

**ASSESSING EFFECTIVENESS OF ARBITRATION IN RESOLVING
CONSTRUCTION CONTRACT DISPUTES IN NEPAL**

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RECOMMENDATION LETTER

This is to certify that this thesis entitled “ASSESSING EFFECTIVNESS OF ARBITRATION IN RESOLVING CONSTRUTION CONTRACT DISPUTES IN NEPAL” submitted by Mr. Shiva Prasad Sharma Paudel to the Central Department of Public Administration, Faculty of Management, Tribhuvan University for the Master of Philosophy of this university is completed under my guidance and supervision. The thesis is the candidate’s original work. I have carefully read this final work and I am fully satisfied with the substance of the thesis submitted to the Central Department of Public Administration, Faculty of Management, Tribhuvan University.

To the best of my knowledge, the candidate has also fulfilled all the other requirements of the Central Department of Public Administration, Faculty of Management, Tribhuvan University, I, therefore, recommend that this thesis be considered for the award of Master of Philosophy degree.

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We have conducted the viva-voce examination of the thesis

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Entitled

“Assessing Effectiveness of Arbitration in Resolving Construction Contract Disputes in Nepal” and found the thesis to be the original work of the students and written according to the prescribed format. We recommend the thesis to be accepted as the partial fulfillment of the requirements for the Master of Philosophy.

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DECLARATION

I, Shiva Prasad Sharma Paudel, hereby declare that the thesis entitled “ASSESSING EFFECTIVENESS OF ARBITRATION IN RESOLVING CONSTRUCTION CONTRACT DISPUTES IN NEPAL” submitted to the Central Department of Public Administration, Faculty of Management, Tribhuvan University, is entirely my own work in the form of partial fulfillment of the requirement of Master of Philosophy under the supervision of Dr. Buddhi Man Shrestha.

The format of this report is based on the guidelines provided by the Central Department of Public Administration (CDPA) and the American Psychological Association (APA). This thesis report is a result of my own research work, and where other people’s researches were used, they have been duly acknowledged.

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Abstract

Contractual dispute is ever raising and growing in developing countries. The complex modern construction industry involves complex contractual arrangement that may result to complex disputes. Due to its simplicity and flexibility, demand of arbitration is growing worldwide as an alternative to the court. The existing Public Procurement Act of Nepal has made mandatory provision of using arbitration to resolve contractual disputes. This study aims to assess the effectiveness of arbitration in Nepal in resolving construction contract disputes and the influence of dispute factors over it. A sequential explanatory mixed-method was used as methodology where quantitative research was followed by qualitative for deductive reasoning. Questionnaires, written and unstructured face-to-face interviews were primary data collection instruments. Secondary data have also been used. Given the arbitration is a highly specialized field having limited reliable informants, the target population and samples were carefully estimated. The thematic analysis was performed for the qualitative data. Complexity of the dispute has inverse influence. Competence of the tribunal, adequacy of size of the tribunal and approaches to the presentation of evidence have significant positive influence. There was mixed perception on the influence of claim value. Since, the triple constraints, cost, time and quality, were not effective, the study failed to accept the effectiveness of arbitration. Avoidance of parties' consent to accept the award, a principal criteria set under epistemological stance to exist an arbitration, has raised questions on its existence. Therefore, a serious thought on the implementation of award is recommended.

Keywords: arbitration, construction contractual disputes, ADR, effectiveness, thematic analysis

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List of Abbreviation

AAct	:	Arbitration Act, 1999 of Nepal
ADR	:	Alternative Dispute Resolution
ANOVA	:	Analysis of Variance
APR	:	Arbitral Procedures Regulations
CIAA	:	Commission for the Investigation of Abuse of Authority
CPI	:	Corruption Perceptions Index
DoR	:	Department of Road
FCAN	:	Federation of Contractors' Association of Nepal
GDP	:	Gross Domestic Product
ICADR	:	The International Centre for Alternative Dispute Resolution
ICB	:	International Competitive Bidding
ICC	:	International Chamber of Commerce
NEPCA	:	Nepal Council of Arbitration
NCB	:	National Competitive Bidding
NRs	:	Nepali Rupees
NVC	:	National Vigilance Center
OECD	:	Organization for Economic Cooperation and Development
PPA	:	Public Procurement Act
PPR	:	Public Procurement Regulation
SIAC	:	Singapore International Arbitration Centre
SPSS	:	Statistical Package for Social Science
UN	:	United Nations
UN-ESCAP	:	United Nations Economic and Social Commission for Asia and the Pacific
UNCITRAL	:	United Nations Commission on International Trade Law

Chapter 1

INTRODUCTION

1.1 Introduction

Starting with the general background information on construction arbitration and its effectiveness, this chapter focuses on the statement of problems and covers following topics: research objectives, questions and hypothesis; significance, scope and limitation of study and ends with the structure of the research report followed by an overview.

1.2 Background of the study

Globally, the construction industry has a significant contribution to the national economy. According to Lowe (2003), the construction industry has added value in the range of 7% to 10% for the developed economy and in the range of 3% to 6% for the undeveloped economy (Wibowo, 2009). The economic survey 2020/21 report of Ministry of Finance of Nepal shows that the construction industry has contributed 9.81 % to the growth of GDP. This indicates that the construction industry is expanding in fast pace becoming vast, dynamic and progressively complex (Harmon, 2003) in nature. This industry primarily contains three parties: owners, consultants and contractors. Harmon explains, the parties are involved in the complex contractual documents resulted from the complex construction projects which might often results in complex disputes.

Construction disputes can arise for a variety of reasons, including variations in time and cost, the volume and complexity of the job, the presence of several contracting parties, the inadequate preparation and/or execution of the contract documents, financial concerns and communication gaps (Harmon, 2003) and she warns that any one or more of these factors together can make a project fail. Cost overruns, delays in project completion, and a deterioration in business relationship between the parties concerned can all result in laborious arbitration or legal action.

Regrettably, disputes are frequent and unavoidable in the construction sector (Moza & Paul, 2017) therefore, in order to properly complete a projects achieving objectives, disputes relating to construction contracts must be settled amicably and quickly. Complex construction litigation may result from unresolved disputes of complicated construction projects (Pinnell 1999) as cited by

Harmon (2003). Barkai (2011) estimated that one in four construction projects had a claim filed, while 10 % to 30 % of all construction projects have substantial disputes.

Due to a number of factors including being costly and time-consuming (Burger 1982), adversarial (Rendell 2000), flawed (ASFE 1988) and result in the ‘winner’ sometimes being the ‘loser’ (Goodman 1999), cited by Harmon (2003), construction project management experts believe the litigation is inappropriate for resolving construction contract related disputes. Therefore, alternative dispute resolution (ADR) techniques are recommended.

ADR is a participatory way for resolving disputes alternative to the court (Acharya, 2019) and the arbitration is a form of ADR mechanism and the arbitration agreement serves as its foundation. Arbitration is a binding. According to the UNCITRAL Model Law, the arbitration agreement is *“an agreement between the parties to submit all or certain disputes which have arisen or which may arise between them in respect of a defined legal relationship, whether contractual or not”*. A clause in a contract or a separate agreement, both can take the form of an arbitration clause.

Arbitration rules of International Court of Arbitration define the arbitration as *“a formal procedure leading to a binding decision from a neutral arbitral tribunal, susceptible to enforcement pursuant to both domestic arbitration laws and international treaties”*.

Therefore, an arbitration agreement is when two or more parties agree for a potential dispute between them to be decided by one or more individuals, in a legally binding, unbiased, and fair manner based on the evidence presented. Ronald (1987) stated the process of resolving disputes is an arbitration, cited by Acharya, 2018 and has a strong enforcement element (Acharya, 2019).

The parties to disputes choose one or more individual experts to serve as arbitrators in the arbitration process. These arbitrators have precedence over the parties, and their decisions are final and binding on all parties engaged in the dispute (Bello, 2014). In the expectation of resolving a dispute at a nominal cost and without the need for a lengthy courtroom trial, arbitration is developed as an alternative to litigation. In Nepal, the term “Arbitrator” refers to both an individual arbitrator and a panel of arbitrators selected to resolve a dispute, as detailed under Arbitration Act 2056, 1999 (AAct).

Neither, the Arbitration Act 2038 (1981) nor the Arbitration Act 2055 (1999) of Nepal defines the arbitration explicitly. The former act was repealed by the latter one, which under article 2(a) defines agreement as “a written agreement reached between the concerned parties for a settlement through arbitration of any dispute concerning any specific legal issue that has arisen or may arise in the future under a contract or otherwise.”

In essence, arbitration is a formal mechanism of resolving disputes outside of a court. The following is a concise summary of benefits of arbitration over litigation (Aryal & Dahal, 2018): arbitration is a private alternative to the formal judicial system for resolving disputes, where technical experts are expected to be an arbitrator; it is expected that arbitration process is less expensive than going through the court system and takes less time in compare to the legal proceedings; arbitration is anticipated to be less formal hence more convenient for the parties; and arbitration upholds the secrecy of the parties and the cases as there is no public hearing. Moreover, the Public Procurement Act, 2063 (PPA) 2007 and Public Procurement Regulation, 2064 (PPR) 2007 of Nepal have accepted arbitration as an alternative dispute settlement method.

1.3 Statement of problem

Construction industry is one of the major players of national development, both physically. The economic survey report 2006 and 2020/2021 of Ministry of Finance reported 11% and 9.81 % contribution of construction industry to the GDP of Nepal respectively using around 35 % of government budget. According to a study by Love P. et al. (2010) about 60 percentages of the development budget is spent through the use of contractors, cited by (Aryal & Dahal, 2018) and the construction sector is creating employment opportunities to a huge number of population.

The government allots billions of rupees annually for the construction of different infrastructure projects. Nepal government has allotted NRs 380 billion for capital expenditures in the fiscal year 2022-2023, representing 21.2% of the overall budget. Similarly, the private sectors also contribute billions of rupees to the development of infrastructure for both private and public uses.

In Nepal, there are varieties of construction companies in practice, ranging from local contractors for petty works to major companies with the capacity to carry out mega projects. The scope of work in the construction ranges from domestic residential buildings to national pride projects. As

a result, the construction sector is a major generator of jobs and revenue. Infrastructure development is a priority area for the sustainable social and economic growth of a nation, therefore government is the major client of the construction industry.

The primary tool for carrying out infrastructure projects is a construction contract. The PPA and PPR contain provisions for National Competitive Bidding (NCB) and International Competitive Bidding (ICB) to select the competent construction companies for the projects. Most of the mega, high-value and national pride projects are handled by the international consultants and contractors. The requirement of foreign contractors for mega or high value projects indicates that the local contractors lack competencies to manage mega or high value projects. The complex nature of the construction project demands advanced and complex contracts. It is nearly impossible to prepare a contractual document to cover each and every issues that may occur during the implementation of a project.

Conflicts wouldn't exist in a perfect construction environment, but the construction industry is not perfect. The conflict would always arise in real-world construction projects and the complex contracts may, normally, lead to the complex disputes. While disputes over construction projects are unavoidable worldwide, they tend to be more common in underdeveloped nations (Aryal & Dahal, 2018) and they added that the reason construction disputes are on the rise every year is due to the nature of the projects, including their uncertainty, complexity and involvement of several parties. The disputes have detrimental effects on the construction industry as well as on the overall economy of a state (Nwakor et al., 2017) cited in Shittu et al. (2020). The key negative effects which eventually impede the success of a project, include loss of reputation, a breakdown in professional relationship (Aryal et al., 2018), and a decrease in productivity. Therefore, establishment of an efficient dispute resolution procedures is not an option but a need (Bahemuka, 2021) in any construction projects.

The performance and the productivity of a project are always impacted by disputes. According to literatures, the direct cost of conflict ranges from 0.5% to 5% of the contract value of a project. On the other hand, the indirect cost resulting from the outcomes of the disputes may be even worse for the parties involved (Chan DWM, Kumaraswamy MM, 1997) as cited by Aryal and Dahal

(2018), with the outcomes possibly including loss of productivity and performance, stress, exhaustion, loss of markets, strained business relationships between parties, etc.

Harmon (2003) refers to Reuben, 1996 and Trantina, 2001, to claim that there is not much empirical evidence to support the efficiency of ADR in saving time and cost. While Kurniawan (2015) has asserted that arbitration was successfully used to settle construction disputes in Indonesia; Abwunza et. al. (2021) argued that arbitration has lost favor in Kenya due to numerous concerns about its effectiveness. This implies that the effectiveness of the construction arbitration either has been declining recently or it may differ from region to region or nation to nation.

The effectiveness of arbitration is influenced by a number of factors (Hall, 1980). Abwunza et al. (2021) identified four major dispute factors that influence the effectiveness of the arbitration. The four dispute factors are: the complexity of the dispute; the competency of the tribunal; adequacy of the size of the tribunal and approaches to the presentation of evidence. Some literatures have also considered the claim value as one of the important factors that may influence the effectiveness of the arbitration. Moza and Paul (2017) claims that the number of claims together with claim value each has an influence on the total duration of hearings.

Effectiveness of the arbitration is what and how the system or practice have achieved in regards to its objectives or goals satisfying the disputed parties. The primary objective of opting the arbitration for the dispute resolution is to save time and money and to avoid the tedious litigation process. Therefore, the research problem of this study is to assess how effectively the arbitration has been used in meeting the primary objectives of arbitration while resolving the construction contracts related disputes and to evaluate how have the dispute factors influence it in Nepal?

The practice shows that for the high value and national pride construction projects involving international contractors, the parties prefer to have the place of arbitration sitting for conflict resolution mostly outside Nepal. Definitely, the sitting is the parties' choices. However, the question arises why cannot Nepal be the sitting for the international contracts? There could be various reasons including the effectiveness of the arbitration practice. At the same time, another question arises, do we really have an effective arbitration practice in Nepal? If the arbitration practice in Nepal is effective and reliable enough, there could be high potential to attract the

international disputes in Nepal. For the purpose of this study, the five aforementioned critical elements (the complexity of the dispute; the competence of the tribunal; adequacy of the size of the tribunal; approaches to the presentation of evidence and claim value) are taken into consideration as influencing dispute factors on the effectiveness of the arbitration in the Nepali construction industry.

1.4 Research questions

The study, therefore, concentrates on attempts to find answers of the below questions:

- Q1. Is there any influence on effectiveness of arbitration due to dispute factors?
- Q2. Has the arbitration become effective in resolving construction contract related disputes?
- Q3. Is there any variation on perception on effectiveness of arbitration according with the variation in their gender, age, geographic representation, qualification, profession, position, stakeholders, experience on dispute, number of cases experienced, maximum value of claim experienced and type of arbitration encountered?

1.5 Research objectives

General aim: The study aims to explain an added knowledge on the arbitration practice of Nepal in resolving the construction contract disputes.

Specific Objective: The general aim is further narrowed down into three specific objectives:

First Objective: To examine the influence of dispute factors on the effectiveness of arbitration practiced in Nepal.

Second Objective: To examine the effectiveness of arbitration in resolving construction contract related disputes in Nepal.

Third Objective: To examine the variation in the perception on effectiveness of arbitration with respect to the gender, age, geographic representation, qualification, profession, position,

stakeholders, experience on dispute, number of cases experienced, maximum value of claim experienced and type of arbitration encountered.

1.6 Research hypothesis

To achieve the research objective of the study, below research hypothesis have been developed:

H₁: There is significant influence of the dispute factors on the arbitral effectiveness.

H₂: The arbitration is significantly effective in resolving construction contract related disputes.

H₃: There is significance difference in the mean perception on the effectiveness of arbitration with respect to respondents' gender.

H₄: There is significance difference in the mean perception on effectiveness of arbitration with respect to respondents' age.

H₅: There is significance difference in the mean perception on effectiveness of arbitration with respect to the respondents' geographical representation.

H₆: There is significance difference in the mean perception on effectiveness of arbitration with respect to the respondents' qualification.

H₇: There is significance difference in the mean perception on effectiveness of arbitration with respect to the respondents' profession.

H₈: There is significance difference in the mean perception on effectiveness of arbitration with respect to the respondents' position level.

H₉: There is significance difference in the mean perception on effectiveness of arbitration with respect to the groups of stakeholders (parties).

H₁₀: There is significance difference in the mean perception on effectiveness of arbitration with respect to the respondents' role on dispute resolution.

H₁₁: There is significance difference in the mean perception on effectiveness of arbitration with respect to the number of disputes encountered.

H₁₂: There is significance difference in the mean perception on effectiveness of arbitration with respect to the maximum value of claim experienced.

H₁₃: There is significance difference in the mean perception on effectiveness of arbitration with respect to type of arbitration.

1.7 Significance of the study

It is expected that the study provides valuable information to the ADR practitioner including Nepal Council of Arbitration (NEPCA) and stakeholders of the construction industry on the current status of the arbitration practices of Nepal in the expectation that any gaps in the process can be corrected to have an improved arbitration in the days to come. This study is also expected to provide background information for the development of appropriate policy, acts, strategic and formulation of policies.

Thus, in long run both the NEPCA, other ADR entities, and the construction parties are expected to be benefited from the conclusion of this study. The arbitration team should be in position to provide the best out of them and the parties should be in position to fully rely on the arbitrators so that no or nominal cases go to the court challenging the arbitration award.

It is expected that the study would be useful to:

- ADR practitioners, NEPCA management and stakeholders who may want to improve the arbitration practices and engage in the arbitration field.
- Parties of construction contracts who have to implement the contracts as well as awards.
- Life and general members of the NEPCA are also expected to be benefited by this study.

1.8 Scope of the study

The study is motivated by the fact that the arbitration process is an important and powerful alternative dispute resolution tool for the dispute settlement process in the construction disputes. The arbitration practice needs to be reviewed regularly to amplify the justification of using it in resolving the contractual conflicts in an effective way. Therefore, the study tries to investigate the current situation of the arbitration practices in handling construction contract related disputes.

The rationale behind collecting the demographic information was to ensure that the information was collected from diversified community.

Analysis of effectiveness using of objective measures of the quality of award is beyond the scope of this study due to time and cost factor of this study.

1.9 Limitation of the study

The main limitation of this study is the accessibility of the sufficient statistics required for the study. Nevertheless, all reasonable efforts have been made to ensure that the research obtains most reliable and accurate data not to compromise the quality of the work.

The study has faced the following limitations:

- Samples are assumed to be representative of the normally distributed population.
- The confidential nature of arbitration renders it very difficult to conduct research on the topic. This complication has reduced the number of the targeted population and prohibited to get access to the details of the active cases.
- The study is limited to the construction contract related disputes experienced in Nepal.

1.10 Organization of the study

This research study report is organized into three different sections: preliminary, main body and supplementary sections. Preliminary and supplementary sections are arranged before and after the main body sections respectively. Main body is divided into five chapters, briefed below:

Chapter 1: The first chapter is an introduction which covers background of the study, problem statement, objective of the study, research question, scope, significance and limitation of the study and the organization of the study.

Chapter 2: The second chapter is about the ‘Literature review’ that focuses on the philosophy of arbitration, theoretical and empirical literature reviews; research gaps, and a conceptual framework and its operationalization.

Chapter 3: The third chapter is about the ‘Research methodology’ that covers the research philosophy, research methodology in complete including research methods and designs, source of data, population and sample, data collection techniques, data analysis techniques and ethical considerations used for this research.

Chapter 4: This chapter is about data analysis and presentation of results, findings and discussion of the outcomes.

Chapter 5: The last chapter is about the summary, conclusion and implication of the study.

1.11 Overview

Arbitration is one of the powerful tools used as alternative dispute resolution. In the recent years, the use of arbitration is growing in settling construction contract disputes in addition to other commercial disputes. The principles of the arbitration are focused on cost effectiveness, time efficiency and quality of the award. There have been several issues raised on the effectiveness of the arbitration globally. For the better implementation of the arbitration act in favor of the public, it has been important to evaluate the effectiveness of the arbitration in Nepal, which is the principal concentration of this study. The next chapter is about the literature review.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter has appraised the available literatures relevance to the topic concentrating on the effectiveness of the arbitration. Starting with the philosophy of the arbitration, this chapter reviews different theories associated with the study area; reviews empirical literatures and concentrate on the arbitration practice and legal provision available in Nepal and discuss the research gap. The chapter also includes the conceptual framework and the operationalization of the different variables used for the study.

2.2 Philosophical Foundation of Arbitration

Mathew and Hassim (2015) conducted study on the topic of “The philosophy of arbitration” outlining key rules and principles of arbitration. The study elucidates that the fundamental requirement for an arbitral system is a contract/agreement between parties. The study has recalled Thomas Hobbes’ theory of the law of nature, especially laws from sixteenth to nineteenth, as the foundation of the philosophy of arbitration. The below three important arbitration principles were also emphasized in the article:

- i) The objective of arbitration is to secure an equitable resolution of disputes by an impartial panel without needless expense or delay.
- ii) Parties to disputes are free to choose how to resolve their differences; and
- iii) Unless otherwise permitted by law, no court should get involved.

Therefore, arbitration is believed to be distinguished by its flexibility, fairness and quick conclusion in compared to a court of law. Arbitration is anticipated to be easier, faster, and less expensive. Arbitration was developed with the intention of gaining full power for equity, as cited in the article, according to Dawson, J.G, (Ed.), 1948. The criteria set for the arbitration to exist according to the epistemological stance are:

- i. A dispute exists.
- ii. An arbitrator has been appointed to resolve the dispute.
- iii. The parties have been given the chance to offer arguments and /or evidence in support of their respective claims, and
- iv. The parties consented to accept the arbitrator's ruling.

Mathew et al. (2015) concluded that the philosophy of arbitration is based on the ideas that the benefits should be prioritized over the harms, that the benefits must be received rather than given, that we must be patient if we have been wronged, and that a dispute should be resolved amicably in order for arbitration to be preferred over litigation.

In essence, the arbitration's guiding principle is the idea of an amicable resolution of the disputes.

2.3 Theoretical Review

Theoretical review is important to develop the guiding principles of the research that contributes to derive a conceptual framework for the study.

2.3.1 Theory of Effectiveness

McCormick (1981) defines the effectiveness as an instrument of how well the objectives are attained. The arbitration's main goal is to produce an outcome that is both timely and of high quality at an affordable price. The effectiveness of an arbitration is a multidimensional construct that includes the cost, timing and quality of the award (Abwunza et al., 2021), therefore the rationale for arbitration as ADR is to provide a procedure that is quicker and less expensive than litigation (ASF 1988; De-loitte and Touche, 1993; Treacy 1995) as cited by Harmon, 2003.

Hall (1980) studied on the topic of "Effectiveness theory and organizational effectiveness", where he claimed that regardless of any biases, the effectiveness is always a dependent variable. Three approaches to the organizational effectiveness are: Goal model, Resource acquisition model and Participant satisfaction model. Goal model links the objectives to the effectiveness. The degree to which the goals are realized is effectiveness (Etzioni, 1964) as cited by Hall, 1980. In opting the arbitration for the dispute resolution, is primarily due to its objective of cost effectiveness, time

efficiency and acceptability of the award. Therefore, according to the goal model, measurement of the cost, time and quality indicators (Abwunza et al., 2021) of the arbitration assists to determine effectiveness of the arbitration practiced. In participant satisfaction model the effectiveness is the organizations' abilities to satisfy the key constituencies within their environment. For the dispute resolution, the key constituencies are the disputed parties and the satisfaction level of the parties indicates the level of effectiveness of the arbitration practice. In resource acquisition model, concentration on finding and allocating the right resources on right task at right time determines the effectiveness. For the dispute resolution, the key resources are the qualified and competent tribunal, adequacy of the size of the tribunal (number of arbitrators in the tribunal) and the approaches to the presentation of evidence to the tribunal on timely manner.

