission of the interim payment application • **Financial issues of the final value**
	• Compromising	• Financial issues of the delay payment • Late submission of interim payment certificate • Late submission of the interim payment application • **Financial issues of the final value**	• Financial issues of the delay payment • Late submission of interim payment certificate • Financial issues of the non-payment • Late submission of the interim payment application • **Financial issues of the final value**
	• Dominating	• Financial issues of the delay payment • Financial issues of the non-payment	
	• Control	• Financial issues of the non-payment	• Financial issues of the delay payment
	• Obliging	• **Financial issues of the final value**	
	• Problem-solving		• Financial issues of the non-payment

Category	Conflict Handling styles	Conflicts used by consultants	Conflicts used by contractors
Relationship Conflicts	• Integrating	• Unprofessional behavior • Poor communication • Design changes • Disagreement between parties • Difficulties in coordination • Difference in attitudes • Late submission of documents • Lack of contract management • Supervision and coordination • **Requirement of more consultant teams**	• Unprofessional behavior • Poor communication • Design changes • Disagreement between parties • Difficulties in coordination • Difference in attitudes • Late submission of documents • Supervision and coordination • **Requirement of more consultant teams**
	• Compromising	• Unprofessional behavior • Poor communication • Disagreement between parties • Difference in attitudes • Late submission of documents • Supervision and coordination • **Requirement of more consultant teams**	• Unprofessional behavior • Poor communication • Design changes • Disagreement between parties • Difficulties in coordination • Difference in attitudes • Late submission of documents • Lack of contract management • Supervision and coordination • **Requirement of more consultant teams**
	• Obliging	• Unprofessional behavior • Poor communication • Disagreement between parties • Supervision and coordination • **Requirement of more consultant teams**	
	• Inaction	• Unprofessional behavior	• Unprofessional behavior
	• Problem-solving	• Poor communication	
	• Collaborating	• Poor communication • Design changes • Difficulties in coordination • Lack of contract management	
	• Avoiding	• Poor communication • Design changes • Disagreement between parties	• Design changes • Difficulties in coordination • Lack of contract management

Category	Conflict Handling styles	Conflicts used by consultants	Conflicts used by contractors
		• Difficulties in coordination • Difference in attitudes • Late submission of documents • Lack of contract management	• **Requirement of more consultant teams**
	• Dominating	• Design changes • Difficulties in coordination • Late submission of documents • Lack of contract management	
	• Yielding	• Difference in attitudes	
	• Solution-Orientation	• Supervision and coordination	
Documentation Conflicts	• Integrating	• Poor documentation • Contradiction of documents • Negligence • Designs are not finalized • Delayed in materials approval • Lack of clarity of the documents • In completed documents • Underestimating real cost • Late submission of documents • **Late approval of rates**	• Poor documentation • Contradiction of documents • Negligence • Designs are not finalized • Delayed in materials approval • Lack of clarity of the documents • In completed documents • Underestimating real cost • **Late approval of rates**
	• Compromising	• Poor documentation • Contradiction of documents • Delayed in materials approval • Lack of clarity of the documents • In completed documents • Underestimating real cost • Late submission of documents • **Late approval of rates**	• Poor documentation • Contradiction of documents • Delayed in materials approval • Lack of clarity of the documents • In completed documents • Underestimating real cost • Late submission of documents • **Late approval of rates**
	• Obliging	• Poor documentation • Contradiction of documents • Lack of clarity of the documents	• Lack of clarity of the documents

Category	Conflict Handling styles	Conflicts used by consultants	Conflicts used by contractors
Documentation Conflicts		• In completed documents • Late submission of documents • **Late approval of rates**	
	• Avoiding	• Poor documentation • Contradiction of documents • Negligence • Lack of clarity of the documents • In completed documents • Late submission of documents	• Poor documentation • Contradiction of documents • Negligence
	• Problem-solving	• Poor documentation • Contradiction of documents • Underestimating real cost	• Underestimating real cost
	• Collaborating	• Poor documentation • Contradiction of documents • Negligence • Designs are not finalized	• Contradiction of documents • Designs are not finalized
	• Dominating	• Negligence • Lack of clarity of the documents • In completed documents • Late submission of documents	• Negligence • Late submission of documents
	• Solution-Orientation		• Negligence
	• Compromising	• Design errors • Disagreement between parties • Requirement of parties • Poor coordination • Approved unavailability of resources • Poor communication • Delay instruction • **Difficulties in controlling and reporting**	• Design errors • Disagreement between parties • Requirement of parties • Poor coordination • Approved unavailability of resources • Poor communication • Late submission of approval • Delay instruction • Delayed work

Category	Conflict Handling styles	Conflicts used by consultants	Conflicts used by contractors
Work-related conflicts			• **Difficulties in controlling and reporting**
	• Collaborating	• Design errors • Disagreement between parties • Poor communication	• Design errors • Poor coordination
	• Integrating	• Design errors • Disagreement between parties • Incorrect record keeping • Approved unavailability of resources • Poor communication • Late submission of approval • Negligence • Delay instruction • Delayed work • **Difficulties in controlling and reporting**	• Design errors • Disagreement between parties • Requirement of parties • Poor coordination • Approved unavailability of resources • Poor communication • Delay instruction • Delayed work • **Difficulties in controlling and reporting**
	• Obliging	• Requirement of parties • Poor coordination • Late submission of approval	• Requirement of parties • Late submission of approval
	• Avoiding	• Poor coordination	• Design errors • Poor coordination • Late submission of approval
	• Dominating	• Incorrect record keeping • Negligence	• Incorrect record keeping • Negligence
	• Control	• Incorrect record keeping • Negligence • Delayed work	• Incorrect record keeping • Negligence
	• Solution-Orientation	• Late submission of approval	• Negligence

According to the 4.6 table is identified common and non-common thirty-seven (37) conflicts when both parties responded in the interviews. The non-common conflicts are fifteen (15) and the most common conflicts are twenty-two (22) totaling thirty-seven (37) conflicts. There are eleven (11) identified conflict-handling styles that can be used in thirty-seven (37) conflicts in the meetings. The common conflicts for both parties, unique to consultants and unique to contractors were identified as common conflicts given in highlighted and new conflicts were given in bold letters.

According to the 4.7 table is identified conflict-handling styles used by consultants vs contractors in the re-measurement contract during the post-contract stage. Both parties used conflict-handling styles as discussed follows.

Delay payment conflict is the most important common conflict situation for both parties in the re-measurement contract. According to **CN2**, the consultant had a meeting, discussed with both parties how to maintain the contractor's delay payment. According to **CR3**, professionals always try to maintain a good relationship with clients. These statements exposed that they are achieving extreme fulfillment as per the conflict issues. Integrating and compromising styles are common systems that maintain extreme satisfaction in both parties with a good relationship. Dominating & controlling styles were unique to consultant and contractor respectively.

Non-payment is an important common conflict between both parties. According to **CN1,** some clients did not pay properly due to their financial issues. if we had to use our authority, we had to pay the contractor. We used our authority to manage the conflicts that could be controlled for non-payment. Therefore, dominating & controlling styles are unique to the consultant. As per **CR1,** the contractor did not pay sub-contractors due to his financial issues. However, integrating, problem-solving, and compromising unique styles are used to resolve the situation.

Those conflicts for late submission of interim payment certificate & late submission of interim payment application are non-common conflicts for four cases. As per the **CN2&CR2,** in the re-measurement contract, all works had measured according to

actual work done & rules to be maintained according to the standing guideline. This statement revealed that more time frame has occurred in this situation. Both parties used common conflict-handling styles are integrating and compromising. As a result, the party did not manage their intention. The Parties tried to resolve the issues of the conflict highest satisfaction of both parties.

Financial issues of final value are a common very important conflict situation identified by interviewers in a re-measurement contract. According to the **CN2,** the client's requirement, the consultant had changed some initial designs and introduced variations due to raising more additional amounts in the final value. As per the **CR1**, Therefore, variations are frequently high in the re-measurement contract due to design changes omission of quantities, involving more stakeholders, and client & consultant changes. Therefore, cannot predict the final value. In the meeting with both parties were managed the variation used common integrating and compromising styles by gaining maximum satisfaction according to a situation. Obliging style is unique to a consultant to manage variation due to protect professional way to achieve the conflict.

Unprofessional behavior is an important situation in the re-measurement project. Both parties' all stakeholders were identified above conflict occurred according to different professional levels. They used common methods in negotiation. Compromising, inaction & integrating styles are best to handle these conflicts in the findings. The obliging style is unique to consultants for handling these conflicts.

The most important common conflicts are poor communication, different attitude, late submission of documents, supervision, and coordination in re-measurement contracts**.** According to **CN2**, mainly issues between the contractor and subcontractor have occurred resource handling issues & payment issues. The main contractor had not distributed an equal portion of their subordinates. Therefore, the subcontractor did not like to work with the main contractor. Then they demanded the work with the owner and stopped the work. Therefore, occurred disagreement with consultant & contractor parties. According to **CR2,** parties could not attend full intention because maintain the professional relationship, according to a situation, they are used common

compromising, integrating styles able to manage the conflict. Problem-solving, collaborating, avoiding, obliging, dominating, and yielding, styles are unique to the consultant.

