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Effectiveness of Amendment of GCC on Claims by CPWD in 2019

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Abstract: ***Contracts are highly crucial in any sector, and we all know that claims are quite easy to make in construction projects because there are so many parties involved and each project has its own set of characteristics. In India, the majority of construction contracts are based on the GCC developed by the CPWD, and it has been discovered that due to the rigorous nature of the GCC and differences in the nature, site, and kind of projects, construction industry conflicts are highly widespread. The report aims to demonstrate the efficiency of the CPWD's revised GCC and make recommendations for reducing public contract disputes. An attempt has been made by using real-life arbitration cases and anticipating many parameters. The amended clauses have been analyzed by comparing them to the old clauses, and an assessment has been performed to determine the root reasons of the claims. To make the clauses more understandable, they've been divided into different categories, and then claims have been linked to the relevant factors in various arbitration cases.***
Keywords: Claims, Contract, Contractual Risks CPWD, Arbitration

I. INTRODUCTION

The construction industry is the second largest industry in the India, being next to agriculture. As per tenth five year plan of India roughly 44% of the country's plan outlay falls within the purview of construction activity during year 2002–2007. Majority of construction works are carried out through contracts. In India the most public projects used to follow the standard contract conditions formulated by the two government organizations namely Central Public Works Department (CPWD), and Military Engineering Services (MES) till recently. (K.C. Iyer, 2008)

Construction is currently one of the fastest expanding industries. This company is notable for the enormous amount of cases that it receives on a regular basis, as well as the fact that it is unique characteristics. This field is classified as "difficult, high-risk, and high-reward." It also involves a large number of stakeholders. Scenario planning eliminates the element of ambiguity in risk detection methods (Paul & Basu, 2016). Furthermore, it is quite useful. It's critical to constantly stay on time and under budget when working on a project. (Hesham A. Abdel-Khalek, 2019)

Construction contracts spell out the goals and procedures for each construction project. They should, in theory, be a simple-to-understand, mutually agreed-upon document that answers each project contingency. More reality, they frequently represent the owner's objectives, to which the profit-hungry contractor agrees, in the hopes that the document contains enough uncertainty to allow multiple interpretations. (C. William Ibbs, 1987)

This research study aims at determining the effectiveness of changes in GCC of CPWD on claims in public projects and the paper revolves around the hypotheses that amendment in GCC has resulted in reduction of claims. To achieve the aim an understanding of the relationship between the amended clauses and different claims has been covered in the first stage followed by root causes of various claims by taking different arbitration cases. An interview has been conducted to know the factors for claim reduction.

II. LITERATURE REVIEW

A. Introduction

A contract is just a formal written agreement between two parties, according to a layperson. However, this concept is insufficiently precise to be employed in contract law. To understand the term contract, several definitions have been proposed. In his book "Contracts: Instruments of Social Cooperation," English writer Pollock Macneil defines a contract as "a promise or collection of pledges that the law will enforce." In his book on contract law, Treitel defines a contract as an arrangement that creates legally enforceable duties and binds the parties to it. Contractual obligations are distinguished from other obligations by the agreement reached between the two parties. (maxwellgoko, 2012)

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Construction projects - Construction projects are complicated and one-of-a-kind processes. It is nearly impossible to forecast everything in advance due to these qualities. Variations occur as a result of significant changes in the initial project plan and contract terms. There are a lot of probable reasons for project adjustments that can't be ruled out. Weather conditions, for example, can be forecast. Humans, on the other hand, are responsible for the vast majority of variances. (Malyavin, 2014). Existing structures built to prior design norms and standards are frequently revealed to be vulnerable to damage due to insufficient detailing, miscalculated earthquake loads, material deterioration over time, and other factors (Yadav, et al., 2002). Facility managers are in charge of assessing the facilities in order to pinpoint the areas that require differing levels of competence and expenditures (Aiswarya Sreekumar, 2022). User satisfaction criteria is very much important when we consider construction projects (Gopikrishnan S, 2019).

Risk is a crucial factor in the construction business, and it is one of the most important factors that might influence a project's final cost. Due to a variety of circumstances, the inherent risk in the construction process has increased significantly during the last 50 years. Despite this, the mechanism of risk allocation has remained relatively unchanged (Hartman, 2000). (Kasana, et al., 2022) Emphasizes on the necessity of completing projects on schedule and within budget while maintaining high quality. When more than one entity (owner, contractor, consultant, etc.) is accountable for the project's execution, risk distribution is inevitable. In any project, making sure that every risk is identified and managed is a smart idea. This is a crucial phase because the allocation might have a considerable impact on the project members' behavior. (Zaghloul, 2002)

B. Contracts

Construction Contracts - The construction Industry in India is expected to reach $1.4 Tn by 2025 and it has received the 2nd highest FDI in the period 2000-2020. It works across 250 sub-sectors with linkages across sectors. The Real Estate Industry in India is expected to reach $1 Tn by 2030 and contributes to 13% of GDP. Under NIP, India has an investment budget of $1.4 Tn on infrastructure - 24% on renewable energy, 19% on roads & highways, 16% on urban infrastructure, and 13% on railways. Under the Smart Cities Mission till June 2021, 2,734 projects have been completed of the total 5,956 projects. (Padia, 2022)

A legally binding contract is an agreement that may be enforced in court. It is the most important tool used by institutions to control themselves. Partnerships and mutual understanding the opposing party there are five elements in all. Of a contract, all of which must be present in in order for the contract to be enforceable on the various parties these are the elements:

Legal Capacity, Offer & Acceptance, Consideration & Legal Objective (Zaghloul, 2002).