According to Daft (2010) effectiveness is the extent to which an organization realizes its goal, cited in Islam et.al. (2020), who further redefined organizational effectiveness as an organization's objective achieving ability. The primary purpose of opting arbitration as the best method of resolving construction disputes is in the expectation of quality resolution timely and economically (Abwunza et al., 2021), therefore the extent of the realization of these three parameter determines the effectiveness of the arbitration process. The performance, objective achieving ability, in arbitration may influence by the adequacy and the competency of the resources allocated for the process and their motivation level to complete the tasks. Remuneration is one of the important elements of the hygiene factors of two factor theory of motivation. Hygiene factors influence the dissatisfaction level. The remuneration of the arbitrator depends on the claim value. Low claim value means minimum or low compensation and higher claim value means higher compensation. According to hygiene factors, the higher compensation prevent dissatisfaction.

2.3.2 Theory of Law of Nature

The Eleventh Law of Thomas Hobbes' theory of the law of nature states that the arbitrator should treat the parties equally and each party should be provided with equal and adequate opportunity during the arbitration process. The laws from Sixteenth to Nineteenth further elaborate that parties involved in a dispute must submit their rights to an arbitrator. An arbitrator must avoid situations of conflict of interest in order to be fair and impartial. These situations include: an arbitrator of a

dispute must avoid their own conflict; the arbitrator shall have no motive to favor one side over another and the arbitrator shall make an effort to settle disputes over the facts.

2.3.3 Theory of Arbitration Process

According to the arbitration process theory, the arbitration process is voluntary and consensual in origin (Carlston, 1952) and the proper role of arbitration is to adjudicate rather than to create rights, which is the basis of the quality of the arbitration. The arbitration was recognized as a consensual procedure in that it was based on a submission that set out the mutual agreement of the parties to arbitrate their dispute (Faris, 1995) in the expectation that they can avoid the expensive and lengthy litigation process. Faris (1995) studied on the topic of “An analysis of the theory and principles of alternative dispute resolution” which has discussed several theories and principles applicable in practicing the arbitration. One of the primary objectives of the legal system is to settle human controversy and disputes in accordance with the accepted societal norms and standards. In relation to the construction disputes, the contract documentations provide the standards to judge the disputes. In Nepali practice, the AAct (1999) is the primary law to guide in addressing the disputes through the arbitration. As described by (Faris, 1995), it was since 1697, an arbitral award could be enforced by the courts if the parties agreed in their agreement or submission to arbitration. This principle has significant importance to ensure that the arbitrators must be competent adequate to produce a quality award, which can be enforced by the court. The decision of the tribunal is equivalent to the judgment of a court and the provision is brought forward in to AAct (1999) of Nepal as well.

2.3.4 Theory of Judicial Decision Making

Arbitration is a judicial organ of the legal system (Carlston, 1952), therefore understanding of models of judicial decision making plays an important role for an effective arbitration award. Legal model of the theory of judicial decision making is primarily applicable in the arbitration process that assumes that the decisions or judgment are based on the facts of the case in light of the rules and regulations (Segal et al., 1995). Therefore, the arbitrators are needed to be technically and functionally skilled who understand the applicable rules and regulation and are conversant to the contractual provision applicable in the agreement for an effective decision making.

2.3.5 Public Policy and Theory of Governance

Public policy is a system of laws, rules and acts chosen and implemented by the government or an institution with the intention of benefiting the general public. Public policy plays an important role in improving quality of social life ensuring that the products and services are delivered on time. Importantly, it is only the public policy that has an authority to take precedence over the intentions of the parties in a dispute (Mathew et al., 2015). The Indian Arbitration and Conciliation Act, 1996, under Section 34, state that a court may set aside a domestic arbitration award if it conflicts with the public policy of India. In case of Nepal, while the Section 34-4-b of the AAct (1999) has provision not to implement award made by an arbitrator in a foreign country if the implementation of the award is unfavorable to the public policy of Nepal. The AAct is silent in case of a domestic arbitration award. Nevertheless, the legal principle of ignorance of the law excuses not (*ignorantia juris non excusat*) can be attracted for any award not favorable to the applicable public policies and laws. Therefore, the arbitrators and the parties involved in a dispute need to be knowledgeable and competent on the domestic public policy in practice to avoid complications on awards. The goal of public policy is associated with the good governance.

The United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) defines governance as “the process of decision-making and the process by which decisions are implemented or not implemented.” The World Bank describes governance as “promoting fairness, transparency and accountability” and the Organization for Economic Co-operation and Department (OECD) defines governance as “a system by which business organizations are directed and controlled”.

The New Public Management and New Public Governance philosophies are deeply rooted in governance (Asaduzzaman & Virtanen, 2016). In a democratic framework, good governance is connected with efficient and effective administration. In the field of management and public policy, governance has essentially been an unchallengeable concept. Good governance occupies a central position in current discourses on public administration and policy. The arbitration practice to be effective need to be guided by the principles of the good governance.

The principles of good governance include rule of law, transparency, responsiveness, equality, effectiveness and efficiency and accountability. The tribunal need to be competent enough to ensure that the practices of good governance while making decision for the growth and sustainability of the arbitration practices. The growth and sustainability are possible only if the parties realize the effectiveness of arbitration.

2.3.6 Conflict Resolution Theory

This theory contributes to a formal or informal method to guide the parties in finding an amicable way of settling their disputes. Conflict resolution theories are typically built around the types of disputes and the negotiating strategies used by the parties.

Interest Based Relational (IBR) approach is one of the important theories used for conflict/dispute resolution. IBR approach is important to avoid the flaring tempers, rising voices, and being aggressive in line with the disputes, as they may increase the complexity of the dispute. According to this approach, it is important first to simplify the complex dispute by separating people and their emotions from the issues which may ensure that a good relationship is maintained. The arbitrators need to focus in building mutual respect and understanding.

Under this approach better communication skills also plays a vital role to conclude the dispute amicably. Setting out the facts, according to the approach, the arbitrators need to help and listen both sides develop an understanding of the others' position to encourage both to reach a consensus so that the parties can accept the award voluntarily. Use of a comfortable language can be a best option for better communication.

2.3.7 Triple Constraint Theory

The Project Management Institute (PMI) defines a project as “a temporary endeavor undertaken to create a unique product, service or result.” And the Project Management as “the application of specific knowledge, skills, tools and techniques to deliver something of value”. Considering arbitration in terms of the above definition, Giaretta (2016) claims the arbitration itself as a project and all dimension of the project management paradigm are applicable to the arbitration.

The triple constraint theory is an important theory of the project management. The theory explains that every project includes three constraints and are tied to each other. A project has three primary elements: cost, time and scope / quality, which are applicable measuring project management (Atkinson, 1999). Scope and quality are closely associated with each other. The requirement of a client is the scope and the client's expectation for the final product is the quality.

2.3.8 Personality Traits Theory

As described by Novikova (2013) personality traits theory assumes that habitual patterns of cognition, emotion and action are manifested in a variety of contexts. The situation of arbitration might be of a stressful for some and not for others. The majority of characteristics of personality are influenced by the surroundings (Cattell, 1973) and added that personality traits can be used to characterize social groups (syntality) as well as individuals. Several researches indicate that personality traits are significant predictors of social conduct. The syntality of a group can be of dynamic nature. The dispute may influence on the traits of the parties. The arbitration involves individuals and groups from different environment and cultural background and the personality traits may influence the complexity of the dispute, ultimately affecting the effectiveness of the arbitration.

This also attracts the situational theory. The personality style may be changed from situation to situation and to be most effective and successful, the tribunal must be able to adapt personality style and approach to diverse circumstances. This theory demands that the tribunal, to be effective, need to be flexible to accommodate the disputed parties in the process.

2.4 Empirical Review on Effectiveness of Arbitration

Mishra and Aithal (2022) have done a study on “Effectiveness of arbitration in construction project” to evaluate the effectiveness of arbitration focusing on the contractual disputes on road constructions in Nepal. The methodology used was mixed methods. Success rate was used as measures of the effectiveness. Cases study and the questionnaires were the instruments for the data collection. A total of 40 out of 50 questionnaires were received. Equal number of questionnaires were distributed in two groups. Content analysis was performed. The finding of the study was that the success rate of arbitration was very low.

Abwunza et al. (2021) had conducted a study on “Explaining the effectiveness of construction arbitration: an organizational justice perspective” to describe the relationships among different factors influencing the effectiveness of arbitration in construction related disputes. The methodology used was a case study with semi-structured interview. Qualitative data were collected using documentary analysis and semi-structured interview with 13 arbitrators and parties. The article has recognized ten factors to evaluate the effectiveness of the arbitration and four of them are: complexity of the dispute, competence of the tribunal, adequacy of size of the tribunal and the approaches to the presentation of evidence. This article defines the arbitral effectiveness as a multi-dimensional construct consisting of cost, time and quality of award, hence the effective resolution includes ensuring the disputes are resolved timely, frugally and with an acceptable outcome. The article concludes that the arbitration is ineffective.

Bahemuka (2021) conducted a study on the topic of “Alternative dispute resolution in the construction industry: A case study of Uganda” with an aim to evaluate the effectiveness of ADR in the construction industry of Uganda. The research methodology was a quantitative research using the cross-sectional field survey design. A total of 166 completed questionnaires were collected out of 202 distributed within a targeted population of 222, making a response rate of 82 %. The study concluded that an informal ADR is comparatively effective than formal ADR in resolving disputes of Ugandan construction industry

On the topic of “Effects of disputes on the delivery of construction projects in Abuja”, a study was conducted by Shittu et al. (2020) to evaluate the effects of disputes. The research methodology used was quantitative using structured questionnaires. A purposive sampling was used to draw 74 samples from a population of 289. Only 49 responded. Data collection for the study was carried out using structured questionnaires. The finding was that the ambiguity in the preparation of contract as most severe cause. The effects of disputes are cost overruns, time delays, possibility of litigation, diminution of respect between parties and deterioration of relationship including break down in cooperation. Arbitrator’s professional expertise and availability are the key factors in the process. The arbitrators, independent of the parties, must have to perform their own honest evaluation based on their professional expertise (Leaua, 2012). The study supports Salomon, 2002 that selection of an arbitrator with a legal background is important.

Abwunza et al. (2019) conducted a study on the topic “Effectiveness of arbitration in contractual disputes: Tension between procedural efficiency and award quality”, to explain arbitral effectiveness. The research methodology used was documentary analysis and semi-structured interviews. Evaluating the three primary components of effectiveness: cost, time and quality of award, the study concluded that despite the ineffective result, the participants still preferred arbitration as an instrument for future disputes. They further recommend capacity building in developing skills to ensure efficient processes to ensure producing effective arbitral awards.

Dugane and Charhate (2018) studies on the topic of “Arbitration: a case study in the construction industry” to work on the consequences experienced by the disputed parties due to the arbitration process. The methodology used was case study, interview and questionnaire survey. Wilcoxon signed-rank test and t-test were used for 20 observations and 17 degree of freedom. The study concluded that there was a delay in awarding on the claims.

Aryal and Dahal (2018) have conducted a study on “A review of causes and effects of dispute in the construction projects of Nepal.” The methodology used was desk study using literature survey from different sources. The study aimed to investigate the causes and effects of disputes on construction projects. The conclusion is that the causes of disputes were including complexity and volume of works, multiple contracting parties, weakly drafted contract documents, etc.

Moza and Paul (2017) have undertaken a study on “Review of the effectiveness of arbitration” to comprehend and assess the effectiveness of the present arbitration procedure, focusing on those that pertain to the public sector of India. The methodology used was comprising of 22 case study. Time elapsed between the five prominent milestones, which were determined based on the previous literatures, was evaluated. The study evaluated the total times for arbitration and the duration between various milestones of arbitration to conclude that the arbitration takes longer than expected. The increased number of hearings resulted in delays in overall process of arbitration and the main cause of this delay was due to the delay in appointing the arbitrators and frequent changes in arbitrators. The study also unveiled that while content and the outcome of proceedings are controlled by the arbitrators, the choice of arbitrators and the process are controlled by the parties. The further added that the ADR is failing in meeting the purpose of relevant legislation as the arbitration process has ruined by delays and cost escalation. Moreover, the study also

concluded that the arbitration takes longer than desired in India, as the average time taken to conclude proceedings was 83.8 months (2514 days)

With an objective to look into the costs and effects of disputes in construction projects, Mashwama et. al. (2016) studied on a topic “Investigation of construction stakeholders’ perception on the effects & cost of construction dispute in Swaziland”. While structured questionnaires survey was the primary source of data, the literatures review was the source of secondary data. A total of 63 responses were received for the study out of 90 with 70 % response rate. The study considered the response rate as adequate for the analysis based on the declaration of Mcneill and Chapman (2005) since the result of a survey could be considered as biased if the return rate was lower than 40 %. The study concluded with the finding that the major impact of disputes in projects were loss of productivity, loss of reputation, business viability, profitability.

Kurniawan (2015) presented a paper on “Construction dispute resolution in Indonesia” to examine the dispute resolution practices. The methodology used was a through literature review and open-ended interviews. The sample size was 40 divided in three cluster at 20:10:10 ration. Referring to the construction stakeholders, he explained that while one of the project’s most unpleasant occurrences is a construction claim, the parties try to maintain good relationship with parties for the sake of continuity of new projects. The study unveiled that the weakest party is the contractors hence they are always willing to maintain a good relationship with the clients.

Cakmak and Cakmak (2014) have prepared a paper on the topic of “An analysis of causes of disputes in the construction industry using analytical network process”. Literature review was the primary source of data that identified seven broad categories of construction disputes having 28 common causes. The study found that the ‘contractual problems’ is an important cause of disputes in the construction industry. The study also unveiled that the least common dispute causes were project related and human behavior related dispute.

Nigel Preece et. al (2013) studied on the topic of “Evaluating the effectiveness of mediation and arbitration processes in resolving disputes in the Malaysian construction industry” with an aim of examining the effectiveness of arbitration in resolving disputes of construction industry in Malaysia, extending the impact on three factors: cost, time and outcome of projects. The research

methodology was quantitative using questionnaire as an instrument for data collection. Out of 100 questionnaires distributed in three clusters mediators, arbitrators and contractors at the ratio of 42:38:20; only 50 % responded in a ratio 15:17:18 respectively. The study concluded that the mediation process is an amicable, most effective and rational way for achieving settlement negotiated between the parties and is the best way to achieve a win-win resolution maintaining the professional relationship among parties.

Bvumbwe and Thwala (2011) studied on the topic of “An exploratory study of dispute resolution methods in the South African construction industry”, to evaluate the dispute settlement methods practiced focusing on the construction industry. The study emphasized that being cheaper and quicker alternative to the litigation the ADR do not easily lead to a breakdown in the professional relationship among parties. Since a diversified interests, actors and procedures need to complete a project, the chances of dispute are significant (Gould, 1999), cited in the article. The methodology used was survey questionnaires both, close-ended and open-ended, and interviews with experts of the construction industry. A total of 30 of 70 questionnaires were returned, with the rate of return 66 %. A total of 40 interviews were conducted making 61 % response rate. The study concluded that for ADR to be effective in construction industry, competence of the arbitrators is key factor.

The article on the topic “Resolution of construction dispute: a review of current methodology” by Harmon (2003) confirms that even though there might be situation in which avoiding litigation could be costlier than engaging in it (Meyer 1984; Arditi et al. 1998), many experts including Construction Industry Institute (CII) 1995, believed that litigation is especially in appropriate for resolving disputes in construction primarily due to two reasons: future works may depends on present and former business relationship, mainly with a private or non-governmental organization and the complexity of technical and financial issues associated with construction disputes. Therefore, knowledge and competency of the decision makers on the construction related dispute is important. It is important to note that once the dispute is handed over to a third party who may have little knowledge of construction industry the control is lost, cited Tolle et al. 1990.

Fenn et. al. (1997) performed a study on “Conflict and dispute in construction” with a conclusion that the study of the disputes in the construction industry is crucial so that an effective action can be taken based on reliable evidence as there was finding that some contracts develop more disputes

in compare to others. The methodology used was survey following the review of cases. The study deployed a massive scale questionnaires survey distributing to 1200 professionals and total 257 valid questionnaires were studied.

Coulson (1983), in an article “Dispute management under modern construction systems” concludes that highly skilled and experienced arbitrators are required for an effective dispute resolution mechanism and a responsible representative of the parties can make the arbitration work effectively. Importantly, the arbitration has the ability to deliver immediate and affordable justice.

2.5 Arbitration Practice in Nepal

Although the use of arbitration as a form of ADR is progressively expanding in Nepal, there is not much long formal history of its practice. Acharya (2018) claims that the formal history of arbitration practice began with the introduction of an arbitration provision during the amendments of the development board Acts in 1957 AD. Consequently, arbitration became a recognized method of resolving disputes under other acts including the Commercial Act of 1974 AD and the Nepal Airlines Act of 1962 AD (Karki, 2015) as cited by Acharya, 2018.

Arbitration Act 2038, 1981, was the first formal arbitration law of Nepal which was later repealed by Arbitration Act 2055, 1999, the principal and existing arbitration law of Nepal. The article 58-4 of the PPA 2007 of Nepal has established arbitration as a standard dispute resolution procedure for procurement contract disputes involving construction work. The PPR 2007 has detailed the provision under chapter 12.

There are several ADR methods to settle disputes ranging from negotiation to arbitration and lawsuit. Majority of the construction disputes in Nepal are settled amicably. When it comes to the arbitration, there are two types of arbitration proceedings (United Nations, 2005): ad-hoc and institutional (administered) arbitration. Without the institutional oversight of a recognized arbitral organization, the ad-hoc arbitration is managed independently. In contrast to institutional arbitration, parties establish the process for choosing arbitrators on their own. The rules and procedures are defined by the parties, who also bargain and agree on the arbitrators’ remuneration. An organization serves as the conduit between the parties and the arbitrators in institutional arbitration and the arbitral process is organized by an established institution.

The Nepal Council of Arbitration (NEPCA) was established, in 1991, to address national and international contractual disputes of a development, construction, or other nature that are to be resolved by arbitration. As stated in its 30th annual report, despite the fact that it has established necessary provisions for the institutional arbitration to make the dispute resolution systematic and trustworthy, ad-hoc arbitration is primarily used for dispute resolution in Nepal.

2.5.1 Nepal Council of Arbitration (NEPCA)

The NEPCA is administered by the Statute of NEPCA and the Arbitral Procedures Regulations (APR) of Nepal Council of Arbitration, 2072 (2016), also known as NEPCA Arbitration Rules.

According to its Statute (1991), NEPCA is a self-governing institution that was established with benevolent objectives. The primary responsibility of the NEPCA is to swiftly and affordably administer alternative dispute resolution procedures, notably arbitration. As such, NEPCA does not participate in case decisions; rather, it facilitate a list/roster of candidates from whom the parties mutually choose impartial arbitrators. NEPCA claims that it offers administrative services for arbitrating various types of disputes at affordable fee. An overview of the primary objectives, as stated in the statute of the NEPCA (2048), 1991, is summarized below:

- To initiate, promote, safeguard, and institutionalize activities pertaining to arbitration and other ADR processes, in Nepal.
- To study, analyze, and research existing laws and regulations focused on arbitration in order to make recommendations for their regular amendment and development.
- To plan and oversee the provision of the necessary facilities, services, and tools for the resolution of disputes of a national and international nature that arise within boundary of Nepal and are to be handled by arbitration with the assistance of NEPCA.
- To maintain relationships with people and organizations engaged in different professions and businesses in order to prepare a roster of qualified arbitrators.
- To draft arbitrators' code of conduct and establish an ideal condition for implementation.

According to Aryal et al. (2018), NEPCA's arbitration procedures are set up in accordance with international standards, and it maintains a comprehensive list of its panel of arbitrators. Arbitrators' decisions are legally binding and enforceable, and the process is governed by a set of rules and

procedures. Graduates who have participated in arbitration related activities are eligible to be participated as a member of NEPCA. There were total of 60 registered panel members in NEPCA as of Sep. 17, 2022. The NEPCA is currently located at Kupondole in Lalitpur along the Bagmati corridor as per article 4 of the Statute of the NEPCA, 1991.

2.5.2 Achievement of NEPCA

The 30th annual report details that 30 cases out of total 97 active cases were resolved using both arbitration and adjudication in the FY 2077/78. A total of 25 out of 30 were resolved by arbitration. A summary of last three years achievement is presented in the Table 2-1.

Table 2-1

Achievement of NEPCA for last three years

Fiscal Year	Description	No of Cases		
		Active ^a	Resolved	
			Both ^a	Arbitration
2077/78	Number of cases	97	30	25
2076/77	Number of cases	48	28	24
2075/76	Number of cases	61	30	20
	Total	206	88	69

Note. Source: annual reports of NEPCA. Majority of the cases were on construction contract related disputes.

^a The data include cases related to both Arbitration and Adjudication.

During the preliminary review of the literatures available, it is noticed that despite the achievement claimed, as in the Table 2-1, there are several other issues to deal with the effectiveness of the arbitration process. While, the success for NEPCA as an organization may simply be based on counting the number of completed cases under its jurisdiction, the effectiveness of the arbitration, in reality, depends on how the disputed parties and other stakeholders, including the arbitrators themselves, view the final decision of the tribunal in terms of time efficiency, cost effectiveness and quality of award which implies acceptance of the finality of the award.

2.6 Legal Provision of Arbitration in Nepal

The arbitration process in Nepal is governed by the Arbitration Act 2055 (1999). The NEPCA is regulated by the Arbitral Procedures Regulations of NEPCA, 2072 (2016). These documents provide pragmatic guidelines on arbitration process. The clauses of AAct (1999) and NEPCA Regulation (2016) are referred as ‘Section’ and ‘Rule’ respectively in this report.

The AAct (1999) has clear provisions on disputes to be settled through the arbitration. If an agreement calls for the arbitration of disputes, any dispute relating to it or to matters covered by it must be resolved by arbitration in accordance with the rules outlined in that agreement, if any, or, by AAct. With the assistance of the parties, the tribunal shall prescribe the procedure not specified in the Act. The Act forbids the submission of non-arbitral disputes for arbitration (Acharya, 2018).

An arbitration process embarks with one or both of the parties initiating the process by intimating the authority, as per agreement, for appointment of arbitrators (Rule 10) and ends with giving final award by the arbitrator(s). Arbitrators are required to provide opportunities for claims, counter-claims, rejoinders and case hearings immediately upon the appointment or the submission of the dispute in cases where the arbitrators are already designated in the agreement (Acharya, 2018). And according to Section 24, the arbitrator must normally issue their ruling within 120 days of the day the documents were submitted. According to Section 14-5, when presenting claims, counterclaims, objections or rejoinders, all supporting documents and evidence must be supplied.

The Rule 29-1 instructs the tribunal to prepare terms of reference, specifying the duties to be covered by the arbitrators, in the presence of the concerned parties. Rule 30 details the need of dispute management meeting on preparation and approval of procedural measures for arbitral proceedings. The APR of NEPCA requires the parties concerned to make commitments to abide by any order issued by the arbitrator (Rule 24-6) as the decision shall be binding to the parties (Rule 49-5). There is provision for any party, dissatisfied with the award to challenge the decision in the appellate court (Section 25-3). If incase an award is not executed within 45 days (Section 31), the district court, on the petition by the concerned parties, implement the award as if it were its own judgment (Section 32). This clause demand highly competence of the arbitrators.

Section 10 describe academic qualification, knowledge and skills as prerequisite to become an arbitrator. Individuals lacking the necessary qualification, including having excellent technical and functional skills, are disqualified, (Section 11-f). Competence in language to understand and interpret contract documents correctly is important (Section 18). The Rule 54 stipulate Nepal law as the applicable substantive law. Impartiality, honesty, neutrality and independence are the key competence that the appointed arbitrator has to take oath before starting the proceedings (Sections 9, 11 and 22, and Rules 21 to 23 and 25). Arbitrator should not be biased toward or discriminated against any party. Arbitrator should not commit fraud and irregularities in the course of arbitration. The arbitrators are to follow the principles, ethics, and code of conducts and rules of natural justice. Importantly, regarding the case to be arbitrated, there shouldn't be any conflicts of interest affecting the arbiter. By treating all parties to a dispute equally, the arbitrator should be able to provide them all an equal and adequate opportunity to present their pleading, argument, rebuttal and supporting evidences. The arbitrator and the parties concerned shall make every effort to conduct arbitration in a quick and frugal manner (Rule 24-2).