The non - common relationship conflicts are design changes, difficulties incoordination, and lack of contact management. According to **CN1** & **CR2,** some design parts and contract management parts are to be handled by separate parties. Parties had poor communication & negligence that occurred above conflicts. Therefore, integrating & avoiding common styles are used to resolve these conflicts. Dominating, integrating, and collaborating styles are unique to the consultant and the compromising style is unique to the contractor.

The requirement of more consultant teams is a very important conflict identified by interviewers**.** According to **CN2**, the consultants' party had a lot of work within the limited period. According to **CR1,** the requirement of more consultant teams is very necessary to re-measurement the contract. Because parties had more work such as consultant- contractor work, to get measurement according to the site, repairing planning and scheduling, checked quality, materials approval, etc. They said we have huge work within the limited period. without teams created more conflicts, Therefore, work is delayed. Therefore, they used common compromising & integrating styles to manage conflict due to maximum satisfaction according to the situation. The obliging style is unique to the consultant & avoiding style unique to the contractor.

Both parties identified a common important conflict situation as poor documentation. According to **CN1 & CR1** regarding the above identification conflict for pricing of BOQ items. Therefore, the rate problem will have occurred in a post-contract stage. As per the **CR4** Poor documentation has occurred with more documentation conflicts. Regarding the above identification for price fluctuation in re-measurement contract, type of currency, duty-free materials, low tile quantity mentioned in BOQ. Both parties did not attain more intention in the correct period. They used common styles are compromising integrating & avoiding. Obliging,problem-solving, and collaboration styles are unique to the consultant.

The commonly seen parties identified common conflict is contradictions of documents in a re-measurement contract. According to **CN4,** regarding the above identification conflict BOQ item for 112 mm thick. brick wall in the BOQ and 225mm thick. in a drawing. As per the **CR2,** regarding the above identification conflict for the percentage of liquidated damages. This conflict happened due to the contradiction between the agreement and the initial issued condition of the contract. Both parties signed documents as agreed document and the priority list in the condition of a contract. Both parties were commonly used to avoiding, collaborating, integrating, and compromising styles managed absence of contact management knowledge about the situation. Problem-solving and obliging styles are unique to the consultant.

Negligence is the non-common conflict situation in the four cases. According to **CN1,** the initial design had to gain more changes due to negligence. According to **CR3,** regarding the lower quantity mentioned in BOQ. Lower tile quantity than the usage quantity. Further to **CR3**, this conflict frequently occurred harmful disagreements to the stakeholders in both parties. The stakeholders attended the meetings, most of the conflict situations were created in negligence, not sensible person issues. as per the findings, stakeholders commonly used the conflict-handling styles that are dominating, integrating, and avoiding. Collaboration style unique to consultant and solution–orientation style unique to a contractor.

Designs are not finalized is a non-common conflict situation for both parties. As per the **CR3,** regarding the above identification conflict in the laying of tiles on lobby area and laying of conduit on first-floor slab, by the starting above works designs are not finalized. **CN5,** duty in the consultant team due to huge work lord will be barricaded to our responsibilities. Both parties had used common collaborating and integrating styles to gain maximum satisfaction of both parties & maintain a good relationship.

According to **CR4,** a lot of works was carried out finishing stage to achieve the target, but the tiles sample was still not approved. As per the **CN1,** delay in material approval is a duty in the consultant team due to huge work lord will be barricaded to our responsibilities. They used common integrating and compromising styles to protect

professional relationships made for future success and manage the issues as per the satisfaction

The most common important conflict situation is the lack of clarity of documents. In the re-measurement contract, design error is one of clarity of document and frequent conflict situation in post-contract stage. According to **CN1 & CR1,** a lot of design errors occurred many disturbances due to increased target budget, getting many approvals, etc. They used common compromising & integrating styles. Dominating & avoiding styles are unique to the consultant.

The important conflict issues for the incompleted documents**.** According to **CR5** as the situation for projects. Most MEP works such as electrical, mechanical & plumbing works layout of the ceiling still not completed. **CN1** agreed that duty in the consultant team due to huge work lord will be barricaded to our responsibilities They used common compromising & integrating style to protect professional relationships made for future success and manage the issues as per the satisfaction. Dominating, avoiding & obliging are unique to the consultants.

The non-common conflict situation is underestimating real cost in four cases. As per the **CR5,** In the tender stage, some rates are underpriced due to lack of specification & drawing. According to **CN1,** regarding underpriced elevators in the initial stage, you had to clarify, both parties had mistaken". According to **CN1,** So many times had the meeting to control the issues created under variation. They used common integrating, problem-solving & compromising styles.

The common important conflict situation is the late submission of documents. As per **CN1** most of the submissions had been late. They used more integrating style better than compromising and obliging styles because protecting professional relationships made for future success and managing the issues as per the satisfaction. As per the **CR1,** the consultant, variation order documents were never submitted in the correct period. Further to **CR1**, a professional used common compromising & dominating styles. Integrating, obliging, and avoiding styles unique to the consultants.

Late approval of rate is the most important common conflict situation in four cases. According to **CR2,** the project is to be completed given time but rates are still not finalized. Integrating style is more used than to compromising and problem-solving have to protect professional relationships to future goals. **CN2** agreed, this responsibility is ours. due to the huge work lord within the limited time. They used common integrating, compromising styles. Obliging style is unique to the consultant.

Design errors and poor coordination are non-common situations in four cases. According to **CN1,** regarding the above identification conflicts, BOQ item thickness for the screed concrete, and as per the **CR1**, there is a conflict regarding the above identification conflict with the laying thickness of the ground-floor concrete. **CN1** mention that duty in the consultant team due to huge work lord will be barricaded to our responsibilities. They used common compromising, collaborating, integrating, & avoiding. Obliging styles are unique to consultants & avoiding collaborating styles is unique to the contractor.

Late submission of approval is a non-common situation in four projects. As per the **CN1, CR1,** in the re-measurement contract, more variations are there. Therefore, rates approval is to be delayed. They used a common obliging style. Solution-orientation, integrating styles are unique to the consultant. Compromising & avoiding styles are unique to the contractor.

The important situation for the approved unavailability of resources. According to **CN2,** some materials are approved by the architect but not available in the market in this period. As per the CR2**,** actually, approved unavailability of resources is the very critical case of all four projects. According to **CR2,** parties could not attend full intention because maintain the professional relationship, according to a situation; they are used common compromising, integrating styles able to manage the conflict.

Requirements of parties are a common important conflict situation in four projects. According to **CN2,** regarding the above identification conflicts, material clearance from custom & early completion of the first floor. However, parties had full attention

requirements between parties. As per the **CR2,** They used obliging and compromising for common styles. The integrating style is unique to the contractor.

Incorrect record-keeping is another non-common conflict situation in four projects. According to **CN2**, regarding the identified conflicts, consultants had the responsibility to issue correct drawings to a contractor. The contractor has to keep the correct place. incorrect record-keeping created an argument between both parties. According to, **CR1** incorrect record keeping due to occurred delayed the work, further, the most effective conflict handling style in the Sri Lanka construction industry uses common dominating and control styles. Integrating style is unique to the consultant.

The most important common conflict situation is poor communication**.** As per the **CN1**, Poor communication is one of the reasons for poor quality in workmanship. The poor quality of an occurred final product does not increase the value of the product. According to **CR6,** both consultant & client did a lot of major changes due to poor communication. Parties could not attend full intention because maintain the professional relationship, according to a situation, they are used common compromising and integrating styles. Collaborating style is unique to the consultant.

Delay instruction & delay work is the most important common conflict situation in four cases. **CN1** revealed that delayed work had gained more conflicts. Liquidated damages in the one of condition due to prevent the delay. Both parties had used common integrating & compromising styles.

CR1, Delay instruction more often created delayed work. If delayed the work, the contractor needs extended preliminaries cost. Further to him, the compromising and integrating system is used as the common effective conflict handling style to manage according to the situation.

Difficulties in controlling and reporting is a non-common conflict situation in four cases. According to **CN1,** in the re-measurement contract more stakeholders have involved all activities. Therefore, the consultant party had done controlling and

reporting within the contract. As per the **CR4,** the contractor had controlled within the construction program. They mentioned that integrating and compromising are more common effective conflict-handling methods maximum the satisfaction of both parties according to the situation.

As table 4.4 disclosed every project has many conflicts handling styles plus a different management system. The stakeholders who participate in meetings open that conflict-handling style. In the research findings, in the Sri Lankan re- measurement construction industry, five styles are commonly used for handling conflicts. They are obliging, integrating, compromising, dominating, and avoiding. This is in line with the findings of Lee (2008), dual concern theory is the method both teams willingly perform in a conflict situation and are able to manage the issues.