Parties Involved in Construction Contract



Figure 1 Parties Involved in Construction Contract (Author)

Similar to a project, a contract has a life cycle.

The main processes are the following:

Table 1 Process for Contract Management (Bellec, 2013)

Process	Description
Contract awareness	Consists of writing an explanatory overview of the contract's principal clauses. The added value of this summary is that it interprets and clarifies the contract in easy-to-understand language, making it accessible to non-legal stakeholders.
Negotiation	This is a contract manager's day-to-day activity that entails uphill preparation, a thorough search for common interests, a proactive and creative mutual approach, the development of objective criteria, and the promotion of a respectful relationship.
Risk management	This is comparable to project risk management, whose end product is a risk register with many of the same characteristics as those discussed in the PMBOK® Guide.
Conflict resolution	When the relationship between the customer and the project becomes too emotional, this is an important procedure to master. Nonviolent ways are one of the techniques that could be developed in this situation. Other processes that may be beneficial include: interaction, handling of deliverables, Data management that is crucial (personal, commercial, in confidence, intellectual property, etc.), levers for business use, contract termination

C. Claims

There are different authors who has defined claims in different manners. Most of them agrees on the same point that a claim is a contract adjustment due to changes or additions to the original contract. A claim is defined by the Canadian Law dictionary as an 'Assertion to the right to remedy, relief or property' or a 'failure to fulfill obligations under the contract'.

Construction industry is such a platform where people and different stakeholders with different priorities takes part with different knowledge of the industry. Stakeholders from different occupations in this complex setting each have their own goals and expect to maximize their own gains. Conflicts are unavoidable in the construction sector due to differences in perceptions among project participants. If confrontations aren't handled properly, they can soon devolve into disputes. One of the biggest things that prevents a building project from being completed properly is disputes. As a result, it is critical to understand the sources of disagreements in order to execute the construction project on time, on budget, and with the intended quality (Emre Cakmak, 2014).

Construction disputes happen fairly often; they are a reality on every construction project and could happen at any point in time during the design or construction phase of the project (Hall, 2002). Construction conflicts vary in shape, scale, and complexity, but they always have one thing in common: they are time and money consuming, and they frequently result in the severance of individual and excellent working relationships (Assah-Kissiedu, 2010).

Causes to arise claims in construction Industry - In the construction industry, it is very rare to see any work to be completed without any changes. Although a lot of efforts has been put to make the construction contracts but a perfect document to resolve these claims rising disputes are very rare. As a result dispute arises, usually due to change in the original design, differing site conditions, discoordination among different stakeholders and other factors. According to Thomas, there are some of the factors which lead to the disputes are Poor planning & scheduling, Scope changes, Design Discrepancies, Defective specifications, Ambiguous instructions, Errors & omissions, Work Suspension, Acts of God (Shuib, 2011).



Figure 1 Risk, Conflict, Claim and Dispute Continuum Model (Source: Author)

Fundamentals of Claim Management

To control the claims, stakeholders or parties who are involved in the project should have a good construction claim management. When we talk about the problems associated with the claims, it is very much important to see the associated party to that particular claim and who is responsible for that claim and how it is impacting the cost and time parameters related to the projects. (Norazian Mohammad Yusuwana, 2013) .

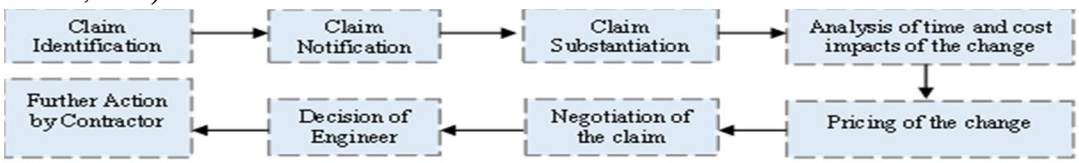


Figure 3 Claim Management (Source – Author)

D. Conflicts & Disputes

The complexity of today's construction projects is increasing. Construction is a process in which disputes are nearly guaranteed due to the complicated, interrelated, and protracted process of designing and building (R. McManamy, 1994). Furthermore, using multidisciplinary teams in a building project can lead to disagreements between the participants. Conflict and conflicts appear to be an unavoidable part of the construction industry, especially when most building projects are fraught with unknowns (Whitfield, 1994).