Regarding the size of the tribunal, it must be odd and must be three (Section 5). In contrast to the AAct, the Rule 15 recommends, if not otherwise specified in the agreement, the dispute be heard and resolved by a single arbitrator. While the AAct has assumed the possibility of more than three arbitrators (Section 17-4), the regulations of NEPCA, has made provision to form a tribunal of up to three arbitrators. The process of appointing arbitrators must begin no later than 30 days after the event for the settlement of a dispute through arbitration arises (Section 6). The freedom to select arbitrator(s) primarily rest on the parties.

The parties involved have to deposit the costs associated with the arbitration, as an advance, which in case of no hearing or not completing the proceeding to be refunded (Sections 35 and 36-2, and the Rules 24-1, 58 and 59). The total cost to be fixed by the arbitrator in consultation with parties. While the basis of the administration cost and the remuneration of the arbitrator is the claim amount (claim value), the arbitrators are given flexibility to determine the fee and other costs not exceeding as per the guidelines (Rule 58) taking into account the nature and complexity of the dispute, condition of the parties and the circumstance at the time. The total cost is scheduled in such a way that if the claim value is less, the sum of administrative fee and remuneration is higher.

The Rule 31-1 guides arbitrator to consider the amount claimed in damages as the basis in determining the case management measures. The objective of the case management measures is to control time and expenditure (Rule 31-3). The Rule 31-2 specifies that in case of less complex and low-cost dispute, the time and cost of arbitration shall be adjusted in proportion to the amount in dispute. According to the Rule 33, the case management meeting, procedural timetable, and case management measures are not required to be followed when resolving disputes involving claims for 30 million rupees or less or claims involving issues of principle.

When the tribunal makes a decision, reference to the documentation is crucial. The rule 31-3-c, gives priority to the document-based evidence over the oral evidences, legal arguments and pleas. According to Rule 46-2, the arbitrator must render a ruling based on facts and evidence after gathering all necessary evidence. The AAct, 1999 and the NEPCA Regulations, 2016 have provided numerous opportunities to present the evidence and witnesses. The arbitrator has the authority to order the parties to provide documents and record their statements as needed, to record witness statements, and to inspect the location to inspect the concerned location and other related items connected with the dispute. According to section 14-5, each party must present all relevant supporting documentation and must include the names of any witnesses they intend to use to corroborate any claims together with their claims, counterclaims, objections or rejoinders. As discussed under Rule 24-5, the arbitrator ensures that each party has an equal opportunity to present evidence and written documents to support or rebut the dispute. The Rules 26 has provision for the exchange of documents among the parties, arbitrator and the secretariat of the council.

2.7 Research Gap

The most important aspects to take into account for the successful completion of any construction project are performance on schedule, cost, quality and dispute resolution (Mishra et al., 2021). Dispute is ever raising in construction industries. Dispute, therefore, is one of the major factors (Cakmak & Cakmak, 2014) for the success or failure of construction projects. The earliest and most cost-effective resolution of disputes is crucial for business entities. Disputed parties are concerned about the overall effectiveness of the arbitration. Parties do not go to arbitration just for the sake of going there, but expect to have quality resolution in resolving their disputes in economic and swift manner.

Normally, once the arbitrators give final award that is supposed to be binding to all the disputed parties. Unfortunately, there are several cases that have not resolved even after giving the final award. Many of the cases have gone to the court prolonging the dispute settlement. The challenging in Nepal is that the majority of the disputes are resolved in court or out of court by mutual accord, even after arbitration, by disobeying the awards and decision of the arbitrators (Aryal & Dahal, 2018). There is lack of enough studies to know why such situation is prevailing in Nepali arbitration? There is gap to know whether it is the effectiveness of the arbitration practice.

The essence of this study is that, despite the growing interest and importance of the arbitration, there still remains lack of awareness about important elements that really matters on the effectiveness of the arbitration. There is gap in the literatures studying the effectiveness of arbitration practices in Nepal and the influences of the key dispute factors under discussion.

Further, as stipulated in the Regulation of NEPCA (2016), there are four different categories of fee schedule for the remuneration of arbitrators. The total cost of arbitration includes the remuneration of arbitrators and the administrative cost of NEPCA. The variation on the remuneration is significant which is based on the claim values, number of the arbitrators and the nature of the contract. However, while reviewing the literature it is realized that there is a gap in knowledge whether the claim value influences the effectiveness of the arbitration. Therefore, this study has tried to fill the above-mentioned gaps to understand the existing situation of arbitral effectiveness in a better way.

2.8 Conceptual Framework

According to Grant and Osanloo (2014) the theoretical framework serves as a research's blueprint or direction. It serves as the foundation upon which a research is constructed. Conceptual framework is framed using theoretical principles, concepts, constructs, and tenets of a theory.

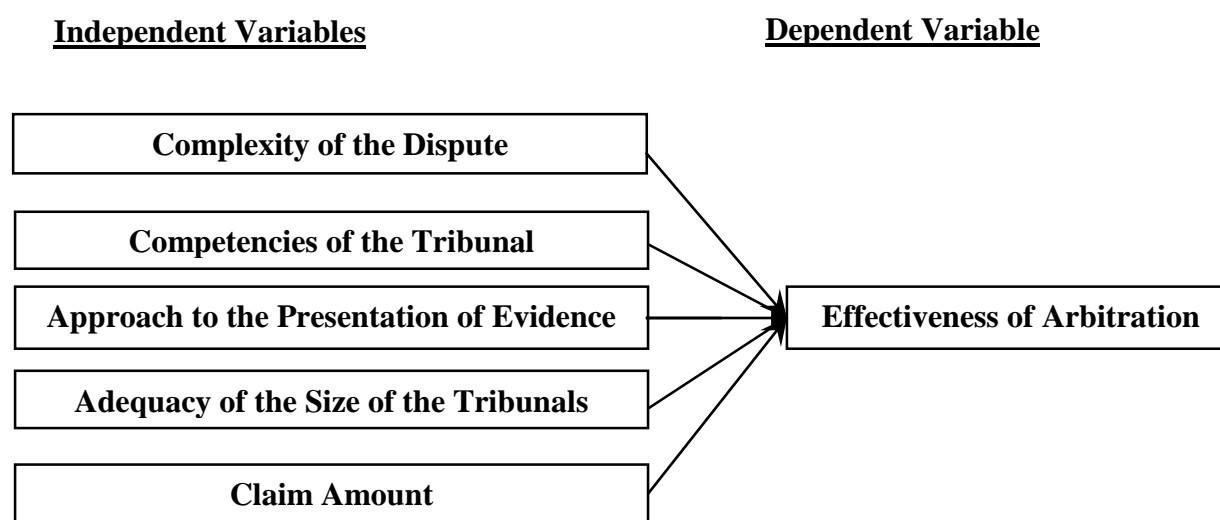
Scholars distinguish the conceptual framework from the theoretical framework. While a theoretical framework is based on existing theories already tested and validated by others, the conceptual framework is the understanding of researcher of how the research problem is best be explained, the specific path the study will have to follow and importantly relationship between the different variables including dependent and independent.

2.8.1 Conceptual Model

The conceptual model, The Figure 1, is designed based on various studies. This study explains the factors that have affected the effectiveness of arbitration practice in Nepal.

Figure 1:

Conceptual Framework



Source: Constructed by the researcher based upon Abwunza et. al. (2021) and Moza et. al.(2017)

2.8.2 Operationalization of the variables

For the development of a clear understanding on the operationalization of the dependent and independent variables used in the conceptual model, they are defined and discussed in detail.

a. **Dependent Variable:**

- i. **Effectiveness:** Effectiveness is the degree to which objectives are achieved and the extent to which targeted problems are resolved. It is achieving the societal expectations of the immediate need. The effectiveness of an arbitration process is a multi-dimensional construct consisting of its cost, time and quality of award, which can be assessed using both objective and/or subjective measures, Abwunza et al. (2021). The indicators are described below.

- **Cost Effectiveness:** The cost is the total expenditure required to make in order to complete the dispute resolution using the arbitral process. Cost is the price that must be paid to achieve the objective and this price can and should include intangibles like distress or discomfort (McCormick 1981). Rule 24-2 guides for the need of frugal manner of the arbitration. Rules 3, 44-9, and the chapter 6 of the regulation describes the provision on the expenditures including fee for arbitrator and administrative cost. For this study, the cost effectiveness is assessed using both objective and subjective measures. The objective measure of cost is the actual cost incurred by the claimant as a percentage of the claim awards (also known as total cost to award ratio). Subjectively, the cost is measured in terms of opinion on expectation and reasonableness of the cost, as used by Abwunza et al., 2021.
- **Time Effectiveness:** Time is a valuable asset and has value of money. It is the duration required for an arbitral procedure to be completed. AAct (1999) considers 120 days as a standard time to deliver the award from the date of submission of documents and Acharya (2018) interpreted as from the date of submission of application. Rule 24-2 of NEPCA guides for the need of quick manner of the arbitration. Like cost, the time efficiency is also assessed using both objective and subject measures. The objective measure of time is the actual time taken to award. Subjectively, the time is measured in terms of opinion on expectation and reasonableness of the duration, as used by Abwunza et al., 2021.
- **Quality of Award:** Quality is the degree of excellence. The form of the outcome as detailed in statutory instruments is the objective measures of the quality of award (Abwunza et al., 2021). However, this study uses only the subjective measures of quality of award taking opinion on willingness of parties to accept award (Gross & Black, 2008) voluntarily, to maintain the working relationship (Besaiso et al., 2018; El-Adaway et al., 2009) and to refer future disputes to the arbitration (Brockner & Wiesenfield, 1996; Gross & Black, 2008) as cited by Abwunza et al., 2021.

b. Independent Variables:

- i. **Complexity of the dispute:** The complexity of the dispute refers to the level of difficulties in resolving a dispute. The major indicators are complexity of a contract documents and the number of sittings (Abwunza et al. 2021). Further, the rule 28 of APR of NEPCA, 2016, describes the provision of language. Construction contract commonly have several parties. The

cultural diversity in the construction community is inevitable. Therefore, in this study the impact of complexity of the dispute on the effectiveness are assessed as respondents' opinion on the complexity of the contract documents; language barrier; cultural differences among the participants; number of parties involved and the number of sittings.

- ii. Competency of the Tribunal:** Abwunza et al. (2021) quoting Hager and Gonczi, 1996, describe the competency of the tribunal as its capability to enable satisfactory completion of the task. Growing demand of arbitration requires competent team to timely settle disputes. Arbitrators are expected to possess specialist technical and legal knowledge together with functional and interpersonal skills which includes the experience combined with the ability to fairly, impartially and independently hear a dispute before issuing a legally binding award. The term knowledge in arbitration refers to the expertise in the subject matter and legal knowledge (Lane, 1997; Schultz and Kovacs, 2012) and skills are the real conduct expressed in the quest to accomplish goal (Spitzberg, 2003), quoted by Abwunza et al., 2021. Rules 21, 22 and 23 of the APR of NEPCA (2016) has provision for the need of impartiality, neutrality and independence of the arbitrator. Therefore, the influence of competence of the tribunal is assessed in terms of the participants' opinion on the knowledge, skills of the tribunal and the ability to remain fair, impartial, independent and neutral.
- iii. Adequacy of the size of the tribunal:** The number of arbitrators making up the panel is considered to be an adequate measure of its size. A tribunal may be formed by a sole arbitrator or, in the case of a multi-member tribunal, by more than one arbitrator. For complex disputes, multi-members tribunal are used to strengthen the tribunal's competence (Harmon, 2004) as cited by Abwunza et al., 2021. Therefore, the influence of adequacy of the size of the tribunal on the effectiveness is assessed as perceived adequacy of the size of the tribunal.
- iv. Approach to the presentation of evidence:** It refers to the numerous methods used by the disputed parties in gathering and presenting their respective evidences. The strategies to the presentation of evidence depend on various factors including complexity of the dispute, how the tribunal guides the disputants including completeness of the documentation, size of witnesses and the choice of presentation procedures (Ennis, 2013; Galloway, 2012; International Chamber of Commerce, 2014; Risse, 2013; Torgbor, 2013) as cited by Abwunza et al., 2021. Therefore, the influence of the construct on the effectiveness are subjectively accessed in terms of opinion of the respondents on the number of experts and fact witness

presented; choices of the techniques; assistance received from the tribunal, carefulness of documentation and the equal opportunity provided by the tribunal.

- v. **Claim Value:** The APR of NEPCA (2015) defines a claim as a demand made by one party from another party. It is also known as amount in dispute which is defined as the claim or counter claim made by one party from another party in order to compensate the party for incurred damage. The APR of NEPCA, under rule 33 has special provision for the low claim amount dispute. The rule considers claims for 30 million rupees or less or claims involving matter of principle in which the amount is not specified as the low claim value disputes. Further, the administrative cost as well as the arbitrators' fee of the arbitration depends on the claim value. The influence of the claim value on the effectiveness is assessed taking participants opinion on the complexity based on claim value and the comparing the effectiveness of low and high value claims.

2.9 Overview

The arbitration process is voluntary and consensual, the principle of arbitration has focused on three indicators cost, time and quality of award for an arbitration to be effective on an amicable settlement of a dispute. Effectiveness of arbitration does not simply mean the resolution of dispute only, but a continuation of the construction projects that may have economic, social and sustainable impact on the society. Therefore, provisions have been made under the PPA 2063 of Nepal to use arbitration as an ADR mechanism. NEPCA has been practicing arbitration in Nepal and has made public its achievements. The conceptual framework of this study is focused on the influence of the five key factors: complexity of the dispute, competence of the tribunal, adequacy of the size of the tribunal, approaches to the presentation of the evidence and the claim value on the effectiveness of arbitration practiced in Nepal.

Chapter 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology and conceptual structure adopted to assess effectiveness of the arbitration procedures in Nepal in resolving the construction contract related disputes. Starting with the philosophical foundation, this chapter describes the research design, the study population and sample, methods used to collect data and the procedures and techniques of data analysis including ethical considerations.

3.2 Philosophical Foundation

The two essential elements of philosophical foundation, epistemology and ontology, have guided this research. The study is based on the empiricist epistemological stance that entails the concept of objectivist / realist ontology, therefore uses a positivist worldview of the research philosophy.

In the positivistic approach, existing theories are used to develop the research proposition and hypothesis. Positivist worldviews are intended for theory testing (Bhattacharjee, 2012), therefore the approach used is deductive reasoning – a powerful tool used in drawing logical conclusions based on logical premises normally assumed to be true. This study is an explanatory research with an aim to understand the effectiveness of arbitration of Nepal more clearly.

The choice of this study is sequential explanatory mixed-method, a combination of qualitative and quantitative research data collection and analysis in the research study (Creswell, 2014; Ivankova et al., 2006). The study was designed for descriptive as well as analytical research which primarily uses quantitative research methods and explains the results with the finding of qualitative research in two consecutive phases within a study. The purpose of deploying sequential mixed methods was to counter balance the weakness and bias of different methods (Creswell, 2014), which is known as triangulation.

The sequential steps adopted to study a problem with given objectives is referred as research methodology (Kothari, 2004). Research methodology is a systematic approach of solving research

problems. It gives guidelines in the journey of research from identifying problems to drawing conclusion that is expected to add new knowledge. Therefore, methodology is a theoretical basis of whole research procedures, which is further detailed below.

3.3 Research Methods and Design

The main aim of this study was to find a realistic information that describes and infers the effectiveness of the arbitration process in Nepal. The research methods and designs are interlinked in a spiral order. The choice of a research method determines the research design and the subsequent steps of the research follows the methods prescribed as per the research design. The research method is used to implement the research plan developed as part of the research design effectively. Therefore, an effective research design is important to ensure that the data obtain are useful in answering the research questions effectively. Ultimately, both research design and method are helpful for the purpose of making informed decisions. Denzin and Lincoln (2011) called the process strategies of inquiry (Creswell, 2014).

According to Bhattacharjee (2012), a comprehensive work plan worked-out for data collection in an empirical research project is research design, which requires at least three elements: the data collection process; the instrument development process, and the sampling process.

3.4 Source of Data

This study was conducted using both primary and secondary data sources. The main sources of data were the NEPCA, its stakeholders and publication, and stakeholders of construction industry including clients, contractors, arbitrators, engineers, lawyers, financial experts etc. Since the construction industry was complex by nature involving experts, skilled and unskilled human resources, determination of the key respondents was essential to ensure truly powerful insights and the most relevant information were collected.

3.4.1 Population

Population is the complete group of people, events or the things in the field of inquiry (Kothari, 2004). Considering the facts that the construction dispute resolution is a very specialized field with a very little population of potential respondents who have the necessary expertise and experience to make informed statements (Gill, Gray, Skitmore, & Callaghan, 2015, p.5.) as cited in Bahemuka (2021), the theoretical population of this study was carefully estimated. Initially, the population was divided into two strata: disputed parties, mostly organizations involved in disputes, and the arbitrators, individual experts. The disputed parties were further divided into two strata: clients and contractors, to ensure that all the targeted populations are covered by the study.

According to the data received from the annual report and verified from the NEPCA, the total number of panel members was 60. Similarly, as of Sep 10, 2022, a total of 1,818 construction companies (Class A: 292, B: 305 and C: 1221) were listed as registered companies on the official webpage of Ministry of Physical Infrastructure and Transport but only a total of 245 (Class A: 140; Class B: 49; Class C: 44 and Class D: 12) companies were associated with the Federation of Contractor's Association of Nepal (FCAN). After the preliminary consultation with the experts, it was noted and concluded that only a very few construction companies possess relevant experience in the field of construction contract dispute resolution using arbitration. Therefore, to determine the population, cases resolved in the last three years using arbitration by NEPCA were analyzed.

The Table 2-1 (p24) summarizes the officially recorded disputes which were abstracted from the annual reports of NEPCA. After an in-depth analysis of the cases, the population of the parties involved in the dispute registered at NEPCA and resolved in the last three years was estimated to be about 120. Therefore, a total of 180 was estimated as targeted population. Other experts who provided required information were also considered as part of the population.

3.4.2 Sampling Design

Sampling is a statistical process of choosing a subset of a population of interest for the purpose of making observations and drawing conclusions about the population (Bhattacharjee, 2012). The sampling frame, listing of the accessible population, was received from reports produced by NEPCA. Thus, the parties to the dispute and the arbitrators involved in settling it were the subjects.

Sample Size

The number of objects to be chosen from the population to make up the sample is known as sample size, which should be neither too large nor too small. A conscious consideration was paid on to ensure the requirements of efficiency, representativeness, dependability and flexibility (Kothari, 2004) are optimally met by the sample size. The researcher was also well aware on the possibility of quality and accuracy of research to be influenced by inappropriate, insufficient, or excessive sample size (Bartlett II et al., 2001), therefore, before coming to a conclusion in determining the sample size, a rigorous exercise on literature review was performed and different methods were utilized for the validity of the study. The summary is presented below:

- a) Sample size determination by using criteria: (Uakarn et al., 2021) recommends 15% to 30% of sample size for hundreds of populations. This gives the range of sample size between: 27 (180* 15 %) to 54 (180 * 30 %).
- b) Sample-to-variable ratio (Memon et al., 2020): This method suggests a minimum observation-to-independent variable ratio of 5: 1. For 5 independent variables, minimum observation is 25. The recommended ratio is 15 to 20 observations per independent variable. Considering 15 observations per variable, the recommended observations is 75.
- c) Use of the formula given by Cochran, 1963:
$$n = \frac{\frac{Z^2 * p(1-p)}{e^2}}{1 + \left(\frac{Z^2 * p(1-p)}{Ne^2}\right)} = \frac{p(1-p)}{\frac{e^2}{Z^2} + \left(\frac{p(1-p)}{N}\right)}$$

Where, n = Sample size; N = Population size; Z = Critical value of desired level of confidence; e = Margin of error / desired level of precision, and p = Maximum probability of variation in the distribution, which is normally assumed 0.5 value as it gives the maximum number of sample size.

Considering the nature of the problem, the researcher expected to use the sample size at 95% confidence (Z = 1.96) level and 5% of margin of error. Estimated population proportion (p) is considered as = 0.67. Therefore, the sample size is:

$$n = \frac{\frac{1.96^2 * 0.67(1-0.67)}{0.05^2}}{1 + \left(\frac{1.96^2 * 0.67(1-0.67)}{180 * 0.05^2}\right)} = 117.4517 \approx 118 \quad (\text{And at } p = 0.5, n = 122.168 \approx 123)$$

- d) Use of Taro Yamane (1973) formula (Uakarn et al., 2021) and Slovin (1960)'s Formula (Adhikari, 2021): $n = \frac{N}{1+Ne^2}$

Where, n = sample size; N = Population size; e = error (0.05) reliability level 95%

$$n = \frac{180}{1+180*0.05^2} = 124.1379 \approx 125$$

- e) Use of Krejcie and Morgan, 1970 Table: The sample size of 123 is recommended for the population size of 180.
- f) Use of thumb rule: according to Sudman (1976) a minimum of 100 observation is recommended for a group in the sample and for a minor group a sample of 20 to 50 observation is preferred (Puszczak et al., 2013).
- g) Use of guidelines recommendation by Roscoe (1975): As cited by (Memon et al., 2020), a sample size greater than 30 and less than 500 is apposite for most behavioral studies and the size equal or greater than 30 can be considered sufficient to hold the Central Limit Theorem (Chang et al., 2006). The guidelines were further fortified by Altunisik et al., 2004, claiming that at 5% level of confidence a sample size between 30 and 500 is commonly sufficient and Yildirim and Simsek, 2006; Baykul, 1999; Ross, 2004 appealed that this range of observation would be the necessary for parametric tests (DelÍce, 2010).
- h) Using the sample size as those of studies similar to the discipline: Davies, Williams and Yanchar, 2004 (as cited by DelÍce, 2010) suggested that researcher are required to consider the research topic, population and sample size in similar research to determine the sample size. As presented under section 2.4 of literature review chapter, there were as little as 20 observations (Dugane et al., 2018) used for a study.

Despite widespread belief that a larger sample size results in increased exactitude, plentiful of researches have proclaimed improvement is minimal. Therefore, a larger sample size may not necessarily result in a higher estimated precision (Puszczak et al., 2013). For this reason, this study considered 120, using thumb rule, as its sample size for data collection. Three additional samples, two representing disputed parties and one arbitrator, were further selected for an interview.

Sample Selection Method

Since, there were more than one unit of observations, the study used the stratified sampling method. To ensure that the data were collected from both the representative of disputed parties and arbitrators (experts), the sample size was divided into 2:1 ratio between the parties and arbitrators respectively. The sampling frame was clearly divided into homogenous and non-overlapping group as suggested by Bhattacharjee (2012) and a simple random sample was drawn for arbitrators strata. Considering the limited number of client organizations and the challenges to identify the right samples from construction companies, the sample were selected conveniently. Further for the collection of qualitative data using interview, three samples, each representing client, contractor and arbitrator were conveniently selected. Since, this was the most appropriate method, the researcher was careful enough to ensure only credible subjects participated in the study.

3.4.3 Data Collection Process

As a positivist worldview was adopted, both quantitative and qualitative data were collected for the theory testing purpose, using a combination of techniques / instruments. Primary data for quantitative research were collected using structured questionnaire and for the qualitative research data were collected in two phases, initially using open-ended questions as structured written interviews followed by unstructured interviews. The questionnaires and open-ended questions for structured written interviews were prepared and made available together to all the targeted samples for online, offline or hardcopy response. All the subjects were given equal opportunities to respond on the close-ended survey questionnaires as well as to the open-ended written interview questions.

The questionnaires were personally and electronically administered. A total of only ten questionnaires were distributed physically. Given that the subjects were from different location all over the country, majority of the selected subjects were contacted by phone calls and followed up by emails and short messages. The questionnaires link for online survey was distributed to the participants using electronic media. Available information technology was utilized at its best to share the questionnaires and collect the data. The primary data using the questionnaires survey, for both quantitative and qualitative research, were collected during the period from Sep 10th 2022 until the mid-night of Oct 1st 2022. All the subjects were well informed on the date of the survey

and closure time. The participation was completely voluntarily. The time horizons considered for the study was a cross-sectional.