4.5.5 Investigate the different styles of conflict-handling styles used by consultants for the above-identified conflicts

When implementing the conflict-handling styles for the re-measurement construction industry several conflicts occurred in that time. The above conflicts provide a positive word for the usage of conflict handling styles in the construction industry. Those listed conflict-handling styles are found in literature reviews are generic to the use of conflicts. In this case, to implement that conflict handling style in those situations' The consultants should manage conflicts with relevant solutions. In the literature review sixteen (16) handling styles are identified when using conflicts. Furthermore, during the interview eleven (11) conflict-handling styles are used by the consultants' party. These are compromising, integrating, dominating, avoiding, obliging, problem-solving, inaction, control, collaborating, yielding, and solution-orientation. The five (5) styles are not practiced in the four cases. These are withdrawal, non-confrontation, accommodating, competing, and contending. Conflict handling styles for use of conflicts in a re-measurement industry which are given in bold letters are identified by the consultant parties in the interviews. Therefore, common conflict handling styles in the re-measurement industry these conflicts should be managed with proper solutions. In the interview construction professionals have provided different styles about the

relevant solution with the conflicts. In the findings, nine (9) styles are unique in the consultant party. These conflict-handling styles are control, dominating, obliging, problem-solving, avoiding, collaborating, yielding, integrating, and solution-orientation. The common nine (9) conflict-handling styles are integrating compromising, avoiding, obliging, dominating, control, collaboration, inaction, and problem-solving.

4.5.6 Investigate the different styles of conflict-handling styles used by contractors for the above-identified conflicts

The contractor should be managed conflicts with relevant solutions. In the literature review sixteen (16) handling styles are identified when using conflicts. Furthermore, during the interview ten (10) conflict-handling styles are used by the contractors' party. These are compromising, integrating, dominating, avoiding, obliging, problem-solving, inaction, control, collaborating, and solution-orientation. The six (6) styles are not practiced in the four cases. These are withdrawal, non-confrontation, accommodating, competing, yielding, and contending. Conflict handling styles for use of conflicts in a re-measurement industry which are given in bold letters are identified by the contactors parties in the interviews. Therefore, common conflict handling styles in the re-measurement industry these conflicts should be managed with ideal solutions. In the interview series construction professionals have provided different styles about the relevant solution with the conflicts. In the findings, seven (7) conflict-handling styles are unique in the contractor party. These conflict-handling styles are control, compromising, collaborating, integrating, avoiding, problem-solving and solution-orientation. The common nine (9) conflict-management styles are integrating compromising, avoiding, obliging, dominating, control, collaboration, inaction, and problem-solving.

4.6 Summary

The chapter illustrates the analysis of collected data from the semi-structured interviews, which are analysed via manual content analysis. The topics are structured according to the objectives achieved in each question in the interview. That analysis

contends opinion of conflict handling styles usage in the construction conflicts with several steps. Findings from the interviews were comparatively elaborated in relation to the findings from literature via pattern matching. At the end of the analysis collected solutions in conflict manageable ways. The final chapter of the report has been used to conclude the results obtained over the study and to illustrate the recommendations recognized. In the final chapter, the results of the study were concluded, and recommendations were identified. The study will be finally concluded thereafter.

CHAPTER 05
CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This fifth and concluding chapter comprises the conclusion made by final outcomes which fulfill the research gap. This chapter provides a comprehensive conclusion to each and every objective that had been examined in the study. Furthermore, includes the general conclusion which adds more facts to the objectives. The latter part of the chapter discusses the limitation of the research. In the end, it has identified the areas that can be used to conduct any further studies.

5.2 Overview of Objectives Achieved in the study

Under each objective stated in subsection 1.3, captioned as objectives, has illustrated the research findings that have concluded, and the methodology followed to conduct the study.

Objective 1 – Review the concepts of conflicts, conflict handling, and conflict styles

Objective 1 of the study, identification of the concept of conflicts & conflict-handling styles was achieved solely through the literature review. Researchers have identified the different classifications of conflicts that are acceptable to the construction industry. These classifications are based on the outcome of the conflict. These classifications are the consistency of the issue, disagreement of the same group, individuals and group, and uniformity of the teams. The classifications discussed four categories according to the situation. These conflicts and conflict handling styles are identified in chapter 2, Literature review. Thirty-nine (39) conflicts and sixteen (16) conflict-handling styles have been identified from the literature. First, the information regarding the conflict-handling styles and their necessity for better project delivery and facts have been collected. To approach the implementation of conflict handling styles in re-measurement in construction projects, it is significant that the Sri Lankan

conflict-handling styles are well identified and studied adequately to filter the best to re-measurement construction industry.

Objective 2 – Identify different types of conflicts faced by consultants and contractors in re-measurement contracts during the post-contract stage

The second objective of the research was a cumulative process fulfilled through literature review and semi-structured interviews. In the post-contract stage of re-measurement contracts, conflicts exist in two groups as faced by the consultant and faced by the contractor.

Further to the interface between consultants and contractors, all forty-three (43) conflicts occur in different frequencies during the post-contract stage in re-measurement contract projects. All these conflicts are categorized according to outcomes. In the findings, four (4) conflicts are identified by interviewers other thirty-nine (39) were found in a literature review among forty-three (43) conflicts. All interviewers were not responded to both parties' non-common conflicts fifteen (15), all interviewees were responded to both parties' common conflicts twenty-two (22), Two (2) conflicts only consultants were identified conflicts and four (4)conflicts only contractors have identified conflicts among those forty-three (43) conflicts. Interviewers have identified new conflicts as financial issues of the final value under payment-related conflicts, a requirement of more consultant teams under relationship conflicts, late approval of rates under documentation conflicts, and difficulties in controlling & reporting under work-related conflicts. The consultant party identified thirty-nine (39) conflicts in consultant responses in the interviews. The contractor party identified forty-one (41) conflicts in contactor responses in the interviews.

Objective 3 – Investigate the different styles of conflict-handling styles used by consultants for the above-identified conflicts

This third objective of the research was a cumulative process fulfilled through literature review and semi-structured interviews. To handle payment conflicts, relationship conflicts, documentation conflicts, and work-related conflicts with

consultants the experts engaged in the post-contract stage in re-measurement contract used all eleven (11) conflict-handling styles. In the findings, nine (9) conflict-handling styles are unique in the consultant party. These conflict-handling styles are control, dominating, obliging, problem-solving, avoiding, collaborating, yielding, integrating, and solution-orientation. The nine (9) common conflict-management styles are integrating compromising, avoiding, obliging, dominating, control, collaboration, inaction, and problem-solving.

Objective 4 – Investigate the different styles of conflict-handling styles used by contractors for the above-identified conflicts

This objective of the research was a cumulative process fulfilled through literature review and semi-structured interviews. To handle payment conflicts, relationship conflicts, documentation conflicts, and work-related conflicts with contractors, the experts engaged in the post-contract stage in re-measurement contract used all ten (10) conflict-handling styles. In the findings, seven (7) conflict-handling styles are unique in the contractor party. These conflict-handling styles are control, compromising, collaborating, integrating, avoiding, problem-solving and solution-orientation. The nine (9) common conflict-management styles are integrating compromising, avoiding, obliging, dominating, control, collaboration, inaction, and problem-solving.

5.3 Recommendations

Recommendation focusses on successful conflict-handling styles between consultants and contractors in the post-contract stage of the re-measurement contract industry.

Purpose and the use of conflict-handling styles with conflicts - Having different ways to deal with conflicts handling styles conflicts, it is needed to identify and propose the most successful method. The analysis of conflict handling styles compared to the conflict and the focused consultants and contractors during the post-contract stage in a re-measurement contract may assist the expertise to assess each conflict-handling style and use of on different occasions.

Improving contractual advancement – To implement and get the benefits from conflict handling a necessary contractual background is needed for both the implantation and operation both.

Implementation regulations – With the implementation of conflict handling, it is needed to prepare and implement proper regulations. From that, it covers up the legal background to the doubtless construction process with conflict-handling styles.

Implementation research and development – Depth investigation is required for further enhancement of the implementation of conflict handling styles to identify the valuable outcome.

5.4 Limitations of the Research

Even though conflict-handling styles are in practice, the number of projects rendered through these styles is minimal. Lack of awareness of industry expertise on the concept limits the number of participants in the study. Furthermore, with the COVID-19 pandemic situation, there were many difficulties in contracting potential participants for the study. Moreover, the study was limited to the overall perspective of 12 professionals.

5.5 Further Research Area

The research advanced within the construction opens for further research. There are many research areas. The following research area is recommended for further research with suitable modifications.

- Investigation of success factors of conflict handling styles during pre-contract stages in the re-measurement contract.
- Investigation of impact of conflict-handling styles used by consultants and contractors in the re-measurement contract.
- Investigation of conflict handling styles faced by consultants and contractors in the Design and Build contracts.