The secondary data for quantitative research were collected using the annual reports of NEPCA. The researcher physically visited the NEPCA secretariat couple of times and collected annual reports, journals and other relevant information. Additional relevant information were collected using other various reports, publications, newsletters, journals, Acts and regulations published by governmental and non-governmental organizations. Some of the information were retrieved from the concerned websites.

Once the preliminary analysis of the primary survey and secondary data for quantitative research were performed, an unstructured interview, the second phase of qualitative data collection, was conducted with the selected three experts in second week of Oct 2022.

3.4.4 Instrument Development Process

The primary instruments used to collect the data were close-ended questionnaire survey for quantitative research and open-ended structured written interview questions for qualitative research. According to Bhattacharjee (2012) questionnaires are a series of structured and/or unstructured questions which are intended to collect responses from samples in a standardized manner and he further adds that an interview is a tailored approach of collecting data that adheres to the similar standards of research etiquette as questionnaire surveys.

A set of questions was developed to ensure that the collected data answer the research questions and meet the objectives of the study. Extensive variety of available literatures relevant to the subject were thoroughly reviewed. The questions were carefully developed primarily based on the existing literatures, practices in the research area and objectives of the arbitration to ensure the validity of the study. Similarly, the structured written interviews (open-ended) questions were developed. As part of pre-testing to ascertain whether the questionnaires were clear, unambiguous and relevant, two experts were consulted. The final set of questions was finalized incorporating appropriate correction before mass dissemination.

The questionnaire was designed into four parts. First part was related to demographic information, developed expecting to accumulate the information on eleven different demographic fields including gender, age groups, experience, education etc. of the respondents. Appropriate scales were used to collect the data. A total of twenty-two substantive questions on second part were on the different independent variables under study. The third part included total eight questions related to the indicators of the effectiveness of arbitration: cost, time and quality of the award, expecting to collect the fundamental information on the topic. Under part four, each of the respondents were given seven structured open-ended questions developed in line with the independent and dependent variables. Research questionnaires have been attached as Appendix C.

While developing the questionnaires, a five-point Likert scales method was used. In view of experts, the neutral point increases the central tendency bias (Westland, 2022) and is most challenging to locate and even to interpret (Altunay & Yilmaz, 2021). Therefore, after an extensive review of literatures and consultation with the experts, a commonly used 'Neutral' scale was removed and 'Don't know' option was included to ensure that firmed and concrete information are collected. Further, the researcher was aware of the possible response order effects (Chyung et al., 2018) hence to minimize the primacy effects, left-side selection bias, acquiescence bias and social desirability bias, the five point Likert scales was used in ascending order ranging from 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly Agree* and 5 = *Don't know*.

3.5 Data Presentation and Analysis

The quantitative study was performed using descriptive as well as inferential analysis. A rigorous exercise was done for an effective preparation, presentation and analysis of the data. MS Excel and the Statistical Package for Social Science (SPSS) were used for the data management. As soon as the complete responses were collected, the raw data were compiled, organized and tabulated using MS Excel. The responses to the negative questions were reversed. Data were compared and crosschecked for the accuracy and validity based on the conditions detailed under section 3.6. The valid primary data, then, were separated into two categories based on quantitative and qualitative study need as guided by the sequential explanatory mixed-method design. The valid quantitative data, including the secondary data, were then coded and recorded in SPSS systematically. The 'Don't know' rating was recorded as system missing before analyzing the data using SPSS.

Very few responses and secondary data, which were not very clear, were edited for consistency of the information. For example, to estimate the fee for the arbitrators, construction contracts with value up to NRs. 2 billion were considered as NCB nature and above as ICB nature as guided by the PPR prior to its 11th amendment in early 2022. Similarly, though it is most likely that the fee could be negotiated, for this study the maximum fee as determined by the Regulations of NEPCA was considered for analysis. Some of the respondents were contacted for further clarification and additional information. Few of the partially incomplete responses were still being used, ignoring the missed and not responded data during the analysis using MS Excel and SPSS.

Likert-scales were computed by taking an average of responses to the associated Likert-type items respectively for each of the variables. The Likert-type data are ordinal data and the Likert scales are different than individual Likert-type items (Guerra et al., 2016). Therefore, the researcher was vigilant to use the appropriate and justified statistical tools for the analysis. The scattered dots of the available data were closely following the normal Q-Q plot for all the variables, hence the data were assumed as normally distributed, though statistically the normality was rejected.

Further, the researcher reviewed numerous relevant articles and came through several recommendations, controversies, misunderstanding and contradicting information in using correct statistical tools and techniques. Statistics using parametric analysis are reliable despite the violation of the assumptions made on the sample size, normality requirement and the type of data (Norman, 2010). It is also notable that statistical methods do not always require precise scale qualities of data (Gaito, 1980) and therefore the parametric analysis can be used, without hesitation, for the scores received by summing responses on more than a single Likert-type item (Carifio & Perla, 2008). Similarly, according to the research finding by teams of Minitab Inc., the influence of non-normality on the test's error rates is negligible for sample sizes as little as 20, and a sample size of roughly 40 is advised if the parent population is highly skewed (Minitab, n.d.).

A pragmatic approach, suggested by Guerra, is to use parametric approach with Likert scale and non-parametric approach with Likert-type items. Therefore, both parametric as well as non-parametric analysis were being used as appropriate in this study. Statistical analysis was performed for quantitative data and manual thematic analysis was performed for the qualitative data.

Frequency distribution, percentage, measure of central tendency, and variation were used for descriptive analysis. One sample *t*-test, ANOVA test and correlation were performed for inferential analysis. The study has adopted a hypothetical population mean value of 2.5 corresponding to the mid-point in valid 4-point Likert scale, after removal of 'Don't know' scale. A *p*-value less than 0.05 implied a significant difference between the test value and the population mean. Since, the regression analysis did not support the model, it was not reported.

For the analysis of qualitative data, the valid data received using structured written interview and unstructured interview were tabulated together. The analyst-driven thematic analysis approach was used manually taking reference to the six-phases framework recommended by Braun and Clarke (2006). First of all, the researcher reviewed the data several times to be familiar with it (Phase I). Then initial codes were generated (Phase II). The researcher moved forward and backward between the data and initial codes as recommended by Maguire and Delahunt (2017). Each of the statements of initial codes were printed and matched in groups to generate the potential themes (Phase III) with frequency of the themes. Since, the research was analyst-driven, the research variables were used as predefined themes. The potential themes were grouped under the suitable predefined themes (Phase IV). To further define and refine the spirit of the themes, the influence and the relation among the themes were also analyzed (Phase V). Following the aforementioned phases, the analysis was concluded and a report was prepared and documented under chapter 4, data analysis (Phase VI).

Finally, the result of the quantitative data analysis and the qualitative data analysis were reviewed and discussed to triangulate the result before concluding the research. Equal weightage was given to both qualitative and quantitative research findings.

3.6 Validity and Reliability

Validity and reliability are the two key indicators to evaluate while defining the quality of a research. They were observed in all steps of the research. During the study, the researcher made reasonable efforts to warrant the validity by ensuring that data were collected, presented and analyzed in a valid, reliable and accurate manner.

For validity of this study, the structured questionnaires were set from the related topic, primarily based on the literature reviews, Arbitration Act of Nepal and Arbitral Procedure Regulation of NEPCA. The questionnaires were finalized after incorporating the suggestions of two experts. The responses of the respondents were unbiased because they were not influenced in any ways; neither by researcher or any other persons because all the respondents filled the questionnaire independently and participated voluntarily. For the online questionnaires, the provision to have only one response from one gadget was activated. Importantly, as measure of further validation and to ensure that the response of only the targeted sample is collected, three statements were added purposefully under the demographic section of the questionnaires: a) Respondent represent as, b) Number of construction disputes respondents have encountered, and c) Maximum value of the claim that respondent experienced.

No response on those statements or a response with 'None' for any one of the above statements were considered as invalid response and they were excluded from the data analysis on account of being unrepresentative of the phenomenon under study. There were a total ten invalid responses.

The data collected from questionnaires survey were tested using the Cronbach's alpha to check the internal reliability of the instrument i.e. to ensure the items are all indicators of the same underlying construct. Daud et al. (2018) referring to the Pallant (2001) has considered alpha values above 0.60 as moderate hence acceptable. For this study, the standard value of reliability was taken not less than 0.65 for the operational data. A summary is presented as Table A1 of Appendix A. The 'Don't know' measures of Likert-type-data was handled as 'System-missing' using SPSS before applying the test and performing further analysis. All missed data were marked as 'missing' in SPSS.

The secondary data, were also reviewed thoroughly using excel and the incomplete data were removed and limited missing data were marked as 'missing' in SPSS.

3.7 Ethical Consideration

The researcher was fully aware of numerous ethical issues pertaining to the nature of the sensitivity of the issues and confidential nature of the information. Confidentiality and privacy of the respondents and information were well observed. The identity of the respondents and confidential information were not disclosed. The secondary data were presented as they were publicly available in the form of reports, journals, and webpages. Informed verbal consent with the concerned respondents/informants were taken before data collection.

As part of the verbal consent process, the type and purpose of the questionnaires and interview; issues of anonymity and confidentiality; voluntary participation and freedom to discontinue the interview at any stage; and absence of any known risk or benefit for participating in the study were explained beforehand. Each of the elements of the sample population were contacted by phone, email or short messages prior to sending the questionnaires. The researcher was sensitive enough not to give the room for plagiarism in this study.

3.8 Overview

This chapter discussed the research methodology in detail. The study was based on the philosophy of positivistic approach using deductive reasoning. The research was designed based on the sequential explanatory mixed-method. Questionnaires survey and structured written open-ended questions were used to collect the primary data from the sample. Secondary data and unstructured interview were also used to collect additional valuable information. Reasonable efforts were made to ensure the validity and reliability of data collected, presented and analyzed. Because of the sensitive nature of the topic, confidentiality and privacy of the respondents, informants and the data have been well observed.

Chapter 4

DATA ANALYSIS

4.1 Introduction

The process of performing certain calculations and evaluations in order to draw out relevant information from the data is known as data analysis (Ibrahim, 2015). It is the process of classifying, arranging and making sense of the massive amount of information gathered. Therefore, in order to respond to the questions and achieve the objective of the study, the quantitative data collected were analyzed statistically and the qualitative data were analyzed manually. The collected data and the results have been systematically classified, tabulated, analyzed and presented using various tables. The results have been discussed and triangulated. Descriptive analysis, inferential analysis and thematic analysis were used to describe the basic features and infer the conclusion.

4.2 Response Rate

The quantitative data were collected from primary and secondary sources. The primary source of data collection was using questionnaires survey. Out of total 120 questionnaires disseminated, only 78 questionnaires were returned within the given timeframe, representing a response rate of 65 %. Five responses on the questionnaires were received in the form of offline / hardcopy and the rest were received online. Only the 68 responses were considered valid following the conditions set under section 3.6, making the valid response rate of 56.7 %. It is noted that the response rate lower than 40 % could be considered as biased (Mcneill et al., 2005) cited in Mashwma et al. (2016). Further, several studies in the similar field have accepted the response rate of 50 % (Nigel Preece et al., 2013) and above. In addition, the quantity of valid response was well above the minimum required sample size as reviewed under section 3.6.1 (a), (b) and (g). Therefore, the response rate of 56.7 % was considered as acceptable for the study.

The secondary data were collected from past three annual reports of the NEPCA. Out of 69 total cases awarded, 60 cases were used for this study. The rest were excluded as not being relevant for the engineering / construction industry or not having enough information.

The qualitative data were collected using structured written interview. The questions were disseminated, as open-ended questions, during the survey. Valid and relevant responses were screened for the analysis. A follow up unstructured face-to-face interview was conducted with three experts, representing each one as the client (public institution), contractor (private) and an arbitrator (a retired senior government officer). A combined analysis of the qualitative data was performed and presented.

4.3 Quantitative analysis

4.3.1 Demographic statistics

Demographic data on gender, age, experience, academic qualification, province, profession, etc., were collected under the topic of demographic information during the questionnaires survey. The rationale behind this was to ensure that valid information was collected from the targeted population and that diversified communities were involved in the study. The data was also used to assess the group perception on effectiveness of arbitration.

Table 4-1

Distribution of respondents by gender

Gender	Frequency	Percent
Male	67	98.5
Female	1	1.5
Total	68	100

Note. Source: Field survey 2022

The Table 4-1 depicts that 98.5 % of the sample was male and remaining 1.5 % were female. This shows that female population in construction industry and dispute resolution field was dominated by the male in number. There was no missing data in terms of gender category.

Table 4-2*Distribution of respondents by age*

Age Group (years)	Frequency	Percent
Below 50	19	30.2
50 – 60	17	27
Above 60	27	42.9
Total	63	100

Note. Source: Field survey 2022

Out of total 68 respondents, 5 missed to indicate their age group. The Table 4-2 denotes that there were 30.2 % respondents from age group below 50 years; 27 % from age group 50-60 years and about 43 % from age group more than 60 years. The age range was varied from minimum 32 to maximum 75. The maximum numbers of respondents were above 60 years which infers that majority of the respondents were highly matured.

Table 4-3*Distribution of respondents by qualification*

Qualification	Frequency	Percent
Up to +2	0	0
Bachelor	5	7.5
Masters and above	62	92.5
Total	67	100

Note. Source: Field survey 2022

Out of total 68 respondents 1 missed to indicate the qualification level. The Table 4-3 depicts that no one of the respondent had academic qualification below bachelor level. 7.5 % of the respondents had acquired educational qualification of Bachelor level while majority with 92.5 % were having Master degree and above qualification. It can be concluded that maximum numbers of the respondents were highly qualified.

Table 4-4*Distribution of respondents by geographical representation*

Province	Frequency	Percent
Province 1	1	1.5
Madesh	3	4.5
Bagmati	52	77.6
Gandaki	9	13.4
Lumbini	1	1.5
Sudur Paschim	1	1.5
Total	67	100

Note. Source: Field survey 2022

The Table 4-4 illustrates that respondents from Bagmati province represented highest in number with 77.6 % followed by Gandaki province with 13.4 %. While 4.5 % represented from Madesh province, other three province represented 1.5 % each. There was no representation from Karnali province. There was one response missing response in terms of geographical category.

Table 4-5*Distribution of respondents by position*

Position	Frequency	Percent
Middle level management	16	23.5
Top level management	26	38.2
Arbitrators	26	38.2
Total	68	100

Note. Source: Field survey 2022

The Table 4-5 portrays that a total of 23.5 % respondents represented Middle level management position and 38.2 % represented the Top-level management as well as the Arbitrators. No one was

representing from the Lower level management position. The distribution between parties and arbitrators looks fairly distributed. There was no missing response in terms of position category.

Table 4-6

Distribution of respondents by profession

Profession	Frequency	Percent
Engineering	48	70.6
Legal	9	13.2
Both	3	4.4
Others	8	11.8
Total	68	100

Note. Source: Field survey 2022

The Table 4-6 describes that 70.6 % and 13.2 % of the respondents were from engineering and legal profession respectively. While 4.4 % respondents were having dual profession of engineering and legal, remaining 11.8 % were from others including Chartered Accounts, Financial experts, Project Management experts etc. From the data, it can be concluded that maximum numbers of the respondents were from engineering profession. There was no missing response in the category.

Table 4-7

Distribution of respondents by stakeholders

Stakeholders	Frequency	Percent
Clients	17	25.0
Contractors	16	23.5
Both/others	9	13.2
Arbitrators	26	38.2
Total	68	100

Note. Source: Field survey 2022

The Table 4-7 depicts that 25% of the respondents represented clients. While 23.5 % represented contractors, 13.2 % were having experience both as client as well as contractor. The maximum numbers with 38.2 % respondents were from arbitrators. The distribution of respondents was well balanced among the stakeholders. There was no missing in the category.

Table 4-8

Distribution of respondents by role on dispute

Role in Dispute	Frequency	Percent
Claimants	12	17.6
Respondents	19	27.9
Both/others	11	16.2
Arbitrators	26	38.2
Total	68	100

Note. Source: Field survey 2022

The Table 4-8 depicts that 17.6 % of the respondents represented as claimants. 27.9 % represented respondents and 16.2 % were from both, claimant and respondent, category. Remaining 38.2 % represented arbitrators. The distribution of participants was well balanced among the parties. There was no missing response in the category.

Table 4-9

Distribution of respondents by number of cases encountered

Number of cases encountered	Frequency	Percent
1 – 2 cases	14	20.6
3 – 5 cases	11	16.2
More than 5 cases	43	63.2
Total	68	100

Note. Source: Field survey 2022

The Table 4-9 depicts that 20.6 % of the respondents were having experience in 1 - 2 cases, 16.2 % were having experience in 3 - 5 cases. Remaining 63.2 % were experienced in more than 5 cases. There was no missing respondent in the category.

Table 4-10

Distribution of respondents by maximum value of claim experienced

Maximum value of claim experienced	Frequency	Percent
Up to Rs. 30 million or amount not specified (principle related disputes)	22	32.4
More than Rs. 30 million	46	67.6
Total	68	100

Note. Source: Field survey 2022

The Table 4-10 depicts that 32.4 % of the respondents were experienced in low value (up to Rs. 30 million or amount not specified) claim disputes and remaining 67.6 % were experienced in high value (more than Rs. 30 million) claim disputes. There was no missing in the category.

Table 4-11

Distribution of respondents by types of arbitration

Type of arbitration	Frequency	Percent
Ad-hoc	19	27.9
Institutional	30	44.1
Both	19	27.9
Total	68	100

Note. Source: Field survey 2022

The Table 4-11 depicts that 27.9 % of the respondents were having experience in *ad-hoc* nature of arbitration and 30 % were having experience in institutional arbitration. 27.9 % were experienced in both of the tribunals. There was no missing response in terms of type of arbitration category.

4.3.2 Descriptive analysis

Descriptive analysis is a process of using statistical tools and techniques to describe set of data collected from different sources. Likert-type data and Likert-scale data were analyzed using non-parametric and parametric analysis respectively. The discrete numbers, 1 to 4, used for the ordinal scale, were ranged within 0.5 to 4.49 in an equal interval, keeping the range in ratio with the respective frequency before employing interpolation techniques to determine the Median.

Non-parametric analysis of independent variables

Table 4-12

Analysis of Likert-type items used to measure the influence of complexity of the dispute

Items for complexity of the dispute	<i>N</i>	<i>Mdn</i>
Complex contract documentation influences the effectiveness of arbitration.	66	2.74
Involvement of more parties in a dispute influence the effectiveness of arbitration.	67	2.51
Language barrier influence the effectiveness of arbitration.	68	2.42
Participants' diverse cultural background influence the effectiveness of arbitration.	66	2.30
Number of sittings of the tribunal influence the effectiveness of arbitration.	65	2.55

Note. Source: Field survey 2022

The Table 4-12 depicts that the respondents disagreed with two and agreed with three items of the complexity of disputes to influence effectiveness. There were five statements: complex contract documentation influences the effectiveness of arbitration ($Mdn > 2.5$), involvement of more parties in a dispute influence the effectiveness of arbitration ($Mdn > 2.5$), language barrier influence the effectiveness of arbitration ($Mdn < 2.5$), participants' diverse cultural background influence the effectiveness of arbitration ($Mdn < 2.5$) and number of sittings of the tribunal influence the effectiveness of arbitraiton ($Mdn > 2.5$) to evaluate the influence of complexity of dispute over the arbitration effectiveness. The lowest rating ($Mdn = 2.30$) was for the diverse cultural background of the participants and highest rating ($Mdn = 2.74$) was for the influence of complex contract documentation. There were up to 3 responses missing.

Table 4-13

Analysis of Likert-type items used to measure influence of competence of the tribunal

Items	<i>N</i>	<i>Mdn</i>
Tribunals are knowledgeable in Construction Disputes.	67	2.93
Arbitrators demonstrate strong technical and functional skills.	67	2.92
Arbitrator possess strong interpersonal skills.	67	2.84
Arbitrators have quality to maintain fairness and impartiality.	67	2.87
Arbitrators have strong ability to perform neutrally and independently.	67	2.81

Note. Source: Field survey 2022

Table 4-14

Analysis of Likert-type items used to measure influence of adequacy of the size of the tribunal

Items	<i>N</i>	<i>Mdn</i>
There is adequacy of the size of the tribunal.	64	2.96
Multi-member tribunals enhance impartiality and avoidance of the conflict of interest.	66	3.07
Multi-member tribunals enhance the quality of the award.	66	3.08
Multi-member tribunal produce better and stronger awards.	65	3.07
Multi-member tribunal bridges the knowledge and skill gaps, enhancing the competence of the tribunal.	65	3.04

Note. Source: Field survey 2022

The Table 4-13 depicts that the respondents agreed with the items of the competence of the tribunal influence the effectiveness of arbitration. There were total five statements: knowledgeable tribunal; arbitrators' technical and functional skills; interpersonal skills; quality to maintain fairness and impartiality; and ability to perform neutrally and independently to evaluate the influence of on the effectiveness of the arbitration. The median value for all the statements was ($Mdn > 2.5$). The lowest median ($Mdn = 2.81$) is for the statement 'Arbitrators have strong ability

to perform neutrally and independently’ and highest rating ($Mdn = 2.93$) is for the statement ‘Tribunals are knowledgeable in construction disputes’. One response was missing in each items.

The Table 4-14 depicts that the respondents agreed with the items of the adequacy of the size of tribunal influence the effectiveness of arbitration. There were five statements: conformity on adequacy of the size of the tribunal; multi-member tribunals enhance impartiality and avoid the conflict of interest; enhance the quality of award, produce better and stronger awards; and bridges the knowledge and skills gap to evaluate the influence on the effectiveness. The median value for all the statements was ($Mdn > 2.5$). The lowest rating ($Mdn = 2.96$) was for the statement ‘There is adequacy of the size of the tribunal’ and highest rating ($Mdn = 3.08$) was for ‘Multi-member tribunal enhance the quality of the award.

Table 4-15

Analysis of Likert-type items used to measure influence of approaches to presentation of evidence.

Items	<i>N</i>	<i>Mdn</i>
Number of experts and fact witness presented produce effective arbitration.	66	3.02
There are enough choices of presentation techniques.	67	2.88
Tribunal guides the disputants in presenting evidences.	68	2.85
A carefulness of documentation effects the effectiveness of arbitration.	68	3.17
Tribunal provides equal opportunity to all the parties.	66	3.11

Note. Source: Field survey 2022

The Table 4-15 depicts that the respondents agreed with the items of the approaches to the presentation of evidence influence the effectiveness of arbitration. There were five statements: presentation of number of experts and fact witness, choices of presentation techniques, guidance of tribunal in presenting evidences, carefulness of documentation and availability of equal opportunity to all the parties to evaluate the influence on the effectiveness of the arbitration. The median value for overall statement is ($Mdn > 2.5$). The lowest median ($Mdn = 2.85$) is for the statement ‘Tribunal guides the disputants in presenting evidences’ and highest rating ($Mdn = 3.17$) is for the statement ‘A carefulness of documentation effects the effectiveness of arbitration’.

Table 4-16

Analysis of Likert-type items used to measure influence of claim value.

Items	<i>N</i>	<i>Mdn</i>
Low value claim disputes are less complex.	66	2.39
Low value claim disputes are awarded effectively than the high value claim disputes.	64	2.27

Note. Source: Field survey 2022

The Table 4-16 depicts that the respondents disagreed with the items of the claim value influence the effectiveness of arbitration. There were two statements: low claim disputes are less complex and the low value claim disputes are awarded effectively than the high value claim disputes to evaluate the influence of on the effectiveness of the arbitration. The median value for overall statements is ($Mdn < 2.5$). The lowest median ($Mdn = 2.27$) is for the statement ‘Low value claim disputes are awarded effectively than the high value claim disputes’ and the highest rating ($Mdn = 2.39$) is for ‘Low value claim disputes are less complex’.