REFERENCES

Acharya, N.K., Lee, Y.D., &Im, H.M. (2006). Conflicting factors in construction projects: Korean perspective. *Engineering, Construction and Architectural Management, 13*(6), 543- 566. doi: 10.1108/09699980610712364

Adnan, H., Shamsuddin, S.M., Supardi, A., & Ahmad, A. (2011). Conflict prevention in partnering projects. In Proceedings of the Asia Pacific *International Conference on Environment-Behaviour Studies* 2011, (pp. 772 - 781). Retrieved from http://www. sciencedirect.com 5

Agwu, M. O. (2013). Conflict management and employees' performance in Julius berger Nigeria*PLC*. Bonny Island. *International Journal of Academic Research in Management (IJARM)* 2(16):pp. 125-139.

Akhtar, I. (2016). Research Design. SSRN Publication. doi:https://dx.doi.org/10.2139/ssrn.2862445

Akiner, I. (2014). Critical Viewpoints on the Management of Conflict in Multi-National Construction Projects. Organization, Technology and *Management in Construction – An International Journal*, 6(2), 1038–1046. doi:10.5592/otmcj.2014.2.6

Al-Sibaie, E., Mohammed Alashwal, A., Abdul-Rahman, H. and Kalsum Zolkafli, U. (2014), "Determining the relationship between conflict factors and performance of international construction projects", *Engineering, Construction and Architectural Management*Vol.21Nopp. 369-382.

Apuke, O. (2017). Quantitative Resarch methods a synopsis appraoch. Arabian *Journal of Business and Management* Review (Kuwait Chapter), 6(10), 40-47.

Arditi, D., & Thaveeporn, P. (2010). Predicting the Outcome of Construction Litigation Using an Integrated Artificial Intelligence Model. *Journal of Computing in Civil Engineering*, 73-80.

Awakul, P., & Ogunlana, S. (2002). The effect of attitudinal differences on interface conflict on large construction projects the case of the Pak Mun Dam project. *Environmental Impact Assessment* Review, 22, 311 –335.

Balogun, O., & Ansary, N. (2017). Sources of Conflicts in a Construction Projects: A perspective of South Africa Construction Industry. *Sixth International Conference on Advances in Civil, Structural and Environmental Engineering*.

Bao, L. (2014). How Four Typesof Intragroup Conflicts Shape the Role of Group Diversity on Group Outcomes. Cleveland : *Department of Organizational Behavior*, *Weatherhead School of Management*, Case Western Reserve University

Bendersky, C., & Hays, N. (2012). Status conflict in groups. *Organization Science*, 23(2), 323-340.

Blake, R., & Mouton, J. (1964). The managerial grid. Houston TX : Gulf.

BorvonIsrangkura Na Ayudhya (2011). Common disputes related to public work projects in Thailand. Songkianakarin *journal of science and technology*. 35(5), 565-573

Brockman, J. L. (2013) Interpersonal Conflict in construction: Cost, cause, and consequence. *Journal of Construction Engineering and Management*, 1-12. doi:10.1061/(ASCE.CO. 1943-7862.0000805.

Brown, H., & Marriott, A. (1993). *ADR Principles and Practice*. London: Sweet & Maxwell.

Cakmak, E. and Cakmak, P.I. (2014), "An analysis of causes of disputes in the construction industryusing analytical network process", *Procedia-Social and Behavioral Sciences*, Vol. 109, pp. 183-187.

Carmicheal, D.G.(2002). *Disputes and International projects*, A. A. Balkema, Liise.

Charkhakan, M., & Heravi, G. (2019). Evaluating the preventability of conflicts arising from change occurrence in construction projects. *Engineering,*

Construction and Architectural Management, 26(8), 1777-1800. doi:10.1108/ECAM-09-2018-0361

Chen, Y.Q., Zhang, Y.B., & Zhang, S.J. (2014). Impacts of different types of owner-contractor conflict on cost performance in construction projects. *Journal of Construction Engineering and Management,* 140(6). doi: 10.1061/(ASCE)CO.1943-7862.0000852

Cheung, C.C., & Chuah, K.B. (2006). Conflict management styles in Hong Kong industries. *International Journal of Project Management*, 17(6), 393-399.

Cheung Essex, J. R. (1996). Means of avoiding and resolving disputes during construction. *Elsevierscience Ltd: Tunneling and underground space technology, 11*(1), 27-31

Chou, H.W., & Yeh, Y.J. (2007). Conflict, conflict management and Performance in ERP teams. *Social Behavior and Personality*, 35(8), 1035-1048.

Civil Engineering (2016), Procedure 7th Edition, published by the Institution of Civil Engineers in Sri Lanka *suggests that remeasurement* (or occasionally re-measurement)

Creswell, J. (2014). *Research Design*. (4, Ed.) California 91320: SAGE Publications

Creswell, J. W. (2014). *Research Design – Quantitative, Qualitative and Mixed Methods Approach* (4 ed.). United States: SAGE Publications. Retrieved from https://goo.gl /snGFMQ

Curseu, P.L. (2011), "Intra-group conflict and teamwork quality: the moderating role of leadership styles", *AdministrativeSciences,*Vol.1No.1,pp.3-13.

De Dreu, C.K.W., &Vianen, A.E.M. (2001). Managing relationship conflict and the effectiveness of organizational teams. *Journal of Organizational Behavior*, 22, 309-328. doi: 10.1002/job71

DeChurch, L.A., Hamilton, K.L., & Haas, C. (2007). Effects of conflict management strategies on perceptions of intragroup conflict. *Group Dynamics: Theory, Research, and Practice*, 11(1), 66-78. doi: 10.1037/1089-2699.11.1.66

DeDreu,C.K.W.,Evers,A.,Beersma,B.,Kluwer,E.S.andNauta,A.(2001),"Atheory-sedmeasure of conflict management strategies in the workplace", *Journal of Organizational Behavior*, Vol. 22 No.6,pp.645-668,doi:10.1002/job.107.

Desivilya, H.S., Somech, A., &Lidgoster, H. (2010). Innovation and conflict management in work teams: The effects of team identification and task and relationship conflict. *Negotiation and Conflict Management Research*, 3(1), 28-48.

Doloi, H. (2013). "Empirical Analysis of Traditional contracting and relationship agreements for procuring partners in construction projects." J. of Manage in Engineering, 29(3), 224-235. Dickey T. 2015. *Integrating unions in integrated conflict management systems. Conflict Resolution*. 33(1):45–66.

Elliott, L. (2019, January 3rd). *Construction Conflicts*. Retrieved from Oval Options:http://ovaloptions.com/business-mediation-options/constructionmediation/ conflict-in-construction/

Farlex Inc. (2015). *Valuation.* Retrieved 25th September, 2015, from http://financialdictionary.thefreedictionary.com/Valuation

Femi, O.T. (2014). Causes and Effects of Conflict in the Nigerian Construction Industry. International *Journal of Technology Enhancements and Emerging Engineering Research*, 2(6), 7-16.

Fenn, P., Lowe, D., & Speck, C. (1997). Conflict and dispute in construction. *Construction Management and Economics*, 15, 513-518.

FIDIC; (2006). *Federation Internationale des Ingenieurs-Cons.* Conditions of contract for construction for buildings and engineering works.

FIDIC; Lausanne, (1993). Federation Internationale des Ingenieurs-*Cons. Conditions of contract for construction for buildings and engineering works.*

Fisher, R.J. (2000). *Sources of Conflict and Methods of Conflict Resolution*. Retrieved from http://www.ulstergaa.ie/wp-content/uploads/coaching/team-management-2012/unit-3/sources-of-conflict-and-methods-of-resolution.pdf

Flanagan, T.A., & Runde, C.E. Hidden potential embracing conflict can pay off for teams. 28(2), (2008).

Flick, U. (2013). *The SAGE Handbook of Qualitative Data Analysis.* SAGE publication. Retrievedfrom https://www.ewi-psy.fu-berlin.de/ einrichtungen/arbeitsbereiche/qualitative_sozial-_bildungsforschung/ Medien/ 58869_Flick__The_SAGE_HB_of_Qualitative_Data_Analysis_Chapter1_mapping-the-field.pdf

Follet, M. (2019, February 18). *Dispute Resolution.* Retrieved from http://www.angelfire.com/mo3/acotrel/labourman/conflict.htm

Gad, G. and Shane, J. (2013) "Dispute Resolution Methods in International Construction Contracts: *A Survey of International Contractor's Perspective of Trust*." 4th Const. Specialty Conf. Canadian Society of Civil Engineers.

Gardner,T.M., Wright,P.M. and Moynihan,L.M. (2011), "The impact of motivation, empowerment, and skill-enhancing practices on aggregate voluntary turnover: *the mediating effect of collective affective commitment"*, Personnel Psychology, Vol.64 No.2, pp.315-350.

Gebrehiwet, T. and Luo, H., 2017. Analysis of delay impact on construction project based on RII and correlation coefficient: Empirical study. *Procedia Engineering*, *196*, pp.366-374.

Gorse, C. (2003). Conflict and conflict management in construction. Annual ARCOM Conference, 1, 173-182.

Gould, N. (2012). *Conflict avoidance and dispute resolution*. Retrieved 30 July, 2013, from http://www.fenwickelliott.com/files/nick_gould_conflict_avoidance_and_dispute_resolution.indd_.pdf.