Parametric analysis of independent variables

Table 4-17

Mean and standard deviation on the influence of dispute factors

Independent Variables	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
Complexity of disputes	68	2.51	0.46	1.40	3.60
Competence of the tribunal	68	2.81	0.51	1.60	4.00
Adequacy of size of the tribunal	68	3.03	0.47	1.20	4.00
Approaches to the presentation of evidence	68	2.98	0.44	1.00	4.00
Claim value	67	2.40	0.63	1.00	4.00

Note. Source: Field survey 2022

The Table 4-17 depicts the average mean response given by the respondents on the influence of all the five independent variables on the effectiveness of arbitration. The mean value 2.51 ($SD = 0.46$) shows that effectiveness of arbitration is influenced by the complexity of the dispute. The mean value 2.81 ($SD = 0.51$) shows that the competence of tribunal influences the effectiveness of arbitration. Similarly, mean value 3.03 ($SD = 0.47$) and 2.98 ($SD = 0.44$) show there exist influence of adequacy of the size of the tribunal and approaches to the presentation of evidence respectively. But the respondents disagreed that the claim value influences the effectiveness of arbitration ($M = 2.40$, $SD = 0.63$).

Non-parametric analysis of dependent variable

Table 4-18

Analysis of Likert-type items used for cost effectiveness of arbitration

Items for cost effectiveness	<i>N</i>	<i>Mdn</i>
The cost of dispute resolution in Nepal is reasonable.	65	2.91
The total cost of resolving the dispute is within parties' expectation.	64	2.86

Note. Source: Field survey 2022

The Table 4-18 depicts that the respondents agreed ($Mdn > 2.5$) the cost of arbitration is reasonable and within the expectation of parties. Two statements were used to evaluate the cost effectiveness.

Table 4-19

Analysis of Likert-type items used for time effectiveness of arbitration

Items for time effectiveness	<i>N</i>	<i>Mdn</i>
The time taken for dispute resolution in Nepal is reasonable.	66	2.48
The total time taken to conclude the dispute has met parties' expectation.	68	2.48

Note. Source: Field survey 2022

The Table 4-19 depicts that the respondents were disagreed ($Mdn < 2.5$) that the time taken of the dispute resolution using arbitration in Nepal is reasonable and within the expectation of parties. Two statements were deployed to evaluate the time performance.

Table 4-20

Analysis of Likert-type items used for quality of award of arbitration

Items for quality of award	N	Mdn
Disputed parties accept the award and comply with it voluntarily.	66	2.48
If the award is not in favorable, parties take the case to the court.	68	2.71
It is difficult to continue doing business among the disputed parties.	67	2.66
Parties refer future disputes to the arbitration.	67	2.72

Note. Source: Field survey 2022

The Table 4-20 depicts that the respondents disagreed in one of the statements ($Mdn < 2.5$) and agreed ($Mdn > 2.5$) in three. They disagreed that the disputed parties accept the award to comply with it voluntarily but confirmed the traits of the parties going to the court if the award is not in favor. The respondents also agreed that there is difficulty to continue doing business among the parties once they face the disputes however, they agreed that parties prefer to refer future disputes to the arbitration. Including two negative, total four questions were deployed to collect the data.

Parametric analysis of dependent variable

The Likert-scales data for cost-effectiveness, time-effectiveness and the quality of award were computed by taking an average of the respective Likert-type data. The ratings for two negative statements (Likert-type data) under quality of award were reversed while computing the Likert-scales data. The Likert-scales data for the overall effectiveness of arbitration was computed by taking mean of the Likert-scales of the cost-effectiveness, time-effectiveness and quality award.

Table 4-21

Mean and standard deviation of indicators and the effectiveness of arbitration

Particulars	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
Cost effectiveness	66	2.93	0.46	1.50	4.00
Time effectiveness	68	2.41	0.63	1.00	3.50
Quality of awards	68	2.28	0.53	1.00	3.75
Effectiveness of arbitration	68	2.54	0.32	1.75	3.75

Note. Source: Field survey 2022

Table 4-21 depicts an overall response given by the respondents regarding the three key indicators of the effectiveness of arbitration, which were used to determine the overall effectiveness of the arbitration. The mean for cost effectiveness was ($M = 2.93 > 2.5$, $SD = 0.46$), time effectiveness was ($M = 2.41 < 2.5$, $SD = 0.63$) and quality of awards was ($M = 2.28 < 2.5$, $SD = 0.53$). The average mean for the overall effectiveness of arbitration was ($M = 2.54 > 2.5$, $SD = 0.32$). The result of the Table 4-21 confirms that the participants have accepted the arbitration in terms of cost effectiveness but not in terms of time effectiveness and quality of awards.

Descriptive analysis of secondary data

Table 4-22

Median, mean and standard deviation on duration and cost ratios (in percentage).

Particulars	<i>N</i>	<i>Mdn</i>	<i>M</i>	<i>SD</i>	Min	Max
No of days taken for awarding	57	369	406.2	230.5	23	1151
Total Cost to Claim Ratio	54	4.12	5.24	3.49	0	20
Total Cost to Award Ratio	39	10.20	19	27.51	2	122
Award to Claim Ratio	43	54.69	52.77	32.53	6	119

Note. Source: Field survey 2022

The Table 4-22 depicts the summary of number of days taken to award the cases. The result shows that the average mean time taken was 406.2 days ($SD = 230.5$) and median was 369 days. The minimum time taken was 23 days and the maximum was 1151 days.

The Table 4-22 also depicts the different financial ratios applicable to the arbitration. The expected mean total cost for a claim is 5.24 % ($SD = 3.49$) of claim value, with the range of possible negligible minimum cost to 20 %. There is high possibility that a claimant might lose up to 20 % of the claim amount if the claim was rejected. With respect to the award, the total cost is about 19 % of the award amount, in an average, which sometime becoming as expensive as up to 122 % of the award amount. The average award amount is approximately half (52.77 %) of the claim amount, which might range from 6 % to 119 %. In one of the cases, even if the claim was rejected, the award was made in favor of respondent. This indicates the possibility of a false claim sometime turning becoming expensive to the claimant.

4.3.3 Inferential Analysis

Inferential statistical analysis in research are used to draw conclusions that cannot be derived from descriptive statistics. It is used to infer population opinion from sample data under study. One sample one tailed t -test and ANOVA test were conducted to compare the true mean value (μ) with the comparison value.

A. Inferential analysis on the influence of dispute factors on the arbitral effectiveness.

Table 4-23

One Sample t-test to evaluate the significance level on the influence of disputes factors.

	H ₀ : $\mu \leq 2.5$ (One tailed test)				Mean Diff.
	t	df	Sig. (2-tailed)	Sig. (1-tailed)	
Complexity of dispute	0.22	67	.824	.412	0.01
Competence of the tribunal	5.07	67	.000	.000	0.31
Adequacy of the size of the tribunal	9.25	67	.000	.000	0.53
Approaches to the presentation of evidence	8.85	67	.000	.000	0.48
Claim value	-1.25	66	.216	.108	-0.10

Note. Source: Field survey 2022

H₀: There is no significant influence of complexity of disputes on arbitral effectiveness.

Table 4-23 indicates that the true mean value on the perception to influence the effectiveness by the complexity of the dispute is higher than the comparison mean value (2.5) by mean difference of positive 0.01 but not significantly ($M = 2.51$; $SD = 0.46$), $t(67) = 0.22$, $p > .05$, which indicates that the study failed to reject the null hypothesis. It infers that there is no significant influence of complexity of disputes on the arbitral effectiveness.

H₀: There is no significant influence of competence of tribunal on arbitral effectiveness.

Table 4-23 indicates that the true mean value on the perception to influence the effectiveness by the competence of the tribunal is higher than the comparison mean value (2.5) by mean difference positive 0.31 significantly ($M = 2.81$; $SD = 0.51$), $t(67) = 5.07$, $p < .001$, which indicates that the study rejects the null hypothesis. It infers that there is significant influence of competence of tribunal on the arbitral effectiveness.

H₀: There is no significant influence of adequacy of the size of tribunal on arbitral effectiveness.

Table 4-23 indicates that the true mean value on the perception to influence the effectiveness by the adequacy of the size of tribunal is higher than the comparison mean value (2.5) by mean difference positive 0.53 significantly ($M = 3.03$; $SD = 0.47$), $t(67) = 9.25$, $p < .001$, which indicates that the study rejects the null hypothesis. It infers that there is significant influence of adequacy of the size of tribunal on the arbitral effectiveness.

H₀: There is no significant influence of approaches to presentation of evidence on arbitral effectiveness.

Table 4-23 indicates that the true mean value on the perception to influence the effectiveness by the approaches to the presentation of evidence is higher than the comparison mean value (2.5) by mean difference of positive 0.48 significantly ($M = 2.98$; $SD = 0.44$), $t(67) = 8.85$, $p < .001$, which indicates that the study rejects the null hypothesis. It infers that there is significant influence of approaches to the presentation of evidence on the arbitral effectiveness.

H₀: There is no significant influence of claim value on arbitral effectiveness.

Table 4-23 indicates that the true mean value on the perception to influence the effectiveness by the claim value is lower than the comparison mean value (2.5) by mean difference of negative 0.10 and not significantly ($M = 2.40$; $SD = 0.63$), $t(66) = -1.25$, $p > .05$, which indicates that the study failed to reject the null hypothesis. It infers that there is no significant influence of the claim value on the arbitral effectiveness.

B. Inferential analysis on effectiveness of arbitration (primary data)

Table 4-24

One Sample t-test to evaluate the significance level of effectiveness of arbitration.

	H ₀ : $\mu \leq 2.5$ (One tailed test)				
	<i>t</i>	<i>df</i>	Sig. (2-tailed)	Sig. (1-tailed)	Mean Diff.
Effectiveness of arbitration	1.06	67	.293	.147	0.04

Note. Source: Field survey 2022

H₀: The arbitration is not significantly effective in resolving construction contract related disputes.

Table 4-24 indicates that the true mean value of the effectiveness of arbitration is higher than the comparison mean value (2.5) by mean difference of positive 0.04 but not significantly ($M = 2.54$; $SD = 0.32$), $t(67) = 1.06$, $p = .147 > .05$. The results infer that the study fail to reject the null hypothesis. It infers that the arbitration is not significantly effective. Further, since the effectiveness of arbitration was determined combining the three key indicators: cost effectiveness, time effectiveness and quality of award, the null hypothesis is extended to the indicators, developing operational null hypothesis to ensure that a profound knowledge is obtained.

Table 4-25

One Sample t-test to evaluate the significance level of indicators of effectiveness of arbitration.

Indicators	H ₀ : $\mu \leq 2.5$ (One tailed test)				
	<i>t</i>	<i>df</i>	Sig. (2-tailed)	Sig. (1-tailed)	Mean Diff.
Cost effectiveness	7.57	65	.000	.000	0.43
Time effectiveness	- 1.15	67	.256	.128	- 0.09
Quality of award	- 3.33	67	.001	.000	- 0.22

Note. Source: Field survey 2022

H₀: The cost of arbitration is not significantly effective in resolving the disputes.

Table 4-25 indicates that the true mean value of the cost effectiveness is higher than the comparison mean value (2.5) by mean difference of positive 0.43 significantly ($M = 2.93$; $SD = 0.46$), $t(65) = 7.57$, $p < .001$, which indicates that the study rejects the null hypothesis. It infers that the cost of arbitration is significantly effective.

H₀: The time taken for the arbitration is not significantly effective in resolving the disputes.

Table 4-25 indicates that the true mean value of the time effectiveness is lower than the comparison mean value (2.5) by mean difference of negative 0.09 and is not significant ($M = 2.41$; $SD = 0.63$), $t(67) = -1.15$, $p = .128 > .05$, which indicates that the study failed to reject the null hypothesis. It infers that the time taken for arbitration is not significantly effective.

H₀: The quality of award of arbitration is not significantly effective in resolving the disputes.

Table 4-25 indicates that the true mean value of quality of award is lower than the comparison mean value (2.5) by mean difference of negative 0.22 and significantly ($M = 2.28$; $SD = 0.53$), $t(67) = -3.33$, $p < .001$, which indicates that the study failed to reject the null hypothesis. It infers that the quality of award is not significantly effective.

C. Inferential analysis on effectiveness of arbitration (secondary data)

Table 4-26

One Sample t-test for cost and time effectiveness on secondary data

Indicators	H ₀ : $\mu \geq 5.24$ % (One tailed test)				
	<i>t</i>	<i>df</i>	Sig. (2-tailed)	Sig. (1-tailed)	Mean Diff.
Cost to Award Ratio	3.12	38	.003	.001	13.76
	H ₀ : $\mu \geq 120$ days (one tailed test)				
	<i>t</i>	<i>df</i>	Sig. (2-tailed)	Sig. (1-tailed)	Mean Diff.
No of days to award	9.38	56	.000	.000	286.18

Note. Source: Field survey 2022

H₀: The cost of the arbitration is not significantly effective in resolving disputes.

One sample one tailed *t*-test was conducted to compare the mean value of cost to award ratio with the comparison value (expected mean, total cost to claims ratio = 5.24 %). Table 4-26 indicates that the true mean value of cost to award ratio is significantly higher than the comparison mean value (total cost to claims ratio) by the mean difference of positive 13.76, ($M = 19\%$, $SD = 27.51\%$), $t(38) = 3.124$, $p = .001 < .05$, which indicates that the study failed to reject the null hypothesis. It infers that the cost of arbitration is not significantly effective.

H₀: The time taken for the arbitration is not significantly effective in resolving disputes (test on secondary data).

One sample one tailed *t*-test was conducted to compare the true mean number of days with the comparison value, 120 days. Table 4-26 indicates that the true mean value of the number of days is significantly higher than the 120 by mean difference of positive 286.18, ($M = 406.18$; $SD = 230.47$), $t(56) = 9.38$, $p < .001$, which indicates that the study failed to reject the null hypothesis. It infers that the time taken for arbitration is not significantly effective.

D. Inferential analysis on the effectiveness of arbitration with respect to the perception of different demographic groups.

H₀: There is no significant difference in the mean perception on the effectiveness of arbitration with respect to gender of respondents.

Table 4-27

One-sample t-test on effectiveness of arbitration rating by males with respect to female.

	H ₀ : $\mu = 1.75$				Mean Diff.
	t	df	Sig. (2-tailed)	Sig. (1-tailed)	
Effectiveness of arbitration (male)	21.55	66	.000	.000	0.80

Note. Source: Field survey 2022

One sample two tailed t -test was conducted to compare the true mean perception of male on the effectiveness of arbitration with the female perception. Table 4-27 indicates that the true mean value of the mean perception of male is significantly different and higher than the comparison mean value by mean difference of positive 0.80, ($M = 2.55$; $SD = .30$), $t(66) = 21.55$, $p < .001$, which indicates that the study rejects the null hypothesis.

H₀: There is no significance difference in the mean perception on effectiveness of arbitration with respect to respondents' age.

Table 4-28

ANOVA Analysis – Effectiveness of arbitration with respect to the age groups.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.40	2	0.20	1.95	.151
Within Groups	6.09	60	0.10		
Total	6.48	62			

Note. Source: Field survey 2022

A one-way ANOVA test, Table 4-28, demonstrated that the mean perception of respondents of different age groups on the effectiveness was not significant $F(2,60) = 1.95$, $p = .151 > .05$.

H₀: There is no significance difference in the mean perception on effectiveness of arbitration with respect to the respondents' geographic representation.

Table 4-29

ANOVA Analysis – Effectiveness of arbitration with respect to the geographic representation.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.31	5	0.06	0.58	.712
Within Groups	6.46	61	0.11		
Total	6.77	66			

Note. Source: Field survey 2022

A one-way ANOVA test, Table 4-29, demonstrated the mean perception of respondents of different groups by geographic representation on effectiveness of arbitration was not significant $F(5,61) = 0.58, p = .712 > .05$.

H₀: There is no significance difference in the mean perception on effectiveness of arbitration with respect to respondents' qualification.

Table 4-30

ANOVA Analysis – Effectiveness of arbitration with respect to the qualification.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.00	1	0.00	0.00	.954
Within Groups	6.77	65	0.10		
Total	6.77	66			

Note. Source: Field survey 2022

A one-way ANOVA test, Table 4-30, demonstrated the mean perception of respondents by different qualification on effectiveness was not significant $F(1,65) = 0.00, p = .954 > .05$.

H₀: There is no significance difference in the mean perception on effectiveness of arbitration with respect to respondents' profession.

Table 4-31

ANOVA Analysis – Effectiveness of arbitration with respect to the profession.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.24	3	0.08	0.78	.511
Within Groups	6.53	64	0.10		
Total	6.77	67			

Note. Source: Field survey 2022

A one-way ANOVA test, Table 4-31, demonstrated that the mean perception of respondents by different profession on arbitral effectiveness was not significant $F(3,64) = 0.78, p = .511 > .05$.

H₀: There is no significance difference in the mean perception on effectiveness of arbitration with respect to the respondents' position level.

Table 4-32

ANOVA Analysis – Effectiveness of arbitration with respect to the position.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.22	2	0.11	1.08	.347
Within Groups	6.55	65	0.10		
Total	6.77	67			

Note. Source: Field survey 2022

A one-way ANOVA test, Table 4-32, demonstrated that the mean perception of respondents by different position level on arbitral effectiveness was not significant $F(2,65) = 1.08, p = .347 > .05$.

H₀: There is no significance difference in the mean perception on effectiveness of arbitration with respect to the groups of stakeholders (parties).

Table 4-33

ANOVA Analysis – Effectiveness of arbitration with respect to the groups of stakeholders.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.34	3	0.11	1.12	.346
Within Groups	6.43	64	0.10		
Total	6.77	67			

Note. Source: Field survey 2022

A one-way ANOVA test, Table 4-33, demonstrated that the mean perception of respondents based on groups of stakeholders on effectiveness was not significant $F(3,64) = 1.12, p = .346 > .05$.

H₀: There is no significance difference in the mean perception on effectiveness of arbitration with respect to the respondents' role on dispute resolution.

Table 4-34

ANOVA Analysis – Effectiveness of arbitration with respect to the role on dispute resolution.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.29	3	0.10	0.96	.419
Within Groups	6.48	64	0.10		
Total	6.77	67			

Note. Source: Field survey 2022

A one-way ANOVA test, Table 4-34, demonstrated that the mean perception of respondents by different groups based on experience on disputes on effectiveness of arbitration was not significant $F(3,64) = 0.96, p = .419 > .05$.

H₀: There is no significance difference in the mean perception on effectiveness of arbitration with respect to the number of disputes encountered.

Table 4-35

ANOVA Analysis – Effectiveness of arbitration with respect to the number of disputes encountered.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.15	2	0.08	0.74	.481
Within Groups	6.62	65	0.10		
Total	6.77	67			

Note. Source: Field survey 2022

A one-way ANOVA test, Table 4-35, demonstrated that the mean perception of respondents by different groups based on number of cases experienced on effectiveness of arbitration was not significant $F(2,65) = 0.74, p = .481 > .05$.

H₀: There is no significance difference in the mean perception on effectiveness of arbitration with respect to the maximum value of claim experienced.

Table 4-36

ANOVA Analysis – Effectiveness of arbitration with respect to maximum value of claim experienced.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.01	1	0.01	0.11	.743
Within Groups	6.76	66	0.10		
Total	6.77	67			

Note. Source: Field survey 2022

A one-way ANOVA test, Table 4-36, demonstrated that the mean perception of respondents by different groups based on maximum value of claim experienced on effectiveness of arbitration was not significant $F(1,66) = 0.11, p = .743 > .05$.

H₀: There is no significance difference in the mean perception on effectiveness of arbitration with respect to the type of arbitration.

Table 4-37

ANOVA Analysis – Effectiveness of arbitration with respect to the type of arbitration.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.56	2	0.28	2.92	.061
Within Groups	6.21	65	0.10		
Total	6.77	67			

Note. Source: Field survey 2022

A one-way ANOVA test, Table 4-37, demonstrated that the mean perception of respondents by different groups based on types of arbitration encountered on effectiveness of arbitration was not significant $F(2,65) = 2.92, p = .061 > .05$.

E. Correlation between effectiveness of arbitration and the dispute factors.

Spearman's rho correlation was computed to assess the direction of relationship and strength of association between the variables. The data on Table B1 of Appendix B shows that there is very weak and insignificant relationship between the dependent variable: effectiveness of arbitration and the independent variables: complexity of dispute, competence of the tribunal, adequacy of the size of the tribunal, approaches to the presentation of the evidence and the claim value; ($r(66) = -0.05, p = .705$); ($r(66) = -0.06, p = .607$); ($r(66) = 0.14, p = .270$); ($r(66) = -0.02, p = .858$); ($r(65) = 0.04, p = .733$)) respectively.

There is a very weak positive correlation between complexity of the dispute and the competence of the Tribunal which is statistically non-significant ($r(66) = 0.03, p = .791$). The correlation between the complexity of dispute and the adequacy of the size of the tribunal also very weak positive and statistically non-significant ($r(66) = 0.19, p = .129$). The correlation between the complexity of dispute and the approaches to the presentation of evidence is very weak negative and statistically non-significant ($r(66) = -0.19, p = .122$). The correlation between the complexity of the dispute and claim value is weak positive and non-significant ($r(65) = 0.22, p = .069$).

The correlation between the competence of the tribunal and the adequacy of the size of the tribunal is weak positive but significant ($r(66) = 0.24, p = .047$). The correlation between the competence of the tribunal and the approaches to the presentation of evidence is very weak positive and statistically non-significant ($r(66) = 0.19, p = .113$). The correlation between the competence of the tribunal and the claim value is very weak negative and non-significant ($r(65) = -0.13, p = .288$).

The correlation between the adequacy of the size of the tribunal and the approaches to the presentation of the evidence is weak positive but statistically significant. ($r(66) = 0.31, p = .010$). The correlation between the adequacy of the size of the tribunal and the claim value is very weak negative and statistically not significant ($r(65) = -0.05, p = .673$). And the correlation between the approaches to the presentation of evidence and the claim value is also very weak negative and statistically not significant ($r(65) = -0.10, p = .421$).

4.3.4 Key Findings

The key findings of the quantitative analysis are:

- The dispute resolution field of construction industry is predominately controlled by male with 98.5 % representation. The study covered respondents from 6 of 7 provinces of Nepal with majority from Bagmati (77.6 %) followed by Gandaki province (13.4 %).
- About 70 % of the respondents represented the age group above 50 years; and more than 90 % were having master degree and above qualification. More than 70 % of the respondents were from engineering, followed by more than 13 % from legal profession. More than 38 % represented both top level management and arbitrators (experts) where more than 63 % had encountered more than 5 cases.
- There was fair distribution of participants among stakeholders and role on disputes, two third of the respondents were experienced on cases valued more than 30 million in both ad-hoc and institutional settings. This ensures that the source of knowledge is well matured and qualified hence data can be assumed reliable.
- The test failed to reject that there is no significant influence of complexity of dispute. The test rejects that there is no significant influence of competence of tribunal, adequacy of the size of tribunal and the approaches to the presentation of evidence on effectiveness. The result infers that there is no significant influence of the claim value on the effectiveness.
- The opinion measures infer that the cost of the tribunal is significantly effective hence reasonable as well as within the parties' expectation. But the objective measures failed to accept that the cost of arbitration is significantly effective. The mean of total cost to claim ratio was 5.24 % ($SD = 3.49$) which was ranging from 0 to about 20 percent. Award to claim ratio was 52.77 % ($SD = 32.53$) ranging from 6 percent to 119 percent. The average total cost to award ratio is 19 % ($SD = 27.51$ %) which could vary from 2 percent to 122 percent. This depicts that the average total cost is 19 percent of the award value and was significantly higher than the expected mean total cost 5.24 percentage of the claim.
- The opinion measures on time effectiveness rejects that the time taken for arbitration is significantly effective. The objective measures also rejected that the time taken for arbitration is significantly effective. The minimum time taken to award the cases was 23 days and

maximum period taken was 1151 days. The average mean duration was 406.2 days and median was 369 days. The expected duration is 120 days.