Government of Malaysia (2012). *Construction Industry Payment and Adjudication Act 2012*. Attorney-General Chambers. Kuala Lumpur, Percetakan Nasional Malaysia Berhad

Gruenfeld, D.H., Inesi, M.E., Magee, J.C. and Galinsky, A.D. (2008), "Power and the objectification of social targets", *Journal of Personality and Social Psychology*, Vol. 95 No. 1, pp. 111-127, doi: 10.1037/0022-3514.95.1.111.

Guangdong, W., ZhaoJian , X., & Zuo, Z. (2017). Effects of Inter-organizational Conflicts on Construction Project Added Value in China. *International Journal of Conflict Management*, 28(5), 695-723. doi: DOI: 10.1108/IJCMA-03-20170025

Guangdong, W., ZhaoJian , X., & Zuo, Z. (2017). Effects of Inter-organizational Conflicts on Construction Project Added Value in China. *International Journal of Conflict Management*, 28(5), 695-723. doi: DOI: 10.1108/IJCMA-03-20170025

Gunarathna M.A.C.L. & Fernando, N.G. (2014). Stakeholders' Preference towards the Use of Conflict Management Styles in Dual Concern Theory in Post Contract Stage. *In proceedings of International Conference on Construction in a Changing World* 2014, 4-7 May 2014. School of the Built Environment, University of Salford, UK.

Gunarathna, C., Yang, R., & Fernando, N. (2018). Conflict and management styles in the Sri Lankan commercial building sector. *Engineering, Construction and Architectural Management, 25*(2), 178-201.

Guo, H., Zhang, L., Huo, X., & Xi, G. (2019). When and how cognitive conflict benefits cross-functional project team innovation. *International Journal of Conflict Management*, 30(4), 514-537. doi:10.1108/IJCMA-02-2019-0031

Hall, J, M.(2002), Ineffective Communication : Common Cause of Construction Disputes, Alliance'sAdvisory Council Legal Notes. 13

Hammarberg, K., Kirkman, M., & de Lacey, S. (2016). Qualitative research methods: when to use them and how to judge them. *Human Reproduction Invited Commentary , 31*(3), 498–501. doi:10.1093/humrep/dev334

Heenkenda, H.M.N.S.B. & Chandanie, H. (2012). Minimizing Conflicts in Building Construction through Proper Procurement Arrangements. In *proceedings of 9th* 27*International Conference on Business Management 2012, 28 February-1March 2013.* Faculty of Management Studies and Commerce, University of Sri Jayewardenepura, Sri Lanka, 124-141.

Hoegl, M. and Gemuenden, H.G. (2001), "*Teamwork quality and the success of innovative projects: a theoretical concept and empirical evidence*", Organization Science, Vol.12, pp.435-449.

Howe, M. (2013, May). *UK construction slump heightens conflict*. Retrieved from http://designbuildsource.com.au/uk-construction-slump-heightens-conflict

Huan, L.J., & Yazdanifard, R. (2012). The difference of conflict management styles and conflict resolution in workplace. *Business & Entrepreneurship Journal, 1*(1). 141-155.

Huan, L.J., &Yazdanifard, R. (2012). The difference of conflict management styles and conflict resolution in workplace. *Business & Entrepreneurship Journal*, 1(1). 141-155. 28

Hussein, A., Al-Mamary, Y., & Hassan, Y. (2017, July). The Relationship Between Conflict Management Styles and Organizational Commitment: *A Case of Sana'a University*. *American Journal of Science and Technology*, 4(4), 49-66.

Irfaan, M., Thaheem, M., Gabriel, H., Malik, M., & Nasir, A. (2019). Effect of stakeholder's conflicts on project constraints: a tale of the construction industry. Engineering, Construction and Architectural Management, 30(4), 538-565. doi:doi.org/10.1108/IJCMA-04-2019-0074

Jaffar, N., Abdul Tharim, A.H. and Shuib, M.N. (2011), "Factors of conflict in construction industry: a literature review", Procedia Engineering, Vol. 20, pp. 193-202.JCT. (n.d.). Traditional/ Conventional. Retrieved 11th October, 2015, from http://www.jctltd.co.uk/ traditional-procurement.aspx

Jansen, H. (2010). The logic of qualitative survey research and its position in the field of social research methods. *Qualitative Social Research, 11,* pp. 1-21.

doi:http://www.qualitative-research.net/Forum Qualitative Sozialforschung / Forum: Qualitative Social Research (ISSN 1438-5627)

JCT. (n.d.). Traditional/ Conventional. Retrieved 11th October 2015, from http://www.jctltd.co.uk/traditional-procurement.aspx

Jehn, K. (1997). A Qualitative Analysis of Conflict Types and Dimensions in Organizational Groups. *Administrative Science Quarterly*, 42(3), 530-557. Retrieved March 29, 2020, from https://www.jstor.org/stable/2393737

Jehn, K. (2005). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly*, 256-282.

Jehn, K.A., & Chatman, J.A. (2000). The influence of proportional and perceptual conflict composition on team performance. *The International Journal of Conflict Management*, 11(1), 56-73.

Jelodar, M., Yiu, T., & Wilkinson, S. (2013). Sources of conflict and dispute as impediments to sustainability of construction relationships. *38th Annual Conference of the Australasian Universities Building Educators Association* (AUBEA). Auckland, New Zealand.

Johannesson, P., & Perjons, E. (2014). Research Strategies and Methods. An Introduction to Design Science. In *An Introduction to Design Science* (pp. 39–73). doi:10.1007/978-3-319-10632-8_3

Johari, A., Morni, A., Bohari, D., & Sahari, S. (2013). *Conflicting Environment at Workplace:. Social and Behavioral Sciences,* 101, 554 – 563.

K. Kim, "Distributed coordination of project schedule changes: An agent-based compensatory negotiation approach," *CIFE Technical Report* 130, Stanford University, December, 2001

Karthieyan, R., & Manikandan, T. (2017). A STUDY ON CAUSES AND EFFECTS OF CONFLICTS IN INDIAN CONSTRUCTION PROJECTS. *International Research Journal of Engineering and Technology* (IRJET), 4(3), 1153-1170.

Kathleen, M. J. H. (2003). Conflicts between Owner and Contractors : Proposed Intervention Process. *Journal of Management in Engineering*, ASCE (July 2003),121-124.

Khahno, S.H. and ALI, T.H. (2014). Causes leading to conflicts in Construction projects A. viewpoint of Pakistan Construction Industry. International Conference on Challenges in I.T, Engineering and Technology, July 17-18, 2014, Ptriviket, Thailand.

Khanaki, H., &Hassanzade, N. (2010). Conflict Management Styles: The Iranian General Preference Compared to the Swedish. *International Journal of Innovation, Management and Technology*, 419-426.

Kiernan, L., Ledwith, A., & Lynch, R. (2020). Design teams management of conflict in reaching consensus. *International Journal of Conflict Management*, 31(2), 263-285.

Kierszniowska, S., & Seiwert, B. (2009). *Definition of "Remeasurement*." http://doi.org/ 10.1074/ mcp.M800346-MCP200

Kissiedu, A.(2009), The Development ofAppropriateStrategiesfor The Prevention of Construction Disputes In Ghana, Master ofthesesKwane Nkrumah University OfSciencesAnd Technology, Ghana.

Kteily,N., Saguy,T., Sidanius,J. and Taylor,D.M. (2013), Negotiating power: agenda ordering and the willingness to negotiate in asymmetric intergroup conflicts", *Journal of Personality and Social Psychology*, Vol.105 No.6, pp.978-995, doi:10.1037/a0034095.

Kumar, R. (2011). *Research Methodology- a step-by-step guide for beginners* (3 ed.). New Delhi: SAGE Publication. Retrieved 05 30, 2020, from http://www.sociology. kpi.ua/wp-content/uploads/2014/06/*Ranjit_Kumar-Research_Methodology*_A_Step-by-Step_G.pdf

Lee, K.L. (2008). *An Examination between the Relationships of Conflict Management*

Lee KL. 2011. Examination between the relationships of *conflict management styles and employees' satisfaction*. Int J Bus Manag. 3(9):11–25

Leung, M., Liu, A.M.M., & Ng, S.T. (2005). Is there a relationship between construction conflicts and participants' satisfaction?. Engineering, *Construction and Architectural Management,* 12(2), 149-167. doi: 10.1108/09699980510584494

Lewicki, R. J., Saunders, D. M., & Minton, J. W. (2001). *Essentials of Negotiations.* New York: Mc Graw-Hill Higher Education.

Loosemore, M, Nguyen, B.T. and Denis, N. (2000) An investigation into the merits of encouraging conflict in the construction industry. *Construction Management and Economics*, 18, 447-456.

Lu, L., Zhou, F. and Leung, K. (2011). 'Effects of task and relationship conflicts on individual work behaviours', *International Journal of Conflict Management*, Vol. 22 (2), pp. 131-150.

Lu, W., & Wang, J. (2017). The influence of conflict management styles on relationship quality: The moderating effect of the level of task conflict. *International Journal of Project Management*, 35, 1483–1494.

Lyubovnikova, J., Legood, A., Turner, N. and Mamakouka, A. (2017), "How authentic leadership influences team performance: the mediating role of team reflexivity", *Journal of Business Ethics*, Vol.141 No.1, pp.59-70.

Madalina, O. (2016). Conflict Management, a new challenge. 3rd GLOBAL CONFERENCE on BUSINESS, ECONOMICS, MANAGEMENT and TOURISM. 39, pp. 807 – 814. Rome, Italy: *Procedia Economics and Finance*. doi:10.1016/S2212-5671(16)30255-6

Maiti, S., & Choi, J. (2018). Investigation and implementation of conflict management strategies to minimize conflicts in the construction industry. *International Journal of Construction Management,* 2331-2327. doi:DOI 0.1080/15623599.2018.1536964

Maiti, S., & Choi, J. (2021). Investigation and implementation of conflict management strategies to minimize conflicts in the construction industry. *International Journal of Construction Management,* 21(4), 337–352. Retrieved from https://www. tandfonline.com/doi/full/10.1080/15623599.2018.1536964

Marsh, P. D. V. (2001), "Contract Negotiation Handbook", England. Goiter, 3'd ed.

Mattwan. (2011). Re-Measurement Contract. Retrieved 11th October, 2015, from http://www.constructiondb.com/wiki/re_*measurement_contract*

Medina, F. J., Munduate, L., Dorado, M. A., Martinez, I. and Guerra, J. M. (2005). 'Types of intragroup conflict and affective reactions', *Journal of Managerial Psychology, Vol. 20*, pp. 219–230. Posthuma

Mitkusa, S., &Mitkus, T. (2014). Causes of conflicts in a construction industry: *a communicational approach. Business, Management and Education conference* (pp. 777-786).

Nazarkhan Yasin,2014 *Mengenal Kontrak Konstruksi Di Indonesia*, PT. Gramedia Pustaka Utama, Jakarta.

Ng, S.T., &Skitmore, R.M. (2000). Contractors' risk in design, novate and construct contracts. International Journal of Project Management, 20, 119 - 126. Saulėtekio, Vilnius: Vilnius Gediminas technical university (VGTU), al. 11, LT-10223, Lithuania.

Ogunbayo, O. (2013). Project Managers' Conflict Management Styles and Its Impact on Project Team Motivation in Nigeria Construction Industry. *International Journal of Scientific & Engineering Research, 4*(7), 2248-2258.

Paletz, S.B., Chan, J. and Schunn, C.D. (2017), "The dynamics of micro-conflicts anduncertaintyinsuccessfulandunsuccessfuldesignteams",DesignStudies,Vol.50,pp.39-69.

Peansupap, V. and Cheang, L. (2015) identifying issues of change leading to cost conflicts: *Case study in Cambodia. Creative Conference 21-24 June 2015*, Krakon. Poland 285-290

Peansupap, V. and Tachi, S. (2013). Review of Conflict issues in Construction of public projects in Bhusten 18th *National Convention on Civil Engineering*, Chiang, Mai, Thailand:

Pertubuhan Akitek Malaysia. (2006). *PAM Contract 2006 (With Quantities)*. Kuala Lumpur: Pertubuhan Akitek Malaysia.

PMI, A Guide to the Project Management Body of Knowledge, 2nd ed, Pennsylvania: *Project Management Institute*, 2001.

Poerdiyatmono, B.(2007), The Alternative Dispute Resolution of Construction Services, *Journal of civil Engineering*, University of AtmaJaya, 8(1).

Posthuma, R. A. (2011). 'Conflict management and performance outcomes', *International Journal of Conflict Management*, Vol. 22 (2), pp. 108-110.

Putnam, L.L. (1990), "Reframing integrative and distributive bargaining: a process perspective", in Lewicki, R.J., Sheppard, B.H. and Bazerman, M.H. (Eds), *Research on Negotiation in Organizations*, JAI Series Annual, JAI, Greenwich, CT. Department of civil of Engineering, Chiang Mai University, Thailand

Rahim, M. (1985). A strategy for managing conflict in complex organizations. *Human Relation,* 38(1), 81-89.

Rahim, M., & Magner, N. (1995). Confirmatory Factor Analysis of the Styles of Handling *Interpersonal Conflict*: First-Order Factor Model and Its Invariance Across Groups. Journal of Applied Psychology, 80(1), 122-132.

Rahim, M.A. (2002). Toward a theory of managing organizational conflict. *The International Journal of Conflict Management*, 13(3), 206-235.

Rajasekar, S., Philominaathan, P., & Chinnathambi, V. (2013). *Research Methodology*. Retrieved from arxiv. org/pdf. arXiv preprint physics/0601009.

Rajasekar, S., Pitchai, P., & Veerapadran, C. (2006). Research Methodology. Retrieved from https://www.researchgate.net/publication/2174858_ Research_Methodology

Safapour, E., Kermanshachi, S., Nipa, T., & Kamalirad, S. (2019). Investigation of Conflict Impacts on Engineering, Procurement, andConstruction Schedule

Performance. *7th CSCE International Construction Specialty Conference*, (pp. 291/1-10). Laval.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students.* New York: Pearson.

Senaratne, S., &Udawatta, N. (2013). Managing intragroup conflicts in construction project teams: *case studies in Sri Lanka. Architectural Engineering and Design Management*, 9(3), 158-175. doi: 10.1080/17452007.2012.738041

Senaratne, S., Udawatta, N., & Gunasekara, D. (2013). Intragroup Conflits in the Pre Contract Stage of Construction Projects. *Australasian Universities Building Education Association. Conference (pp. 1-10). Auckland, New Zealand*: Australasian Universities Building Education Association

Shawa , B., Lello, D., &Ntiyakunze, S. (2018). Analysis of Causes of Conflicts within the Design Teams in Building Projects in Tanzania. *International Journal of Engineering Trends and Technology* (IJETT), 60(1), 1-20. doi:10.14445/22315381/IJETT-V60P201

Shin, K.-C. K. (2000). Identification of critical disputes characteristic (cdcs) during construction project operations. Georgia Institute of Technology, Georgia.

Simons, L., & Petersons, R. (2020, March 31). Task Conflict and Relationship Conflict in Top Management Teams: The Pivotal Role of Intragroup Trust Teams: *The Pivotal Role of Intragroup Tr. Retrieved from Cornell University School of Hotel Administration Cornell University School of Hotel Administration The Scholarly Commons* The Scholarly Commo: https://scholarship.sha.cornell.edu/cgi/viewcontent.cgi?article= 1723&context =articles

Simons, T.L. and Peterson, R.S. (2000), "Task conflict and relationship conflict in top management teams: the pivotal role of intragroup trust", *Journal of Applied Psychology*, Vol. 85 No. 1, pp.102-111.

Slabbert, A. (2004). Conflict management styles in traditional organisations. *The Social Science Journal* 41 , 83–92. doi:10.1016/j.soscij.2003.10.007

Smith, M. (1992). Facing up to confliction in construction. Construction Conflict Management and Resolution: Proceedings of the First *International Construction Management Conference* The University of Manchester, 26-33.

Soares, R. (2012). "Trust- The Missing Link in Construction." Int. J. of Business and Social Science, 3(23), 109-115.

Soliman, E., 2017. Communication Problems Causing Governmental Projects Delay. Kuwait Case Study. *International Journal of Construction Project Management*, *9*(1), pp.55-71

Standard Bidding Documents, *Procurement of Works*, World Bank, Washington D.C. (1995).

Suifan, T., Alhyari, S., & Sweis, R. (2019). A moderated mediation model of Intragroup conflicts. *International Journal of Conflict Management*, 31(1), 91114. Retrieved from http://dx.doi.org/10.1108/IJCMA-05-2019-0084

Suifan, T., Alhyari, S., & Sweis, R. (2019). A moderated mediation model of Intragroup conflicts. *International Journal of Conflict Management*, 31(1), 91114. Retrieved from http://dx.doi.org/10.1108/IJCMA-05-2019-0084

Susila, H. (2012). Causes of Conflict in the Implementation of Project Construction, *Journal of Engineering and Architecture*, Faculty of Engineering, University of Surakarta Tunas Development, 11(15).

Tabassi, A., Abdullah, A., & Bryde, D. (2019). Conflict Management, Team Coordination and Performance Within Multicultural Temporary Projects: *Evidence From the Construction Industry*. Project Management Journal, 50(1), 101-114.