- Results of the opinion measure of quality of awards infers that the quality of award is not significantly effective. The opinion measure of overall effectiveness of arbitration failed to reject that the arbitration is not significantly effective.
- There is significant difference in the mean perception on the effectiveness of arbitration with respect to gender. For other demographic variables, there is no significant difference in the mean perception on the effectiveness of arbitration with respect groups of each of the variables.
- The correlation coefficient was computed among the several variables, which showed a weak relationship between the variables. The regression analysis did not support the model.

4.3.5 Discussion

The rationale behind analyzing the demographical statistics was to confirm that the relevant information was collected from the targeted population as well as a wider community within the population is covered for the study. It helps to understand the background characteristics of the respondents better. In the absence of demographic information, the researchers cannot presume that there are no disparities between groups (Hammer, 2011). Finding confirms that this study has considered an adequate diversity while collecting the substantial data from the sample size.

Influences of complexity of disputes

A total of five items were deployed to evaluate the influence of complexity of the dispute on the arbitral effectiveness. The descriptive analysis of the items confirms that the complex contract documents, involvement of more parties in a dispute and the number of sittings of the tribunal influences the effectiveness of the arbitration conforming the conclusion of Aryal and Dahal (2018). Further, while Aryal et al. had identified the communication problems as a prime item of the complexity, the finding of this study contradicts with the claim as the language barrier does not much influence the effectiveness of arbitration practices in Nepal. The finding of descriptive analysis does not support the idea that the participants' diverse cultural background is an influencing factor of effectiveness of arbitration.

The result of one sample *t*-test infers that the perception of respondents is that the complexity of the dispute has statistically not significant influence over the effectiveness of the arbitration, opposing to the observation of Abwunza et al. (2021) who cited Choi et al., 2014; Gebken II and Gibson, 2006; Hinchey and Perry, 2008; Ulmer, 2010, to suggest that the complexity may have an influence on the time and cost components of the resolution of the construction dispute. Considering the view of the triple constraint theory, the quality of award may also be influenced. No significantly strong correlation between the complexity of disputes and other four independent variables found. A negative correlation, though very weak and statistically non-significant between complexity of disputes and approaches to the presentation of evidence somehow indicates that a weak approach to the presentation of evidence increases the complexity of the disputes (Hinchey, 2012; Hinchey and Perry, 2008) as cited in Abwunza et al., 2021.

Influence of competence of the tribunal

A total of five items were deployed to evaluate the influence of competence of the tribunal. The descriptive analysis of the items concludes that the tribunals are knowledgeable and the arbitrators demonstrate strong technical and functional skills in the construction management, agreed with Tolle et al., 1990, to control the arbitration process effectively. Arbitrator possess strong interpersonal skills and maintain fairness and impartiality as expected by the personality trait theory. Tribunal have strong ability to perform neutrally and independently, which are vital as the arbitrators control the content and the award the proceedings (Moza et al., 2017).

The result of *t*-test infers the perception that the competence of the tribunal has statistically significant to influence the effectiveness of arbitration. No significant correlation between the competence of tribunal and other variables except adequacy of the size of tribunal is found, which is challenging the claim of Stipanowich and Lamare (2014) that the competence of the tribunal depends on the complexity of the dispute. The correlation between competence of tribunal and the adequacy of size of the tribunal is weak positive but significant. It indicates that the size of the tribunal somehow helps to improve the competence of the tribunal.

Influence of adequacy of size of the tribunal

A total of five items were organized to evaluate the influence of adequacy of the size of the tribunal on the effectiveness of the arbitration. The descriptive analysis of the items infers that the size of the tribunal is adequate. The perception is that the multi-member tribunals enhance impartiality and avoidance of the conflict of interest enhancing the quality of award and producing better and stronger awards.

The finding of *t*-test confirms the perception that the adequacy of the size of the tribunal has statistically significant influence on the effectiveness of the arbitration. No strong correlation between the adequacy of the size of the tribunal and claim value found. Though weak, there exist a statistically significant positive correlation of adequacy of the size of the tribunal with the competent of the tribunal and the approaches to the presentation of the evidence.

Influence of approaches to the presentation of the evidence

A total of five items were organized to evaluate the influence of approaches to the presentation of evidences on the effectiveness of the arbitration. The descriptive analysis of the items demonstrate that the number of experts and fact witness presented produce effective arbitration; there are enough choices of presentation techniques; tribunal guides the disputants in presenting evidences; carefulness of documentation effects the effectiveness of arbitration and the tribunal provides equal opportunity to all the parties. The result infers the approaches to the presentation of evidences do have influence on the effectiveness of the arbitration. The finding of *t*-test infers that the approaches to the presentation of evidence has statistically significant influence on the arbitral effectiveness. No strong correlation between the approaches to the presentation of evidence and the other three independent variables except adequacy of the size of the tribunal is found.

Influence of claim value

A total of two items were arranged to evaluate the influence of claim value on the effectiveness of the arbitration. The descriptive analysis of the items illustrates that low-claim disputes are not necessarily less complex and low value claim disputes are not necessarily awarded effectively in compare to the high value claim. The analysis shows that the claim value does not have influence

on the effectiveness of the arbitration, unlike to the expectation of Rule 33 of the APR of NEPCA. The finding of *t*-test confirms the perception that the claim value has statistically no significant influence on the effectiveness unlike to the findings of Moza et al. (2017) who have claimed that claim value has an impact on the total duration of hearings.

The correlation between the claim value and other four independent variables is very weak and insignificant. There is positive but weak correlation with complexity of disputes and negative but weak correlation with others: competency of the tribunal, adequacy of the size of the tribunal and the approaches to the presentation of the evidence.

Assessing Effectiveness of Arbitration.

The goal model of the theory of effectiveness connects the effectiveness to the objectives and the participants' satisfaction model connects the same to the degree of achievements of those objectives. The objectives of the arbitration are the cost effectiveness, time efficiency and quality of award i.e. acceptability of award, therefore their measurement is important for assessing the effectiveness of arbitration.

The result of the survey data confirms that the cost of the arbitration is significantly effective in regards to the two of the three key measures: the cost of dispute resolution is reasonable and within parties' expectation, which is in line with the participants' satisfaction model of theory of effectiveness. The third measure used was actual cost incurred as a percentage of the claim awards i.e. the ratio of total cost to award. The result confirms that the true mean value of cost to award ratio is significantly higher than the comparison value (mean of total cost to claims ratio) inferring lack of cost effectiveness in practice, contradicting with the goal model and the expectation of the provision of rule 24(2), APR of NEPCA (2016), which demands the arbitration to be completed in frugal manner.

Similarly, the time taken to complete the arbitration process is not significantly effective confirming the time of dispute resolution is neither reasonable nor within the expectation of the parties, which were the two of three key measures. The result contradicts with the participants' satisfaction model. The third measure used was actual time taken to the comparison value (120 days). The finding is that the true mean number of days is significantly higher than 120 days

inferring poor in time effectiveness in reality hence the result contradicts with the goal model as well as the expectation of the provision of rule 24-2 of the APR of NEPCA (2016) which requires to complete in a quick manner. The average time taken in Nepal is 406.2 days, which is quite less in compare to the time taken (2514 days) in India (Moza et al., 2017).

The perception on quality of award is significantly ineffective confirming that the disputed parties' unwillingness to comply with the award voluntarily and preferring going to the courts if awards are not in favor, which violates the philosophy and the theory of arbitration process. This perception of not complying with the award is matching with the result of a study concluded by Mishra et al. (2022), indicating more than three quarters of awards were not accepted in 16 cases they analyzed. Further, while a dispute is expected to be resolved amicably using arbitration (Section 2.2 of this report), the parties afraid that the dispute gives them hard time to maintain the business relationship with the counter-parties. Nevertheless, the parties prefer to take the future disputes to the arbitration which is positively valued.

The overall effectiveness of the arbitration can be analyzed in two ways. Firstly, the inferential analysis of summative Likert scales for the effectiveness of arbitration, and the result inferred the study failed to reject that the arbitration is not significantly effective. Secondly, using the triple constraint theory, which suggests that the three key indicators are the measuring factors for the success of a project management and Giaretta (2016) has simulated arbitration as a project. For a project to be effective, all these three indicators need to be effective individually. An ineffectiveness of one element hits directly to the other two elements.

In gist, given the statistical findings, the cost cannot be claimed fully effective, the time cannot be claimed effective, and the quality of awards cannot be perceived as effective, therefore the arbitration process cannot be claimed as effective in Nepal in resolving construction contract related disputes. The finding matches with the finding by Moza et al. (2017), to confirm that the arbitration process is spoiled by delays and cost escalation failing to meet the objective of applicable legislation.

Further, there is no significance difference in the mean perception on effectiveness of arbitration with respect to the different groups of individual demographic variables, except for the gender.

The mean perception between the genders was significant. The only one female respondent was in view that the arbitration is not at satisfaction level.

4.4 Qualitative Data Analysis

Qualitative data analysis was performed using the thematic analysis approach, a method of identifying themes or patterns in qualitative data (Maguire & Delahunt, 2017).

4.4.1 Thematic Analysis

Data obtained from the participants were rigorously analyzed using the guidelines recommended by Braun and Clark (2006) to identify the potential themes, which were later matched with the predefined themes, the variables. The analysis to arrive to the potential themes was performed manually. The list of predefined themes (variables), potential themes, frequency and their influence are tabulated, presented and described below.

A. Analysis on the influence of complexity of dispute on effectiveness of arbitration.

Table 4-38

Summary of the thematic analysis – influence of complexity of disputes on the effectiveness.

Themes	Potential themes	Frequency	Influence
Effectiveness of arbitration	Time effectiveness	22	Inverse
	Quality award	13	
	Cost effectiveness	3	
	Overall Effectiveness	18	
	No effect	2	Neutral
Total		58	
Complexity of dispute	Nature of contract	14	Factors
	Involvement of parties	8	
	Increased no of sitting	4	
	Language barrier	5	
Total		31	
Competence of tribunal	Competence, Knowledgeable & Knowledge sharing, Skills.	32	Demands / Conditional
	Personality traits, Experience	16	
Total		48	
Approaches to presentation of evidence	Evidence presentation	22	Conditional
Total		22	
Adequacy of size of tribunal	Size of tribunal	5	Conditional
Total		5	

Note. Source: Field survey 2022

The Table 4-38 provides a summary result of thematic analysis on the influence of complexity of disputes over the effectiveness of arbitration in the construction dispute of Nepal. There were 55 valid responses. Informants for 56 times mentioned that there is direct but inverse influence of

complexity of disputes on arbitral effectiveness. Only two times there were neutral views indicating no effect only if there could be adherence to the principles of ADR with professional ethics and the intent of the conditions of contract. The extreme influence was on time and least was on cost. Participants were aware that complexity delays the arbitration ultimately delaying the projects adversely impacting on the overall economy of the nation.

Concerns were raised 31 times on the factors of complexity of disputes. No one mentioned cultural background of the participants as the cause of complexity of dispute. Concerns were raised 14 times on the nature of contract including technical, legal and social issues of claims and conditions of contracts. The factor of involvement of parties were repeated 8 times. The informants were in the view that dispute gets complex due to the lack of sincerity among the parties to their words and responsibility, lack of cooperation and negligence in responding to the queries. During an interview, it was claimed that clients, mostly representing the public entities, were lethargic to respond on time, primarily due to two main reasons: lack of accountability and frequent mobility of responsible employees. There were views that a bossy nature of the clients from public organizations and their corrupt mindset complicates dispute causing serious losses. Number of sitting as factor of complexity was repeated for four times. Participants were in view that the language should not be considered as major factor and was repeated five times.

The data showed connection among the complexity and other independent variables under study. The analysis inferred that a complex dispute demands highly competent tribunal. An effective arbitration on complex disputes can only be achieved if the tribunal is adequately composed of competent members. 48 times, participants expressed that effectiveness on the complex disputes depends on knowledge, skills, experience and personality trait including integrity, professional ethics, accountability and the attitude. Knowledge, skills and experience on the subject matter is vital to build up the trust on the award. Arbitrators' intuitions and expertise play a key role in producing effective award. The arbitrators need to be conversant with the national and international governing laws, rules and regulations scrupulously and deeply and be able to take references of past verdicts, practices on similar cases in addition to deeply reviewing evidences presented by the parties. Eight times informants advised the need of knowledge sharing with the international partners to empower the Nepali arbitrators to deal with the complex disputes

effectively. Most of the participants were concern on the delay in resolving the complex dispute and its consequences on the completion of the projects at all.

Participants, for 22 times, mentioned that the effectiveness on complex disputes depends on how clearly and strongly the evidences are presented and added that both the competence of tribunal and the presentation of evidences are equally important for an effective award on complex issues. The data unveiled that the disputed parties sometime intentionally hide the facts or submit limited evidences to the tribunals making the dispute complex. Further, complexity in the documents includes use of inexplicit and vague wordings which demands careful analysis, review, verify, interpret and comprehend of documents. There might be need of consulting specialist and other arbitrators which ultimately results to increased number of hearings and buying times. Participants added that lack of skills in verifying and analyzing evidence in complex disputes affects fair results. The study also divulged that there is tendency of the parties to make claims deliberately without proper evidence and supporting documents and avoid amicable settlement making the dispute unnecessarily complex.

While no one mentioned any relationship between the complexity of dispute and the claim value, five responded that the effectiveness in complex disputes depends on the size and composition of the tribunal. Three of the informants recommended the need of refining the resource development practices and arbitration act / policy for the effectiveness of the arbitration.

B. Analysis on the influence of competence of the tribunal on effectiveness of arbitration.

Table 4-39

Summary of the thematic analysis – influence of competence of the tribunal on the effectiveness.

Themes	Potential Themes	Frequency	Influence
Effectiveness of arbitration	Competence, experience, personality traits, fairness, knowledgeable	34	Positive
	Competence, experience knowledgeable, skills, professionalism	16	Negative
	Impartiality, fairness, integrity	13	
Total		63	
Complexity of dispute	Complex issues; interpretation; absenteeism	9	Demands
Total		9	
Approaches to presentation of evidence	Document presentation	13	Conditional
Total		13	
Adequacy of size of tribunal	Tribunal formation	4	Conditional
Total		4	

Note. Source: Field survey 2022

The Table 4-39 provides a summary of analysis on the influence of competence of tribunal on effectiveness and there were 51 valid responses. The participants, 34 times, confirmed that the tribunal is competent and 29 times, the views were against to accept tribunal being competent. The informants argued that personal competence plays a great role in the arbitral effectiveness.

Those who did not agree the tribunal being competent argued that the panel lacks technical and legal knowledge and updating on new development around the world which drives them to express subjectively. The tribunal lacks uniformity in understanding the cases due to lack of diversity in forming the tribunals. Some informants claimed that even though the members are technically competent, there were cases where they were influenced by other factors like favoritism and nepotism, therefore lose professionalism. Informants claimed that there were cases where panel members were influenced by contractors. The response indicated that while influential names are nominated with more cases, others are empty handed. There seems favoritism within arbitrators, as a consequence parallel organization(s) have been established to practice the same at lower administrative cost and competitive remuneration.

Those who claimed the tribunal is competent commented that the panel members are well educated and have good knowledge on dispute resolution including the contract papers, governing laws and regulations including international practices of the construction contracts. They emphasized the need of careful selection. Majority were in view that should the personality trait of the panel members is improved, the competence of the tribunal would be better than expected.

Participants reiterated that complexity of disputes demands competent tribunal. Absenteeism of panel members increase complexity. Majority of the participants were in perception that the competence of the tribunal is not as expected, due to which the effectiveness of the arbitration could not be achieved. It was quoted 13 times that the approaches to presentation of evidence is equally important to the competence of the tribunal. Formation of the tribunal selecting competent members is important for an effective award, repeated four times. Some argued that the preference of opting panel members should be based on the relevant profession.

The participants were in view that there is strong need of continuous learning and research study to evaluate the effectiveness in terms of quality of award, impartiality of the process and the impacts of the arbitration practices so that effective feedbacks can be given for the enhancement of the integrity, neutrality and have rational and fair awards.

C. Analysis on the influence of adequacy of size of the tribunal on effectiveness

Table 4-40

Summary of the thematic analysis – influence of adequacy of size of tribunal on the effectiveness.

Themes	Potential Themes	Frequency	Influence
Effectiveness of arbitration	Three	23	Adequate
	3 or more	19	
	One to 3	3	
	Tribunal formation	5	Important
Total		50	
Complexity of dispute	Oversized, right size	7	Cause
Total		7	
Competence of tribunal	Knowledgeable, skills, knowledge sharing, competence, experience, personality traits	16	Important
	Impartiality, integrity	7	Positive
Total		23	
Approaches to the presentation of evidence	Collecting & analyzing evidences	4	Important
Total		4	

Note. Source: Field survey 2022

The Table 4-40 provides a summary of the thematic analysis on the influence of adequacy of size of the tribunal on effectiveness and there were total 48 participants. There was call for 23 times recommending size of three-member tribunal and 19 times recommending size of three or more as adequate size for an effective tribunal. In view of three a tribunal with sole arbitrator is adequate given he or she is competent enough and adequate evidence are provided. Five times participants argued that it is not only the size but the formation of tribunal with diverse profession could be

better. In total 42 times, the recommendation was for multi-member tribunal could be adequate in imparting an effective award. Seven participants specifically preferred multi-member tribunal in complex disputes to balance the award, reducing conflict of interest among panel members, if any. Multimember tribunal is recommended for collective efforts in giving different analysis on complex disputes for suitable and acceptable award. Informants claimed that an oversized, more than 3, tribunal does not add much value to the arbitration but may create more ambiguity in the dispute leading to the complexity of dispute.

The size of tribunal is helpful to improve the competence of the tribunal. Informants agreed that the multi-members tribunal is helpful to avoid biasness. The members will have opportunity of sharing knowledge and experience contributing in quick and quality award. The multi-member tribunal is expected to bridge the knowledge and skill gaps enhancing the competence of the tribunal. Multimember tribunal representing different discipline support to deliver the award in time with effective settlement. A total of 23 times, participants claimed that competence like knowledge, skills, experience, personal traits like attitude are more important than the size of the tribunal for the effectiveness of the arbitration. For others, the formation of tribunal is important.

A total of four times, the informants raised their voice that even the adequate size of the tribunal cannot perform effectively if there lacks effective approaches to the presentation of evidence. Effectiveness of a tribunal is a combined effort of adequacy of size of the tribunal, competence of the tribunal, presentation of evidence and the nature of the disputes.

D. Analysis on the influence of approaches to the presentation of evidence on effectiveness

Table 4-41

Summary of the thematic analysis – influence of approaches to the presentation of evidence on the effectiveness.

Themes	Potential Themes	Frequency	Influence
Effectiveness of arbitration	Written documentation with legal and facts evidences in complete, discussion.	24	Positive
	Openness / Equality	6	
	Experts based evidence, field visit, techniques for the presentation of evidence	13	
Total		43	
Complexity of dispute	Use of weasel words, establishing merit of claim based on contract, hearing, relevance of evidence.	9	Cause
	Parties involvement	7	Important
	Investigative approach	2	Acclaimed
Total		18	
Competence of tribunal	Impartiality, competence, Resourceful hearing	13	Improvement requires.
	Transparent, flexibility, Communication, Integrity	12	
Total		25	

Note. Source: Field survey 2022

The Table 4-41 provides a summary of analysis on the influence of approaches to the presentation of evidence on effectiveness of arbitration and there were total 38 valid participants on the question. The participants, for 43 times, expressed that for the effectiveness of the arbitration the evidential documents need to be effective i.e. complete, clear, fair, concise, legal and strong with facts evidences. They were in view that the presentation of evidence can be effective through the use of skilled experts as the expert views-based evidence makes the dispute settlement easier, transparent to satisfy all the parties. The tribunal needs to be more focused, serious and sensitive to analyze and evaluate the evidence in detail for effective awards. Documents need to be systematic and adequate. Maintaining equality between parties giving them open and flexible opportunity to present the evidence ensures that the award is accepted. Field visit, presentation of witnesses, use of photographs, drawings and data add value for arbitral effectiveness.

In view of 18 participants there is strong relationship between the approaches to the presentation of evidence to the complexity of the dispute. Use of weasel words in the evidence complicates the disputes. Establishing merit of claim based on the rights details on the contract document can make the dispute less complex. Effective oral presentation using the available technologies reduce the need of additional hearings. While parties understanding and clarity on the contractual clauses reduce the complexity, the study unveiled that participants, normally the governmental representative, did not take the case seriously and were inactive to respond presenting the required evidence on time, which challenges the effectiveness. Participants were in view that an investigative approach could be essential in case of acute need to avoid excessive cost. Informants added that some parties try to confuse the tribunal with irrelevant evidences making the case complex. To ease the arbitration process, parties need to produce relevant evidence and precedence documents.

The finding of the data analysis inferred that together with the approaches to the presentation of the evidence, competency also plays an important role. The tribunal's impartiality, competence and resourceful hearing are important for the effective arbitration. Flexibility for selection and use of technology for the presentation of evidence add values in the effectiveness of the evidence.

E. Analysis on the influence of value of claim on effectiveness

Table 4-42

Summary of the thematic analysis – influence of claim values on the effectiveness.

Themes	Potential Themes	Frequency	Influence
Effectiveness of arbitration	No relation	15	No relation
	Positive correlation	8	Positive
	Negative relation	5	Negative
	Affect the arbitration	3	Relation
Total		31	
Complexity of Dispute	Complexity, scope of work	4	Important
	Involvement of parties	4	
Total		8	
Competence of the Tribunal	Knowledge, Experience	5	Important
	Impartiality, Integrity, Principle	6	
Total		11	
Approaches to presentation of evidence	Evidence & supporting documents	3	Important
Total		3	

Note. Source: Field survey 2022

The Table 4-42 provides a summary of the analysis on the influence of claim value on the effectiveness, and there were total 35 valid participants on the related question. In view of 15 participants there is no any relation between the claim values and the arbitral effectiveness and in view of 16, the claim value does have impact on the effectiveness. Eight of 16 participants claimed that there is positive relationship and five of 16 claimed for negative relationship and three simply mentioned it affects the effectiveness but remain neutral whether positively or negatively.

Those who argued for the negative relation mentioned that higher claim amount invites more issues, malpractices and more time for the process. Additional extension of time elevates the

possibility of haggling by dishonest panel members causing ineffective arbitration. Some participants argued that low value claims are less complex and settled effectively but the high value claims are more complex and have consequences on the effectiveness of the arbitration. Those who claimed for the positive relation between claim value and effectiveness of arbitration mentioned that claim amount influences the seriousness hence good effort in the process, which is expected to end with an effective outcome.

Even though, the value of claim, in view of eight participants, determines the complexity, it is the complexity of the dispute and competence of tribunal rather than the amount of claim that influences on the arbitration and stressed that impartiality, integrity, knowledge and experience of the panel members are the key competences that influences the effectiveness. Informants added approaches to presentation of evidence as an important influencing factor. The data unveiled that claimant tries to claim excess amount than the valid and reasonable amount and the unnecessarily inflated claim amount encourage the panel members to influence on award positively.

F. Analysis on the effectiveness of arbitration on construction dispute of Nepal.

Table 4-43

Summary of thematic analysis – effectiveness of the arbitration on construction dispute of Nepal

Themes	Potential Themes	Frequency	Influence
Effectiveness	Effective instrument, easy, speedy award, fair, satisfactory.	26	Positive
	Insignificant number of award overturned.	6	
	Only the means, forced to opt	9	Negative
	Not effective, biased, time taking, costly, challenge in implementing awards.	18	
	Depends on award implementation.	17	Conditional
	Risk of questioning by oversight agencies.	7	Fear
Total		86	
Complexity of dispute	Personality traits	5	Negatively
	Interest of the parties	7	
Total		12	
Competence of the tribunal	Knowledgeable, Qualified, experienced	12	Important
	Biasness, favor, dishonesty	5	Negative
	Neutral, Impartial, honesty	7	Key factor
Total		24	
Adequacy of size of the tribunal	Composition of tribunals	5	Consideration
Total		5	
Approaches to the presentation of evidence	Timely submission, relevant evidences, complete & written documentation	15	Important
Total		15	

Note. Source: Field survey 2022

The Table 4-43 provides a summary of the thematic analysis on the effectiveness of arbitration in the construction dispute of Nepal. There were total 55 valid responses on the question related to the effectiveness of the arbitration in Nepal. A total of 32 times, participants mentioned positively.