Thalgodapitiya, D. (2010, April 3). Dispute resolution in construction industry. Daily News. Retrieved from http://www.dailynews.lk/2010/04/03/bus32.asp

The Report, Sri Lanka (2016). Construction and Real Estate. Oxford Business Group. Retrieved from http://www.oxfordbusinessgroup.com/sri-lanka-2016/ construction-realestate

Tjosvold, D. (2016). Defining conflict and making choices about its management - Lighting the dark side of organizational life. *International Journal of Conflict Management*, 17(2), 87-95. doi: 10.1108/10444060610736585

Trippe, B., & Baumoel, D. (2015). Beyond the Thomas-Kilmann Model: Into Extreme Conflict. *Negotiation Journal*, 89-103. doi: 10.1111/nejo.12084

Uchendu CC, Anijaobi-Idem F, Odigwe F. 2013. *Conflict management and organisational performance* in secondary schools in cross rivers state, Nigeria. J OrganPsycholEduc Stud. 2(2):67–71

Udawatte, N., & Senarathne, S. (2013). Managing intragroup conflicts in construction project teams: *case studies in Sri Lanka. Architectural Engineering and Design Management*, 9(3), 158-175. Retrieved from http://dx.doi.org/10.1080/ 17452007.2012.738041

Verma, V.K. (1998). *Conflict management.* Retrieved from http://www.iei.liu.se/ pie/olsson- rune/material/attkommaigang/1.309206/conflManagementVer.pdf

Walliman, N. (2010). *Research methods, the basics.* Oxon: Routledge. Retrieved from https://edisciplinas.usp.br/pluginfile.php/2317618/mod_resource/content/1/BLOCO%202_Research%20Methods%20The%20Basics.pdf

Wang Jinglong. Discussion on Project *Re-measurement in Contract Management[*J]. Shanxi Architecture, 2005(2): 136-137.

Wang, T., Wu, J., Gu, J., & Hu. L. (2021). Impact of open innovation on organizational performance in different conflict management styles: based on resource dependence theory. *International Journal of Conflict Management*, 32(2), 199222. doi:10.1108/IJCMA-09-2019-0165

Washington D.C. (1995) Standard Bidding Documents, *Procurement of Works*, World Bank,

White & Case (2020), *Maeda Corporation v Bauer Hong Kong Ltd* [2020] HKCA 158© 2020 White & Case LLP

Wild, A. (2002). The unmanageability of construction and the theoretical psycho-social dynamics of projects. Engineering, *Construction and Architectural Management*, 9(4), 345-351

Williams, E., & Joinson, A. (2020). Developing a measure of information seeking about phishing. *Journal of Cyber security*, *6*(1), 1-16. doi:10.1093/cybsec/tyaa001

Wisse,B., Rus,D., Keller,A.C. and Sleebos,E. (2019), "Fear of losing power corrupts those whowieldit: the combined effects of leader fear of losing power and competitive climate on leaderself-serving behavior", *European Journal of Work and Organizational Psychology*, *Vol. 28 No.6*, pp. 742-755, doi:10.1080/1359432X.2019.1635584.

Wu G, Liu C, Zhao X, Zuo J. 2017. Investigating the relationship *between communication-conflict interaction and project success among construction project teams.* Int J Project Manag. 35(8):1466–1482

Wu Qiuli, Wei Yanbin, Zhao Yan & Zhou Lili. Research on Application of Project Re-measurement Management System in Pipeline Project[J]. *Electronic Instrumentation Customer*s, 2013(2): 67-72.

Wu Qiuli, Wei Yanbin, Zhao Yan & Zhou Lili. Research on Application of Project Re-measurement Management System in Pipeline Project[J]. *Electronic Instrumentation* Customers, 2013(2): 67-72

Wu, G., Zhao, X., & Zuo, J. (2017). Effects of inter-organizational conflicts on construction project added value in China. *Engineering, Construction and Architectural Management*, 28(5), 695-723. doi:10.1108/IJCMA-03-20170025

Wu, G., Zhao, X., & Zuo, J. (2017). Effects of inter-organizational conflicts on construction project added value in China. Engineering, *Construction and Architectural Management*, 28(5), 695-723. doi:10.1108/IJCMA-03-20170025

Wu, G., Zhao, X., Zuo, J., &Zillante, G. (2017). Effects of contractual flexibility on conflict and project success in megaprojects. *International Journal of Conflict Management*, 29(2), 253-278. doi:10.1108/IJCMA-06-2017-0051

Wyk, B. V. (2012). *Research design and methods Part 1.* University of Western Cape. Retrieved from https://www.uwc.ac.za/Students/Postgraduate/Documents/ Research and Design I.pdf

Yin, R. (2009). *Case study research: Design and methods* (4 ed.). California: Sage Publications Inc.

Yiu, K.T.W., & Cheung, S.O. (2006). A catastrophe model of construction conflict behavior. *Building and Environment*, 41, 438-447. doi:10.1016/j.buildenv. 2005.01.007 59

Zhang, L., & Huo, X. (2015). The impact of interpersonal conflict on construction project performance A moderated mediation study from China. *International Journal of Conflict Management*, 26(4), 479-498. doi:doi.org/10.1108/ IJCMA09-2014-0072

Zhang, W. and Zhang, Q. (2017), "Exploring antecedent difference between early and late adopters of disruptive innovation in e-business microcredit context: evidence from China", *International Journal of Innovation and Technology Management*, Vol.14 No.6, pp.1-29.

Zhu, F., Wang, L., Yu, M., & Yang, X. (2020). Quality of conflict management in construction project context: Conceptualization, scale development, and validation. Engineering, *Construction and Architectural Management*, 27(5), 1191-1211. doi:doi.org/10.1108/ECAM-09-2019-0497

Appendices A

INTERVIEW GUIDELINE

Consultant's perspective

Research topic -

Conflict handling styles used in re-measurement construction contracts in Sri Lanka

Aim of the study-

This study aims to investigate the use of conflict handling styles by consultants and contractors in re-measurement contracts during the post-contract stage of Sri Lankan construction projects.

Objectives of the study –

- Review the concepts of conflicts, conflict handling, and conflict styles.
- Identify different types of conflicts faced by consultants and contractors in re-measurement contracts during the post-contract stage.
- Investigate different conflict-handling styles used by consultants for the above-identified conflicts.
- Investigate different conflict-handling styles used by contractors for the above-identified conflicts.

Details of Respondent

Designation	……..
Profession	…….
Type of company	☐ Contracting ☐ Consultant
Experience – (number of years)	…….
Number of Re-measurement Contracts involved in	
Date -	…../…./……

Key expertise areas related to the topic -…….

1.1) What is the type of **consultant and contractor conflicts** that can be identified in re-measurement contract during the post-contract stage?

No.	Type of conflicts	Yes	No.	Modify
	Payment conflicts			
1.	Financial issues of the delay payment			
2.	Late submission of interim payment certificate			
3.	Financial issues of the non-payment			
4.	Late submission of interim payment valuation			
	If any type of conflicts specifies below…			
	Relationship conflicts			
1	Unprofessional behavior			
2	Poor communication			
3	Design changes			
4	Contradictory record-keeping			
5	Disagreement between parties			
6	Difficulties in coordination			
7	Difference in attitudes			
8	Late submission of documents			
9	Less experience			
10	Lack of contact management			
11	Supervision, and coordination			
	If any type of conflicts specifies below…			
	Documentation conflicts			
1	Poor documentation			
2	Contradictions of documents			

No.	Type of conflicts	Yes	No.	Modify
3	Negligence			
4	Impracticable design			
5	Designs are not finalized			
6	Consultant changes by the client and the consultant			
7	Delayed in materials approval			
8	Lack of clarity of the document			
9	In completed construction document			
10	Underestimating real cost			
11	Late submission of documents			
	If any type of conflicts specifies below…			
	Work-related conflicts			
1	Design errors			
2	Disagreement between parties			
3	Requirements of parties			
4	Contradictory record-keeping,			
5	Poor coordination			
6	Incorrect record keeping			
7	Approved unavailability of resources			
8	Poor communication			
9	Less experience			
10	Late submission of approval			
11	Negligence			
12	Delayed instruction			
13	Delayed work			
	If any type of conflicts specifies below…			

1.2) What are the identified most suitable conflict-handling styles to resolve conflicts in the re-measurement contract during the post-contract stage **by consultants**?