The informants were in the perception that the arbitration in Nepal is effective as expected. The arbitration in NEPCA is easy, speedy and the awards are fair and satisfactory. Six times, the participants emphasized that only an insignificant number of awards overturned by the courts, which is a clear sign of effectiveness of arbitration. But the government entities, employers, were reluctant to implement the award, even if they were aware of the above facts.

A total of 27 times, participants expressed dissatisfaction and were pessimistic indicating that arbitration in Nepal lacks effectiveness. The most frustrating part they indicated was the arbitration is time consuming and now a trend has developed even not to consider the award as a final by the parties. The informants sadly claimed that if one of the disputants is a public entity the arbitral award is definitely challenged in a court of law even if they know that the awards are reasonable. Some blamed the tribunal being biased and costly. The participants repeated nine times that they opted it as it was only the option available and they were forced by the law to opt it.

Seventeen times, the participants indicated that the effectiveness of the tribunal is conditional. They repeated that even though the arbitration is effective, the overall effectiveness depends on how the implementation of the award are practiced. The informants argued that while the tribunal provides safe environment to both parties, the major weakness is in the part of government entities regarding the implementation of arbitration awards and rules. Seven times, the informants supplemented that the risk of questioning by oversight agencies including CIAA, NVC and other authorities is the main cause of taking the cases to the courts even after the award.

There were total 12 responses linked with the complexity of dispute. There were views that the perception of the clients, government entities, on them being always right and the contractors, private parties, always wrong makes the arbitration process difficult. Due to such personal traits, some of the participants felt that spending funds in arbitration is wastage as awards are rarely implemented without going to the court and claimed that arbitration in Nepal is predominantly not functional. Among the several reasons, vested interest of the parties plays a key role for the arbitration to be inversely affected making the dispute complex. The clients were in view that the claimant, private contractor parties, are more favored than others. The same perception from contractors' side has also come indicating that since most of the arbitrators had background of working with public entity, they favor the clients.

The participants were in view that involvement of qualified and experienced experts in the arbitration and the flexibility of selecting the tribunal members from a panel list is the strength of arbitral procedure in Nepal. About 23 times, the participants mentioned about the competence of the tribunal. The tribunal in Nepal has allowed parties to present their case fairly giving reasonable time to all parties. The key factors to be improved for competent tribunal are neutrality, impartiality and honesty as, according to the participants, a significant number of arbitrators in the rosters have compromised honesty. Some participants unveiled that there is competition among the arbitrators itself therefore effectiveness of arbitration is expected as competent tribunal leverage their knowledge of the industry to identify, assess, avoid and resolve construction claims and disputes. There is strong need of enhancing trust among parties.

Informants mentioned that a knowledgeable and competent tribunal is important for the effectiveness of the arbitration. Biasness and favoritism negatively influence the effectiveness. To ensure that the arbitration is effective, five times it was mentioned that the composition is to be seriously guided by the philosophy of the arbitration. A total of 15 times, participants mentioned that the importance of approaches to the presentation of evidence plays an important role for the arbitration to be effective. If the relevant evidence in complete are submitted without delay, the arbitration can be completed in less time with quality outcome. There was recommendation to increase the awareness on the arbitration among the construction practitioners.

G. Analysis on the preference to refer future disputes to the Nepali arbitration.

Table 4-44

Summary of thematic analysis – preference to refer future disputes to the Nepali arbitration.

Themes	Potential Themes	Frequency	Influence
Preference	Preferred	25	Conditional
	Preferred	7	
	Not preferred	16	
Total		48	

Note. Source: Field survey 2022

The Table 4-44 provides a summary of the thematic analysis on the preference to refer future disputes to the Nepali arbitration. There were total 45 valid responses. A total of 25 preferred to refer future disputes to the Nepali arbitration; seven participants preferred with conditions. Similarly, a total of 14 were in view of not preferring if the legal provision is not mandatory.

Those who preferred justified that arbitration as the most preferred method of ADR. Despite sometime there can be discontents shown by the parties, the arbitration is widely accepted by parties and courts. Participants preferred it as best and last option out of the court and even if the parties do not comply with the award, the participants were aware that the award is enforceable by law. Arbitration's wide recognition with no alternative for economic and swiftness was another reason to be preferred. Some participants were in view that arbitration reduces problems and helps maintaining business relationship among parties. For some participants it is the mandatory legal provisions that forces them to opt it and others preferred it due to the competent tribunal and the freedom to select the panel members who better understand the local conditions.

Keeping the punctuality in implementation a side, the key reasons why the participants preferred the local arbitration are: relatively low cost; easy in communication; easily accessible; mature, professional, fair and unbiased award; and selection of an appropriate arbitration available in the market. Selection of local arbitration reduces the financial, mental and physical stress. Therefore, normally domestic contractors prefer Nepali tribunal but international and/or ICB nature contracts require international rules of arbitration like ICC, SIAC, ICADR, etc.

Those who did not preferred mentioned that the tribunal hesitates to give decision against the interest of the employer for two reasons: most of the members of the tribunal are ex-government employees; and to win the clients trust as the contractual documents are linked with the selection of the tribunal. Some others added that they do not prefer due to the level of interference by the court and reluctance of the government parties to execute the award. Likewise, for low value claim the arbitration is never preferred as it is expensive and a significant loss to the contractors. They blamed that it has been difficult to get the value of money going through the arbitration.

Informants added that the preference is linked with the competence of the tribunal. Others argued that there was unreliability of ethical commitments and other claimed that some of the panel

members were found to be in conflict of interest. Some preferred conditionally that a lot of changes have to be brought in. They recommended that continuous learning on technical issues and legal works has to be practiced for the sustainability of the arbitral process. There was a recommendation demanding for a mandatory use of Nepali arbitration at least for small to medium value projects, which helps the arbitration grow gradually and professionally.

4.4.2 Findings and discussion

Influences of complexity of disputes

The analysis reveals that the complexity of the dispute has a significant, albeit inverse, impact on the effectiveness of arbitration. The finding supports the claim of Soon (2010) who noted that even the usual characteristics of contract documents have increased in ambiguity, complexity, and adversarial influences. Participants do not consider the cultural background of the participants as a key factor of complexity to influence the tribunal. There is a widespread belief that the parties' lack of commitment to their promises and obligations makes disputes more complicated. In such circumstances, the interest-based relational of conflict resolution theory can be useful in reducing the complexity of the dispute. The importance of the theory of personality traits is attracted by the parties' cooperation in responding to the tribunal and assisting in the reduction of complexity. The notion of public policy and good governance is challenged by staff mobility and a lack of accountability in public institutions, which are the key factors in the complexity of disputes that cause the award to be delayed.

The findings infer an inverse correlation between the complexity of the disputes and the competence of the tribunal to influence on the effectiveness of arbitration. While the complex disputes demand highly competent tribunals, having highly competent tribunal reduces the complexity of the disputes. The study also confirms a strong correlation between the complexity of the dispute and the approaches to presentation of evidence as only the strong approaches to presentation of evidence can help reduce the complexity of disputes. There exists a conditional relation between the complexity of dispute and the size of the tribunal to influence the effectiveness of arbitration. The study supports views of Stipanowich et al. (2014) that the complexity of the dispute calls for a diverse and competent group of arbitrators. A well composed tribunal helps

reduce the complexity of the disputes. The participants did not discuss any relationship between the complexity of the dispute and the claim value.

Influence of competence of the tribunal

The majority of participants believe that the tribunal is capable in terms of knowledge, abilities and personality attributes, but that there is always room for growth. According to the study, the tribunal has failed to persuade its clients that they uphold impartiality, justice, and honesty, which runs counter to the idea of the rule of nature. There have been claims that the panel members are not well updated on the new development around the world lacking both updated technical and legal knowledge and experience which drives them demonstrate subjectively which is countered by the claim that only insignificant cases are overturned by the courts. As dictated by the theory guiding the arbitration process, the panel members must possess the necessary skills to resolve conflicts in a way that may be upheld in court.

While interviewees agree that choosing a competent panel member is essential for a successful arbitration, favoritism among arbitrator groups is an issue that has been revealed by the study, and the establishment of organization(s) that are similar to the NEPCA confirms the claim. The crucial point is how the arbitration can be conducted in accordance with the law of nature if there is bias in the selection of the panelists themselves.

Lack of faith in the system itself is apparent. The clients believe that the arbitrators are swayed by the contractors therefore the majority of the awards are in their favor. Similar allegations have been made by contractors, who claim that most arbitrators are former employees of public organizations hence favor clients because they want to win future businesses. This finding is in line with the conclusion by Mishra et al., 2022. Such claims erode the public's confidence in the tribunal. The parties have not been persuaded of the arbitral community's ability to be unbiased.

The participants were in view that the competence of the tribunal is conditional to the approaches to the presentation of evidence and the adequacy of the size of tribunal as the adequacy of the size of the tribunal helps fill gaps for the effective arbitration.

Influence of adequacy of size of the tribunal

The finding implies that a three-person tribunal is the best size. Concerns about a tribunal with more than three members are controversial. Some people, who agreed with the provision of the Nepalese AAct, believed that a panel with more than three members was necessary, depending on the gravity and complexity of the disagreement. However, others had reservations. There have been concerns about the oversized tribunal, with the argument that a size of more than three does not improve the arbitration and may even make the dispute more difficult, which would be detrimental to its effectiveness.

The adequacy of the size of the tribunal has strong correlation with the competence of the tribunal. The results confirm that multi-member tribunal helps reduce the conflict of interest among the panel and contribute for unbiased and balanced award to ensure arbitral effectiveness. Multi-member panel have opportunity of sharing knowledge and experience to bridge gaps enhancing competence of tribunal for the contribution of quick and quality award. The composition of the panel member is an important factor within the adequate size of the tribunal. These are in line with the resource acquisition model of the theory of effectiveness for an effective settlement of disputes.

Influence of approaches to the presentation of the evidence

According to the study, evidence presentation strategies have a favorable impact on how effective an arbitration is. Participants claimed that in order for arbitration to be effective, evidence documents must be supported by facts, which is consistent with the philosophy of judicial decision-making, which holds that decisions should be founded on the facts of the case in consideration of the rules and regulations (Segal et al. 1995).

The failure of public authorities to reply and provide the necessary evidence on time, which is against the notion of good governance, is one of the biggest obstacles to the arbitral effectiveness. According to the data, parties try to mislead the tribunal by submitting unrelated evidence. Participants have supported the necessity of investigative approaches for resolving complicated disputes, which is in line with rule 31-3-c. Participants agreed that using qualified experts to present the facts can be effective, which is likely to make dispute resolution simpler, faster and

more transparent while still satisfying all parties, as defined by the resource acquisition model, the right resources on the right task at the right time determines the effectiveness.

The study finds a direct correlation between the approaches to the presentation of evidence and the competence of the tribunal. The tribunal needs to be competent enough to focus on serious and sensitive issues to analyze and evaluate the evidence in detail. Documents presented systematically and adequately assist the tribunal make a swift decision. The trust built by the arbitrators maintaining equality between parties empowers parties to be open and flexible to present the fact evidence and the results empowers the application of arbitration Act. The finding is in line with the theory of judicial decision making.

Influence of claim value

The impact of claim value on the effectiveness of arbitration is viewed differently by different participants. According to the study, a higher claim invites more issues that could complicate the dispute and malpractices that could jeopardize personality features, which would slow down the proceedings.

According to those who advocated for the positive influence of claim value, higher claim amounts result in higher fees, which motivate arbitrators for two reasons: financial gain and the sensitivity of the matter; therefore, extra efforts can be expected for a better decision, which is supporting the participants' satisfaction model of theory of effectiveness. The participants stated that most parties strive to make more extravagant claims than are legitimate and fair, which already inflates the claim amount and encourages the panel members to effectively award disputes, so arbitrators do not need to engage in dishonest bargaining. The claim's worth has a positive and negative impact on the arbitrators' personalities.

Assessing effectiveness of arbitration

The thematic analysis indicates that the participants are in the hope that the arbitration is positively effective as there are many positive aspects in compare to negative. The claim for only an insignificant number of awards are overturned by the courts adds value in the evaluation of the effectiveness of the arbitration inferring that that the major problem is not in the quality but in the implementation of the award. The experts are concerned that the expenditure made on arbitration is being wasted for private parties because the incompetence of the public bodies frequently renders the arbitration useless. The prejudice perception that is emerging that the arbitration ruling should not be taken as final is a worse aspect for the effectiveness of the arbitration.

The finding is that the public entities are the one who would mostly prefer going to the court to avoid risk of being investigated by the oversight agencies, which is in line with the observation by Mishra, 2022. Knowing that only an insignificant number of awards are overturned by the court, if the public entities make it as a trend of going to the court, it violates the theory of public policy and good governance. It is important that the provision mentioned under Section 16-2 of the AAct (1999) is used carefully. The contractors normally avoid the litigation and this could be due to the fear of damaging the business relationship as claimed by Stipanowich, 1998, which is normally not a fear for the public entities.

4.5 Triangulation analysis

Influence of the dispute factors on the effectiveness of arbitration

Though, statistically the complexity of the disputes does not significantly influence the effectiveness of arbitration, the qualitative analysis shows a strong but inverse influences on the effectiveness of arbitration confirming with Abwunza et al., 2021. The quantitative analysis indicates that complex contract documents, involvement of more parties in a dispute and the increased number of sittings of the tribunal influences the effectiveness of arbitration and the thematic analysis confirms that the natures of contract documents have become more ambiguities leading to complexity causing adversarial influences. Both quantitative and qualitative finding indicates that the language barrier do not much influence the effectiveness of arbitration practices in Nepal and the participants' diverse cultural background is not an influencing factor of

effectiveness of arbitration. The quantitative finding indicates that the dispute gets complex due to the lack of sincerity of the parties to their words and responsibility. Mutual cooperation among the stakeholders in responding to the tribunal helps reduction of the complexity of disputes. Staff mobility and lack of accountability in public entities is a challenge.

The competence of the tribunal has statistically significant influence on the effectiveness of the arbitration and this finding is supported by the qualitative analysis as well. The triangulation analysis shows that the tribunals are knowledgeable and the arbitrators demonstrate strong technical and functional skills in the construction management. However, informants are in view that there is need of practice of continuous improvement. Given only an insignificant number of cases are overturned by the courts, the tribunal has failed to convince its clients that they highly maintain impartiality, fairness and integrity. The favoritism within the groups of arbitrators is an issue unveiled by the study. The qualitative analysis also indicated that there seems lack of trust on the system, which deteriorates the trust on the tribunal.

The adequacy of the size of the tribunal has statistically significant influence on the effectiveness of the arbitration. The quantitative data analysis infers that the size of the tribunal is adequate to enhance impartiality and avoidance of the conflict of interest. The findings of qualitative analysis also supports the finding of the quantitative analysis. The tribunal size of three is an ideal. But there is mixed views on more than three member tribunal. Informants were in view that an oversized tribunal, with more than three panel members, does not add value to the arbitration instead creates ambiguity leading the dispute to complexity in nature negatively affecting the effectiveness. The composition of the panel member is an important factor within the adequate size of the tribunal.

The approaches to the presentation of the evidence has statistically significant influence on the arbitral effectiveness and the qualitative analysis partially supported the finding of quantitative analysis. The informant argued that evidential documents are needed in complete with facts for effecting arbitration. However, the participants were concerns about the lack of good governance practices that exist in the public offices in responding to the tribunal to present the required evidence on time.

The claim value has no statistically significant influence on the arbitral effectiveness. But the finding of qualitative analysis indicated that there is a mixed perception on the influence of claim value on effectiveness of arbitration.

Correlation analysis of dispute factors

Though statistically there was no strong correlation between the independent variables to influence the effectiveness of the arbitration, the thematic analysis confirmed that the different dispute factors except the claim value correlate significantly. The analysis didn't find enough justification to claim a significant correlation of claim value over other four dispute factors, but it was considered as a measuring factor to determine the complexity of the dispute.

Unlike to the statistical findings, the thematic analysis infers that the complexity of the disputes and competence of the tribunal are inversely correlated with each other to influence the effectiveness of arbitration. While the complex disputes demand highly competent tribunals, the highly competent tribunal reduces the impact of the complexity of the disputes. Similarly, a conditional relationship between the complexity of the dispute and the size of the tribunal to influence the effectiveness of arbitration is noticed. The complexity of the dispute calls for a diverse and competent group of arbitrators. There exist an inverse correlation between the complexity of the dispute and the approaches to presentation of evidence. A strong approach to presentation of evidence and well composed tribunal help reduce the complexity of the dispute.

Statistically, the correlation between competence of the tribunal and the adequacy of the size of the tribunal is weak positive but significant. The thematic analysis shows that the competence of the tribunal has a strong positive linear correlation with the adequacy of the size of the tribunal. Formation of a right size tribunal is adequate to fill the gaps in the competence of the tribunal. The qualitative study finds a direct correlation between the approaches to the presentation of evidence and the competence of the tribunal. The approaches to the presentation of the evidence are equally important for the tribunal to be considered as competent.

Likewise, a weak positive but statistically significant correlation exist between the adequacy of the size of the tribunal and the approaches to the presentation of the evidence. This correlation is

strongly supported by the thematic analysis. For a tribunal to be effective, the approaches to the presentation of the evidence and the adequacy of the size of the tribunal are equally important.

Assessing Effectiveness of Arbitration.

The statistical finding is that the arbitration process cannot be claimed as effective in Nepal for settling disputes involving construction contracts. Thematic analysis reveals, however, that participants are hopeful about the arbitration's effectiveness because there are more positive features than negative. The data indicates that the major problem is not in the quality but in the implementation of the award. According to the study finding, the arbitration is not functioning due to the negligence of the public entities.

The findings of the qualitative analysis support the notion that arbitration is the most secure forum for dispute settlement if public organizations and oversight bodies fully comprehend its guiding principles. All disputed parties and the arbitrators must take responsibility for their part in resolving the dispute and enforcing the ruling in order to guarantee that good governance is implemented in the arbitral arena.

The triangulation analysis suggests that the different dispute factors have a mixed effect on how effective the arbitration is at resolving disputes involving construction contracts in Nepal.

4.6 Overview

In this chapter the available information and collected data were analyzed to come to the findings. The findings were discussed, interpreted and triangulated to answer the questions of this research. The next chapter covers the summary, conclusion and implication of the study.

Chapter 5

SUMMARY, CONCLUSION AND IMPLICATION

5.1 Introduction

This chapter focuses on the summary of the main area of the study followed by conclusion and implication. The first section reviews in brief the previous chapters and come to a conclusion on the effectiveness of the arbitration in order to highlight implications.

5.2 Summary

The objectives of this study were to examine the influence of dispute factors on the effectiveness of arbitration practiced in Nepal; to examine the effectiveness of the arbitration in resolving construction contract related disputes in Nepal and to examine the variation in the perception on effectiveness of arbitration with respect to the gender, age, geographic representation, qualification, profession, position, stakeholders, experience on dispute, number of cases experienced, maximum value of claim experienced and the type of arbitration encountered.

To evaluate the existing status and be updated on the existing knowledge on the research topic, various sources of information including articles, research papers, reports and journals were reviewed. The key dispute factors that may influence the effectiveness of arbitration were identified as: complexity of the dispute, competence of the tribunal, adequacy of the size of the tribunal, approaches to the presentation of evidence and the claim value. The three crucial indicators of effectiveness: cost, time and quality of award were used to access the effectiveness of arbitration. The key dispute factors were used to achieve the first objective and the indicators were used to achieve the second objective.

The methodology adopted in this study was a sequential explanatory mixed-method. A combination of quantitative and qualitative data were collected and analyzed using the deductive reasoning approach. The primary data for quantitative research were collected using questionnaires survey and the secondary data were collected from reports and journals published by NEPCA and other sources. The primary data for qualitative research were collected using structured written

interview in the form of open-ended questions which were distributed together with the questionnaires survey. A follow up unstructured interview was also conducted with the selected experts. Supplementary data were obtained through follow up with a few respondents, participants and experts. The data was tabulated and comprehensively analyzed in the previous chapter. The result was summarized as finding and discussed in detail to answer the research questions.

5.3 Conclusion

The study has answered the entire questions which were raised in Chapter 1. The answers of these questions were discussed in detail on Chapter 4, data analysis. The limitations and implication of the study were also discussed. This section of the report summarizes the key arguments that answers the questions fulfilling the objectives of the study.

The first objective was to examine the influence of dispute factors on the effectiveness of arbitration practiced in Nepal. There was one research question associated with this objective. The question was ‘Is there any influence on effectiveness of arbitration due to dispute factors?’ The research hypothesis developed was ‘there is significant influence of the dispute factors over the effectiveness of arbitration’. There were five dispute factors under study.

The study comes to the conclusion that there is no statistically significant relationship between the complexity of the dispute and the effectiveness of arbitration, but the thematic analysis finds that there exist an inverse relationship between the two. The study also concludes that the cultural diversity of the participants has little or no influence on the Nepali tribunal.

The study concludes that there exists statistically significant influence of competence of the tribunal, the adequacy of the size of tribunal and the approaches to the presentation of the evidence on the effectiveness of arbitration which were corroborated by the thematic analysis as well. The effectiveness of arbitration is found to be strongly and positively influenced by the tribunal’s competency, its adequacy in size and the approaches used to present the evidence. The study further concludes that there is statistically no significant influence of claim value over the effectiveness of the arbitration, but the thematic analysis revealed a mixed perception of roughly fifty-fifty split. Based on a combined analysis of descriptive, inferential and thematic data, the

study failed to assert a substantial influence of the claim value over the effectiveness of the arbitration.

The second objective was to examine the effectiveness of arbitration in resolving construction contract related disputes and only one question was associated with this objective. The question raised was ‘Has the arbitration become effective in resolving construction contract related disputes?’ The research hypothesis for the question was ‘the arbitration is significantly effective in resolving construction contract related disputes’.

The descriptive and inferential analysis on quantitative data and thematic analysis on qualitative data were performed. The conclusion is that the study failed to claim that the arbitration practiced in Nepal in resolving disputes of construction contract is effective on the basis of the cost, time and the acceptance of the award. All the stakeholders, clients, contractors and arbitrators/experts, have equally important role to make the arbitration effective. The three primary causes of failing to claim the arbitral effectiveness are: lack of seriousness of the clients, mostly the public entities as respondents; excess and unreliable claims by the claimant, mostly the private entities as claimants and the growing prejudice perception of not considering the award as final for implementation. The study further concludes that while the first three of the essential requirements for arbitration to exist - a dispute exists; an arbitrator has been appointed to resolve the dispute; and the parties have been given opportunity to present arguments and/or evidence in support of their respective claims – are followed in practice, the fourth but principal criterion - the parties consented to accept the arbitrator’s ruling – is not being met. Where does arbitration exist if the parties choose to take every dispute to court instead of following their own accord to accept the arbitrators’ decision? It is only because of the obligatory legal provisions the contractual parties, particularly contractors have chosen arbitration. If there were freedom, it is unlikely that they would choose to use an arbitration tribunal where there is no established mechanism for enforcing the awards, even if the awards were the outcome of a careful consideration.

The third objective was to examine the variation in the perception on effectiveness of arbitration with respect to the gender, age, geographic representation, qualification, profession, position, stakeholders, experience on dispute, number of cases experienced, maximum value of claim experienced and type of arbitration encountered. The question associated with the objective was

‘Is there any variation on perception on effectiveness of arbitration according with the variation in their gender, age, geographic representation, qualification, profession, position, stakeholders, experience on dispute, number of cases experienced, maximum value of claim experienced and type of arbitration encountered?’ There were multiple research hypothesis developed for this question. The study concludes that except for the genders, there was no significance difference in the mean perception on effectiveness of arbitration with respect to the groups of respondents based on age, geographical representation, qualification, profession, position level, stakeholders’ groups, years of experience on dispute, number of cases experienced, value of claim experienced and the type of arbitration encountered.