No.	Type of conflicts	Handling Styles															
		Integrating	**Obliging**	**Dominating**	**Avoiding**	**Compromising**	**Collaborating**	**Accommodating**	**Competing**	**Contending**	**Problem-Solving**	**Yielding**	**Inaction**	**Withdrawal**	**Non-Confrontation**	**Solution - Orientation**	**Control**
	Payment conflicts																
1.	Financial issues of the delay payment																
2.	Late submission of interim payment certificate																
3	Financial issues of the non-payment																
4	Late submission of interim payment valuation …																
	If any type of conflicts specifies below…																
	Relationship conflicts																

No.	Type of conflicts	Handling Styles															
		Integrating	Obliging	Dominating	Avoiding	Compromising	Collaborating	Accommodating	Competing	Contending	Problem-Solving	Yielding	Inaction	Withdrawal	Non-Confrontation	Solution - Orientation	Control
1	Unprofessional behavior																
2	Poor communication																
3	Design changes																
4	Contradictory record-keeping																
5	Disagreement between parties																
6	Difficulties in coordination																
7	Difference in attitudes																
8	Late submission of documents																
9	Less experience																
10	Lack of contact management																
11	Supervision, and coordination																
	If any type of conflicts specifies below…																

No.	Type of conflicts	Handling Styles															
		Integrating	**Obliging**	**Dominating**	**Avoiding**	**Compromising**	**Collaborating**	**Accommodating**	**Competing**	**Contending**	**Problem-Solving**	**Yielding**	**Inaction**	**Withdrawal**	**Non-Confrontation**	**Solution - Orientation**	**Control**
	Documentation conflicts																
1	Poor documentation																
2	Contradictions of documents																
3	Negligence																
4	Impracticable design																
5	Designs are not finalized																
6	consultant changes by the client and the consultant																
7	Delayed in materials approval																
8	Lack of clarity of the documents																
9	In completed documents																

No.	Type of conflicts	Handling Styles															
		Integrating	Obliging	Dominating	Avoiding	Compromising	Collaborating	Accommodating	Competing	Contending	Problem-Solving	Yielding	Inaction	Withdrawal	Non-Confrontation	Solution - Orientation	Control
10	Underestimating real cost																
11	Late submission of documents																
	Work-related conflicts																
1	Design errors																
2	Disagreement between parties																
3	Requirements of parties																
4	Contradictory record-keeping,																
5	Poor coordination																
6	Incorrect record keeping																
7	Approved unavailability of resources																
8	Poor communication																

No.	Type of conflicts	Handling Styles															
		Integrating	**Obliging**	**Dominating**	**Avoiding**	**Compromising**	**Collaborating**	**Accommodating**	**Competing**	**Contending**	**Problem-Solving**	**Yielding**	**Inaction**	**Withdrawal**	**Non-Confrontation**	**Solution - Orientation**	**Control**
9	Less experience																
10	Late submission of approval																
11	Negligence																
12	Delayed instruction																
13	Delay work																
	If any type of conflicts specifies below…																

1.3) Opinion of the difficult conflicts handling styles to resolve conflicts in re-measurement contract

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1.4) Opinion of the conflicts handling styles to resolve conflicts in re-measurement contract

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Thank you

Appendices B

INTERVIEW GUIDELINE

Contractor's perspective

Research topic -

Conflict handling styles used in re-measurement construction contracts in Sri Lanka

Aim of the study-

This study aims to investigate the use of conflict handling styles by consultants and contractors in re-measurement contracts during the post-contract stage of Sri Lankan construction projects.

Objectives of the study –

- Review the concepts of conflicts, conflict handling, and conflict styles.
- Identify different types of conflicts faced by consultants and contractors in re-measurement contracts during the post-contract stage.
- Investigate different conflict-handling styles used by consultants for the above-identified conflicts.
- Investigate different conflict-handling styles used by contractors for the above-identified conflicts.

Details of Respondent

Designation	…….
Profession	…….
Type of company	☐ Contracting ☐ Consultant
Experience – (number of years)	…….
Number of Re-measurement Contracts involved in	
Date -	…../…./……

Key expertise areas related to the topic -…….

1.1) What is the type of **consultant and contractor conflicts** that can be identified in re-measurement contract during the post-contract stage?

No.	Type of conflicts	Yes	No.	Modify
	Payment conflicts			
1.	Financial issues of the delay payment			
2.	Late submission of interim payment certificate			
3.	Financial issues of the non-payment			
4.	Late submission of interim payment valuation			
	If any type of conflicts specifies below…			
	Relationship conflicts			
1.	Unprofessional behavior			
2.	Poor communication			
3.	Design changes			
4.	Contradictory record-keeping			
5.	Disagreement between parties			
6.	Difficulties in coordination			
7.	Difference in attitudes			
8.	Late submission of documents			
9.	Less experience			
10.	Lack of contact management			
11.	Supervision, and coordination			
	If any type of conflicts specifies below…			
	Documentation conflicts			
1.	Poor documentation			
2.	Contradictions of documents			

No.	Type of conflicts	Yes	No.	Modify
3.	Negligence			
4.	Impracticable design			
5.	Designs are not finalized			
6.	consultant changes by the client and the consultant			
7.	Delayed in materials approval			
8.	lack of clarity of document the distribution of workflow			
9.	in completed construction document			
10.	Underestimating real cost			
11.	Late submission of documents			
	If any type of conflicts specifies below…			
	Work-related conflicts			
1.	Design errors			
2.	Disagreement between parties			
3.	Requirements of parties			
4.	Contradictory record-keeping,			
5.	Poor coordination			
6.	Incorrect record keeping			
7.	Approved unavailability of resources			
8.	Poor communication			
9.	Less experience			
10.	Late submission of approval			
11.	Negligence			
12.	Delayed instruction			
13.	Delayed work			
	If any type of conflicts specifies below…			

1.2) What is the identified most suitable conflict-handling styles to resolve conflicts in re- measurement contract during the post contract stage **by contractors**?

No.	Type of conflicts	Handling Styles															
		Integrating	**Obliging**	**Dominating**	**Avoiding**	**Compromising**	**Collaborating**	**Accommodating**	**Competing**	**Contending**	**Problem-Solving**	**Yielding**	**Inaction**	**Withdrawal**	**Non-Confrontation**	**Solution-Orientation**	**Control**
	Payment conflicts																
1.	Financial issue of the delay payment																
2.	Late submission of interim payment certificate																
3.	Financial issue of the non-payment																
4.	Late submission of interim payment valuation																
	If any type of conflicts specifies below…																

No.	Type of conflicts	Handling Styles															
		Integrating	Obliging	Dominating	Avoiding	Compromising	Collaborating	Accommodating	Competing	Contending	Problem-Solving	Yielding	Inaction	Withdrawal	Non-Confrontation	Solution-Orientation	Control
	Relationship conflicts																
1	Unprofessional behavior																
2	Poor communication																
3	Design changes																
4	Contradictory record-keeping																
5	Disagreement between parties																
6	Difficulties in coordination																
7	Difference in attitudes																
8	Late submission of documents																
9	Less experience																
10	Lack of contact management																
11	Supervision, and coordination																
	If any type of conflicts specifies below…																

No.	Type of conflicts	Handling Styles															
		Integrating	**Obliging**	**Dominating**	**Avoiding**	**Compromising**	**Collaborating**	**Accommodating**	**Competing**	**Contending**	**Problem-Solving**	**Yielding**	**Inaction**	**Withdrawal**	**Non-Confrontation**	**Solution-Orientation**	**Control**
	Documentation conflicts																
1	Poor documentation																
2	Contradiction of documents																
3	Negligence																
4	Impracticable design																
5	Designs are not finalized																
6	Consultant changes by the client and contractor																
7	Delay in material approval																
8	Lack of clarity of documents								`								
9	In competed documents																
10	Underestimating real cost																

No.	Type of conflicts	Handling Styles															
		Integrating	Obliging	Dominating	Avoiding	Compromising	Collaborating	Accommodating	Competing	Contending	Problem-Solving	Yielding	Inaction	Withdrawal	Non-Confrontation	Solution-Orientation	Control
11	Late submission of documents																
	If any type of conflicts specifies below…																
	Work-related conflicts																
1	Design errors																
2	Disagreement between parties																
3	Requirement of parties																
4	Contradictory record keeping																
5	Poor coordination																
6	Incorrect record keeping																
7	Approval unavailability of resources																

No.	Type of conflicts	Handling Styles															
		Integrating	**Obliging**	**Dominating**	**Avoiding**	**Compromising**	**Collaborating**	**Accommodating**	**Competing**	**Contending**	**Problem-Solving**	**Yielding**	**Inaction**	**Withdrawal**	**Non-Confrontation**	**Solution-Orientation**	**Control**
8	Poor communication																
9	Less experiences																
10	Late submission of approval																
11	Negligence																
12	Delay instruction																
13	Delay work																
	If any type of conflicts specifies below…																

1.3) Opinion of the difficult conflicts handling styles to resolve conflicts in re-measurement contract

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1.4) Opinion of the conflicts handling styles to resolve conflicts in re-measurement contract

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Thank you

R.A.T. Damayanthi (Reg.No: 179156 T)
Student Postgraduate (MSc. in Construction Law & Dispute Resolution),
Department of Building Economics,
Faculty of Architecture,
University of Moratuwa.
15/08/2021

Dear Sir/ Madam,

Interview Guide line for the Research on "Conflicts handling styles to resolve conflicts between consultant and contractor in re-measurement contract- post contract stage"

I am following a M.Sc. Course on Construction Law & Dispute Resolution at the Department of Building Economics, University of Moratuwa. Currently, I am conducting research on the above topic, and the mode of data collection is deemed as one interview.

The interviews will be conducted with experienced professionals in the construction industry. I have identified yourself as a potential participant who could provide me with valuable information for this research. Therefore, I would like to interview you for **approximately 40-50 minutes** in my research literature findings and your expert opinion. The medium of collecting data will be **voice recording (with the permission of the interviewee)** to collect data more precisely.

Finally, thanks for the in sequence and time provided for this research. If you are interested to know the outcome of this research, I would be pleased to contribute to it with you

Thank you,
Yours faithfully,

……
R.A.T. Damayanthi
(Quantity Surveyor)
State Engineering Corporation of Sri Lanka

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