Finally, the study failed to claim that the arbitration practice in Nepal to resolve the construction related contractual disputes is effective. There is no significant difference in the perception of the participants from diverse groups, except gender. Though, statistically not supported, the thematic analysis depicts that informants were in view that there exist correlations among dispute factors.

5.4 Implication

The construction industry plays a significant role in the national economy. Dispute in construction industry is ever raising and growing. If the disputes are promptly resolved that may severely affect the duration and budgetary aspect of the construction projects (Moza et al., 2017). Therefore, given court proceedings are time consuming, expensive and lacking in technical expertise, arbitration as an alternative dispute resolution option is required by law.

Although the construction industry of Nepal has been using arbitration for several years now, there are not enough research on how well it works to resolve disputes involving construction contracts. Therefore, it was important to carry out a fact-finding study so that shortcomings, if any, could be promptly fixed.

The following are the implications of the findings discussed above:

- The study finds that there appears to be a lack of trusts between the parties and the tribunal. A strong mechanism needs to be established to strengthen the trust. For the sake of good governance, all the stakeholders must be accountable for any delays or losses brought on

by their negligence, particularly when it comes in resolving the disputes over public interest construction projects.

- The oversight bodies of the government must be educated about the philosophy, guiding principles and objectives of the arbitration. The need for better arbitration award implementation must be given considerable consideration.
- The parties must acknowledge that, in general, the arbitral awards are founded on the facts and evidence that the parties bring to the tribunal in accordance with a timetable that has been mutually agreed upon. According to the arbitration acts and regulations, the parties choose the panel members and decide how to present the evidence and the arbitrators control the proceedings and the decision. Therefore, if the tribunal is not performing successfully all parties involved are equally accountable.
- There are some mixed match results on the study. It is strongly recommended that more research be done on the topic or related issues.
- Even if the research occasionally reveals unpleasant and unexpected facts, much more research is needed to advance the arbitration practice in Nepal. Innovation is made possible by research. It was discovered while reviewing the NEPCA bulletins that there were very few articles created scientifically based on the cases handled by NEPCA. Therefore, it is advised that the NEPCA secretariat take into account Rule 49-6 and allow for research related activities on the cases handled by the NEPCA, with the understanding that a certain level of confidentiality must be upheld.

References

- Abwunza, A. A., Peter, T. K., & Muigua, K. (2019). Effectiveness of Arbitration in Contractual Disputes: Tension Between procedural Efficiency and Award Quality. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 11(2). [https://doi.org/10.1061/\(ASCE\)LA.1943-4170.0000290](https://doi.org/10.1061/(ASCE)LA.1943-4170.0000290)
- Abwunza, A. A., Peter, T. K., & Muigua, K. (2021). Explaining the Effectiveness of Construction Arbitration: An Organizational Justice Perspective. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 13(3), 1–62. [https://doi.org/10.1061/\(asce\)la.1943-4170.0000479](https://doi.org/10.1061/(asce)la.1943-4170.0000479)
- Acharya, S. (2019). Implication of International Instruments in ADR Process; an Experience of Nepal. *SSRN Electronic Journal*, 1–11. <https://doi.org/10.2139/ssrn.3409702>
- Acharya, S. R. (2018). Laws of Arbitration in Nepal. *NCC Journal*, 3(1), 181–184. <https://doi.org/10.3126/nccj.v3i1.20261>
- Adhikari, G. P. (2021). Calculating the Sample Size in Quantitative Studies. *Scholars' Journal*, 4(December), 14–29. <https://www.nepjol.info/index.php/scholars>
- Altunay, S. A., & Yilmaz, A. E. (2021). Median Distance Model for Likert-Type in Contingency Table Analysis. *REVSTAT - Statistical Journal*, 0(0). <https://www.ine.pt/revstat/pdf/MediandistancemodelforLikert-typeitems.pdf>
- Aryal, S., & Dahal, K. R. (2018). A Review of Causes and Effects of Dispute in the Construction Projects of Nepal. *Journal of Steel Structures & Construction*, 04(02). <https://doi.org/10.4172/2472-0437.1000144>
- Asaduzzaman, M., & Virtanen, P. (2016). Governance Theories and Models. *Global Encyclopedia of Public Administration, Public Policy, and Governance*,. https://doi.org/10.1007/978-3-319-31816-5_2612-1
- Atkinson, R. (1999). Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria. *International Journal of Project Management*, 17(6), 337–342. [https://doi.org/https://doi.org/10.1016/S0263-7863\(98\)00069-6](https://doi.org/https://doi.org/10.1016/S0263-7863(98)00069-6)
- Bahemuka, A. (2021). Alternative Dispute Resolution in the Construction Industry: A Case Study of Uganda. *International Journal of Construction Engineering and Management*, 10(3), 80–

88. <https://doi.org/10.5923/j.ijcem.20211003.03>
- Barkai, J. (2011). Mediation of Construction Disputes in the United States. *SSRN Electronic Journal*, 1–17. <https://doi.org/10.2139/ssrn.1435380>
- Bartlett II, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational Research: Determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal*, 19(1), 43–50.
- Bello, T. (2014). Why Arbitration Triumphs Litigation. *Singaporean Journal of Business Economics and Management Studies*, 3(2), 32–38.
- Bhattacharjee, A. (2012). Social Science Research: Principles, Methods, and Practices. In *USF Tampa Bay Open Access Textbooks Collection. Book 3*. http://scholarcommons.usf.edu/oa_textbooks/3
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Bvumbwe, C., & Thwala, D. W. (2011). An Exploratory Study of Dispute Resolution Methods in the South African Construction Industry. *2011 International Conference on Information and Finance*, 21, 32–36.
- Cakmak, E., & Cakmak, P. I. (2014). An Analysis of Causes of Disputes in the Construction Industry Using Analytical Network Process. *Procedia - Social and Behavioral Sciences*, 109, 183–187. <https://doi.org/10.1016/j.sbspro.2013.12.441>
- Carifio, J., & Perla, R. (2008). Resolving the 50-year debate around using and misusing Likert scales. *Medical Education*, 42(12), 1150–1152. <https://doi.org/10.1111/j.1365-2923.2008.03172.x>
- Carlston, K. S. (1952). Theory of the Arbitration Process. *Law and Contemporary Problems*, 17(4), 631–651.
- Chyung, S. Y. (Yonnie), Kennedy, M., & Campbell, I. (2018). Evidence-Based Survey Design: The Use of Ascending or Descending Order of Likert-Type Response Options. *Performance Improvement*, 57(9), 9–16. <https://doi.org/10.1002/pfi.21800>
- Coulson, R. (1983). Dispute Management under Modern Construction Systems. *Law and Contemporary Problems*, 46(1), 127–135. <https://doi.org/10.2307/1191583>
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). SAGE Publications, Inc.

- Daud, K. A. M., Khidzir, N. Z., Ismail, A. R., & Abdullah, F. A. (2018). Validity and reliability of instrument to measure social media skills among small and medium entrepreneurs at Pengkalan Datu River. *International Journal of Development and Sustainability*, 7(3), 1026–1037.
- Delİce, A. (2010). The Sampling Issues in Quantitative Research. *Educational Sciences: Theory & Practices*, 10(4), 2001–2019.
- Dugane, P., & Charhate, S. (2018). Arbitration: A Case Study in the Construction Industry. *International Journal of Civil Engineering*, 5(5), 58–63. <https://doi.org/10.14445/23488352/ijce-v5i5p111>
- Faris, J. A. (1995). *An Analysis of the Theory and Principles of Alternative Dispute Resolution*. University of South Africa.
- Fenn, P., Lowe, D., & Speck, C. (1997). Conflict and dispute in construction. *Construction Management and Economics*, 15(6), 513–518. <https://doi.org/10.1080/014461997372719>
- Gaito, J. (1980). Measurement scales and statistics: Resurgence of an old misconception. *Psychological Bulletin*, 87(3), 564–567. <https://doi.org/10.1037/0033-2909.87.3.564>
- Giaretta, B. (2016). Project Management in International Arbitration. *McGill Journal of Dispute Resolution*, 3, 66–85.
- Grant, C., & Osanloo, A. (2014). Understanding, Selecting, and Integrating a Theoretical Framework in Dissertation Research: Creating the Blueprint for Your “House.” *Administrative Issues Journal Education Practice and Research*, 4(2), 12–26. <https://doi.org/10.5929/2014.4.2.9>
- Guerra, A. L., Gidel, T., & Vezzetti, E. (2016). Toward a common procedure using likert and likert-type scales in small groups comparative design observations. *International Design Conference - Design 2016*. <https://www.researchgate.net/publication/307601241>
- Hall, R. H. (1980). Effectiveness Theory and Organizational Effectiveness. *The Journal of Applied Behavioral Science*, 16(4), 536–545. <https://doi.org/10.1177/002188638001600408>
- Hammer, C. S. (2011). The importance of participant demographics. *American Journal of Speech-Language Pathology*, 20(4), 261. [https://doi.org/10.1044/1058-0360\(2011/ed-04\)](https://doi.org/10.1044/1058-0360(2011/ed-04))
- Harmon, K. M. J. (2003). Resolution of Construction Disputes: A Review of Current Methodologies. *Leadership and Management in Engineering*, 3(4), 187–201. [https://doi.org/10.1061/\(ASCE\)1532-6748\(2003\)3:4\(187\)](https://doi.org/10.1061/(ASCE)1532-6748(2003)3:4(187))

- Ibrahim, M. (2015). The Art of Data Analysis. *Journal of Allied Health Sciences Pakistan*, 1(1), 98–104. www.researchgate.net/publication/283269432
- International Court of Arbitration. (n.d.). *Arbitration Rules (2021) and Mediation Rules (2014)*. International Chamber of Commerce. Retrieved August 28, 2022, from www.iccwbo.org
- Islam, M. Z., Said, T. F., Sumard, W. A., & Rahman, S. (2020). Factor Affecting Organizational Effectiveness: A Proposed Framework for Brunei's Public Sector. *International Journal of Asian Business and Information Management*, 11(2), 15–27. <https://doi.org/10.4018/IJABIM.2020040102>
- Kothari, C. R. (2004). Research Methodology Methods and Techniques Second Edition. In *New Age International Publishers*. New Age International (P) Ltd, Publishers.
- Kurniawan, F. (2015). Construction Dispute Resolution in Indonesia. *Proceedings of Narotama International Conference on Civil Engineering 2015*, 31–40.
- Leaua, C. (2012). Factors taken into consideration by the parties when appointing an arbitrator. *Procedia - Social and Behavioral Sciences*, 33, 925–929. <https://doi.org/10.1016/j.sbspro.2012.01.257>
- Maguire, M., & Delahunt, B. (2017). Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars. *All Ireland Journal of Teaching and Learning in Higher Education (AISHE-J)*, 8(3), 3351. <https://doi.org/10.1109/TIA.2014.2306979>
- Mashwama, X. N., Aigbavboa, C., & Thwala, D. (2016). Investigation of Construction Stakeholders' Perception on the Effects & Cost of Construction Dispute in Swaziland. *Creative Construction Conference, Procedia Engineering 164*, 196–205. <https://doi.org/10.1016/j.proeng.2016.11.610>
- Mathew, A., & Hassim, Z. Bin. (2015). The Philsophy of Arbitration. *International Journal of Business, Economics and Law*, 8(4), 104–112.
- McCormick, J. S. (1981). Effectiveness and Efficiency. *Journal of the Royal College of General Practitioners*, 31, 299–302. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1971043/pdf/jroyalcgprac00101-0045.pdf>
- Memon, M. A., Ting, H., Cheah, J.-H., Thurasamy, R., Chuah, F., & Cham, T. H. (2020). Sample Size for Survey Research: Review and Recommendations. *Journal of Applied Structural Equation Modeling*, 4(2), i–xx. [https://doi.org/10.47263/jasem.4\(2\)01](https://doi.org/10.47263/jasem.4(2)01)
- Minitab. (n.d.). *Minitab Assistant White Paper: 1-Sample t-Test* (pp. 1–18). Minitab Inc. Retrieved

- October 22, 2022, from https://support.minitab.com/en-us/minitab/21/media/pdfs/translate/Assistant_One_Sample_t.pdf
- Mishra, A. K., & Aithal, P. S. (2022). Effectiveness of Arbitration in Construction Projects. *International Journal of Management, Technology, and Social Sciences*, 7(1), 96–111. <https://doi.org/10.47992/IJMTS.2581.6012.0180>
- Mishra, A. K., Yadav, P., & Aithal, P. S. (2021). Dispute of the Contracts: A Case from Sikta Irrigation Project, Banke, Nepal. *International Journal of Case Studies in Business, IT, and Education*, 5(1), 169–185. <https://doi.org/10.47992/ijcsbe.2581.6942.0108>
- Moza, A., & Paul, V. K. (2017). Review of the Effectiveness of Arbitration. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 9(1), 1–9. [https://doi.org/10.1061/\(asce\)la.1943-4170.0000204](https://doi.org/10.1061/(asce)la.1943-4170.0000204)
- Nepal Law Commission. (n.d.). *Arbitration Act, 2055, 1999*. Retrieved September 10, 2022, from <https://lawcommission.gov.np/en/?p=13656>
- NEPCA. (1991). *Statute of The Nepal Council of Arbitration (NEPCA), 2048*.
- NEPCA. (2015). *Arbitral Procedures Regulations of NEPCA, 2072*.
- Nigel Preece, C., Shakibabarough, A., & Valinejadshoubi, M. (2013). Evaluating the Effectiveness of Mediation and Arbitration Processes in Resolving Disputes in the Malaysian Construction Industry. *International Journal of Civil Engineering (IJCE)*, 2(1), 21–28. <https://www.researchgate.net/publication/268391212>
- Norman, G. (2010). Likert scales, levels of measurement and the “laws” of statistics. *Advances in Health Sciences Education*, 15, 625–632. <https://doi.org/10.1007/s10459-010-9222-y>
- Novikova, I. (2013). Trait , Trait Theory. *The Encyclopedia of Cross-Cultural Psychology*. <https://doi.org/10.1002/9781118339893.wbeccp545>
- Puszczak, K., Fronczyk, A., & Urbański, M. (2013). Analysis of Sample Size in Consumer Surveys. In *Task force on quality of BCS data*. [https://www.oecd.org/sdd/leading-indicators/GFK K.Puszczak-sample size in customer surveys_paper.pdf](https://www.oecd.org/sdd/leading-indicators/GFK_K.Puszczak-sample_size_in_customer_surveys_paper.pdf)
- Segal, J. A., Songer, D. R., & Cameron, C. M. (1995). 10 decision making on the US courts of appeals.pdf. In L. Epstein (Ed.), *Contemplating Courts* (pp. 227–245). A Division of Congressional Quarterly Inc.
- Shittu, A. A., Tsado, A. J., Salaudeen, H. T., Odine, L. C., & Ibrahim, S. (2020). Effects of Disputes on the Delivery of Construction Projects in Abuja. *Environmental Technology &*

Science Journal, 11(2), 107–118.

Soon, T. K. (2010). *Dispute Resolution in Relation to Delay of Construction Project*. Universiti Teknologi Malaysia.

Uakarn, C., Chaokromthong, K., & Sintao, N. (2021). Sample Size Estimation using Yamane and Cochran and Krejcie and Morgan and Green Formulas and Cohen Statistical Power Analysis by G*Power and Comparisons. *APHEIT INTERNATIONAL JOURNAL*, 10(2), 76–88.

United Nations. (2005). Dispute Settlement - International Commercial Arbitration. *United Nations Conference on Trade and Development*. www.unctad.org/en/docs/edmmisc232add39_en.pdf

Westland, J. (2022). Information loss and bias in likert survey responses. *PLOS ONE*, 17(7). <https://doi.org/https://doi.org/10.1371/journal.pone.0271949>

Wibowo, M. A. (2009). The Contribution of the Construction Industry to the Economy of Indonesia: A Systemic Approach. In *International Symposium in Developing Economies: Commonalities among Diversities*. <https://www.irbnet.de/daten/iconda/CIB18138.pdf>

Appendix A: Cronbach's alpha

Table A1

Results of reliability test - Cronbach's alpha

	Value of Alpha							
	Cost Effectiveness	Time Effectiveness	Quality of award	Complexity of dispute	Competence of tribunal	Adequacy of size of tribunal	Approaches to the presentation of evidence	Claim Value
Data including "Don't know" ratings (Five-point Likert scale)	.548	.732	.683	.582	.799	.710	.741	.575
Data excluding "Don't know" ratings (Four-point Likert scale) *	.797	.830	.713	.668	.857	.866	.671	.811

Note: * Operational data

Appendix B: Correlation

Table B1

Correlation between different variables

		1	2	3	4	5	6
1	Correlation Coefficient	1					
	Sig. (2-tailed)						
	N	68					
2	Correlation Coefficient	-.05	1				
	Sig. (2-tailed)	.705					
	N	68	68				
3	Correlation Coefficient	-.06	.03	1			
	Sig. (2-tailed)	.607	.791				
	N	68	68	68			
4	Correlation Coefficient	.14	.19	.24*	1		
	Sig. (2-tailed)	.270	.129	.047			
	N	68	68	68	68		
5	Correlation Coefficient	-.02	-.19	.19	.31*	1	
	Sig. (2-tailed)	.858	.122	.113	.010		
	N	68	68	68	68	68	
6	Correlation Coefficient	.04	.22	-.13	-.05	-.10	1
	Sig. (2-tailed)	.733	.069	.288	.673	.421	
	N	67	67	67	67	67	67

Note. * Correlation is significant at the 0.05 level (2-tailed).

In the Table above 1 refers to 'Effectiveness of arbitration', 2 refers to 'Complexity of dispute', 3 refers to 'Competence of the tribunal', 4 refers to 'Adequacy of the tribunal', 5 refers to 'Approaches to the presentation of the evidence', and the 6 refers to 'Claim value'.

Appendix C: Questionnaires and references

Dear Respondents,

I am Shiva Paudel, an M.Phil. scholar at Central Department of Public Administration, Faculty of Management, TU, surveying to collect the information for research study on the topic ***“Effectiveness of Arbitration in Nepal: Construction Contract Disputes”***. Your honest, accurate and complete response on these questionnaires will be highly appreciated. **All the personal identifications will remain confidential.** The response and the data collected will solely be used for research purpose only.

While your cooperation is extremely essential for the success of this study, it is, of course, voluntary. Thank you, in advance, for completing the survey.

Sincerely,

Shiva Paudel

Email: mp77shiva@cdpa.edu.np

1. Demographic Information *(Mark the an appropriate one)*

- a. **Gender:** Male Female Others
- b. **Province:**
- c. **Age:**
- d. **Highest Qualification:** 10+2 or below; Bachelor; Masters & above
- e. **Profession:** Engineering; Law, Other
- f. **Position/ Level (N/A for arbitrators):** Top; Middle; Low
- g. **You represent as (N/A for Arbitrators):** Client, Contractor Other
- h. **You have experienced as (N/A for Arbitrators):** Claimant Responder Both None
- i. **Number of constructions disputes you encountered:** 1-2; 3-5; More than 5
- j. **Type of arbitration you have been involved:** Ad hoc (Patake); Institutional; Both; None
- k. **Maximum value of claim experienced:**
 Amount not specified; ≤ 30 million > 30 million

2. Independent Variables

Please indicate to what extent you agree on the given statements.

(1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree and 5 = Don't know)

SN	Elements	Scales	Reference
A	Complexity of the Dispute		
i	Complexity of contract document influences the effectiveness of the arbitration.	1 2 3 4 5	Abwunza et al., 2021. Aryal et
ii	No of parties involved in a dispute influences the effectiveness of the arbitration.	1 2 3 4 5	al., 2018. Shittu et al., 2020. Rule
iii	Effectiveness of the arbitration is influenced by the language barriers.	1 2 3 4 5	15, 24, 28, 31, 38, 41, 47 & 58,
iv	Effectiveness of the arbitration is influenced by the participants' diverse cultural background.	1 2 3 4 5	APR NEPCA, 2016. Section 5,
v	Effectiveness of the arbitration is influenced by the number of sittings.	1 2 3 4 5	13 AAct, 1999
B	Competence of the Tribunal		
i	Tribunals are knowledgeable in construction disputes.	1 2 3 4 5	Islam et al., 2020. Abwunza et al., 2021.
ii	Arbitrators demonstrate strong technical & functional skills.	1 2 3 4 5	Section 9. 11, 18 AAct, Thomas
iii	Arbitrator possess strong interpersonal skills.	1 2 3 4 5	Hobbes' Natural Law; Rule 22 &
iv	Arbitrators have quality to maintain fairness and impartiality.	1 2 3 4 5	24, APR NEPCA
v	Arbitrators have strong ability to perform neutrally and independently.	1 2 3 4 5	
C	Perceived adequacy of the size of the tribunal		
i	There is adequacy of the size of the tribunal.	1 2 3 4 5	Abwunza et al., 2021. Section 5,
ii	Multi-member tribunals enhance impartiality and avoidance of the conflict of interest.	1 2 3 4 5	AAct, 1999; Harmon, 2004;

iii	Multi-member tribunals enhance quality of the award.	1	2	3	4	5	Thomas Hobbes'
iv	Multi-member tribunal produce better & stronger awards.	1	2	3	4	5	Natural Law.
v	Multi-member tribunal bridges knowledge & skill gaps, enhancing the competence of the tribunal.	1	2	3	4	5	

D Approaches to the presentation of evidence

i	Number of experts and fact witness you present produce effective arbitration.	1	2	3	4	5	Abwunza et al., 2021. Rule 25,
ii	There are enough choices of presentation techniques.	1	2	3	4	5	26, 31, 36 APR
iii	Tribunal guides the disputants in presenting evidences.	1	2	3	4	5	NEPCA, 2016.
iv	A carefulness of documentation effects the effectiveness of arbitration.	1	2	3	4	5	Thomas Hobbes' Natural Law.
v	Tribunal provides equal opportunity to all the parties.	1	2	3	4	5	Section 22, AAct, 1999

E Claim Value

i	Low-claim disputes are less complex.	1	2	3	4	5	Rule 31 & 33,
ii	Low amount claimed disputes are awarded effectively than the high amount claimed disputes.	1	2	3	4	5	APR NEPCA, 2016.

3. Indicators of Dependent Variables

Please indicate to what extent you agree on the given statements.

SN	Elements	Scales	Reference
A Cost effectiveness			
i	Cost of dispute resolution in Nepal is reasonable.	1 2 3 4 5	Abwunza et al., 2021
ii	Cost of resolving the dispute is within expectation.	1 2 3 4 5	
B. Time effectiveness			
i	Time taken for arbitration is reasonable.	1 2 3 4 5	Abwunza et al., 2021
ii	The total time taken to award is as expected.	1 2 3 4 5	

C	Quality of award						
i	Parties accept the award & comply voluntarily.	1	2	3	4	5	Rule 24-6, APR
ii	If award is not favorable, parties go to the court.	1	2	3	4	5	NEPCA, 2016.
iii	It is difficult to continue business among parties.	1	2	3	4	5	Abwunza et al., 2021.
iv	Parties refer future disputes to the arbitration.	1	2	3	4	5	Section 16-2, Act, 1999.

4. Open (Written Interview) Question:

- a. Please summarize your experience, how the complexity of the dispute influences the effectiveness of the arbitration.
- b. Please describe briefly your experience on the competence of the tribunal/arbitrators and its influence on the effectiveness of the arbitration.
- c. Please share your experience briefly on the adequacy of the size of the tribunal and its influence on effectiveness of the arbitration.
- d. In your experience, how can the approaches to the presentation of evidence be more effective?
- e. What type of relationship have you observed between the claim amount and the effectiveness of the arbitration?
- f. How effective, do you think, the arbitration is in resolving construction dispute in Nepal? Please share your views.
- g. Please share your views on why should the clients / contractors prefer or not prefer to refer future disputes to the Nepali Tribunal?

5. About yourself (This part is NOT mandatory)

This information will be used only if there is further need of clarification.

Your name:

Company Name:

Mobile No:

Email:

Thank you note: I take this opportunity to thank you very much for your time and effort in completing the questionnaire. If you wish to have the conclusion of this work, please feel free to let me know.