Causes of Disputes in the construction industry - When we say and concentrate upon the disputes and want to reduce it, main common factor is to keep in mind is the origin (P. Mitropoulos, 2001). A lot of research has been carried out in the construction sector, there are a lot of variables that can lead to conflict and disputes, and there are a lot of variables that can lead to conflict and disputes. Construction disputes, according to (Hons, 1979), have its own instinctive nature and characteristics, and hence the sources of disputes will differ from one project to the next. According to his research, there are five basic drivers of construction disputes: contract document flaws, defects, or omissions, failure of someone to count the cost of an activity at the start, altered condition, consumer reaction, and persons involved. Behavioral issues, contractual issues, and technological issues owing to ambiguity and lack of experience are three major underlying causes of conflicts, according to (Williamson, 1979).

E. Contracts in India

In India, the construction industry is the economy's second greatest contributor. It accounts for roughly 8% of India's Gross Domestic Product (GDP) (Shirish Sankhe, 2020). It also brings in the second-largest amount of foreign direct investment (FDI) into the country (Hindu, 2021). This industry has one of the highest employment rates. The construction and development industry employs a total of 40 million people (including indirect jobs) and generates an average of 2.7 new jobs for every lakh rupee invested (Today, 2020). Infrastructure in quickly developing countries such as India is improving, and it is prospering in both the commercial and public sectors. Government expenditure isn't well-monitored after it's completed, especially when it comes to asset upkeep. (Gopikrishnan Seshadhri, 2018). When it comes to contracts, finance is one of the most important things to consider, and when it comes to sustainable buildings, all of these factors are taken into account (Basu, et al., 2017).

In the Indian construction business, there are no standard forms of contracts. In India, unlike the United Kingdom or the United States of America, we do not have distinct construction regulations. Construction and engineering contracts are one of the types of contracts covered by the Indian Contract Act of 1872. The majority of these contracts are for civil engineering work. Any large contract including features of civil engineering, however, is commonly referred to as a construction contract (Kamath, 2021). Government housing projects cost a lot of money to build, and the upkeep of these assets costs a lot of money as well. To assure performance, the facility maintenance agency is responsible for the expenditures made on these assets. (Seshadhri & Paul, 2018). Industrialization and modernization have a significant impact on the construction industry, as well as the development of infrastructure in all linked industries. When calibrated with project execution methods, modern and advanced devices can prove to be a time-saving, error-free solution with a high-quality end product (Rahul Kumar Gupta, 2022).

Apart from the FIDIC Contracts, other contracts are often utilized, such as those mentioned by the Institution of Civil Engineers (ICE) and the Indian Institute of Architects (IIA). Government construction authorities, such as the National Highway Authority of India, implement their own contracts as standard contracts in accordance with the needs of the departments, particularly for public-private partnership projects (NHAI). Many government departments, including the Public Works Department, Delhi Metro Rail Corporation, Indian Oil Corporation, National Building Construction Corporation, Central Public Works Departments, and others, have their own standard contract forms (Sumeet Kachwaha, 2021). The exponential rise in the number of people impacted caused a demand-supply imbalance, increasing the strain on healthcare systems. (Ruchita Dasgupta, 2021). An energy efficiency retrofit is any alteration made to an existing structure or the physical and operational upgrading of a building system that improves energy performance. (Chaitali Basu, 2019). Fire is very much prone to any of the building and it can cause to ton of losses. (Neha Kumari, 2022)

India's construction industry is booming, with numerous current projects, and it is the country's third largest contributor to economic growth. Contracts are an integral element of every construction project's process. Most of the public infrastructure projects in India are carried out through central public agencies like Central Public Works Department (CPWD). In India, the CPWD's GCC is the most used contractual framework for construction. Considering the difficulties raised in the literature review, the GCC structure has scarcely received revisions over the years as a result of such studies. Due to the influence of international contract papers (verbatim) and the necessity to correspond with the interests of foreign financial institutions such as the World Bank and Asian Development Bank, the GCC format has recently improved (ADB). (Paul, 2019).

F. General Condition of Contract

The rights, obligations, and relationships of the parties concerned are enumerated in the general conditions section of the contract form. It specifies the obligations and privileges of each contractual party, as well as the norms that will regulate the relationship. GCC of CPWD, broadly covers the points mainly related to client, contractor, time, cost, quality, disputes etc. The clauses and claims pertaining to these clauses can be classified in different sub heads.

Being complex in nature construction projects, contracts are also becoming too much complex to resolve and mitigate the risks. Keeping these points in mind CPWD is open for suggestions to amend the clauses to give a proper balance of mitigation risks and comply all of the changes and trying to fill the loopholes which are there in the contract. Recently it has been seen that amendment has been done in 2008, 2014, and 2019.

1) *Categories of General Conditions* - General conditions encompass every aspect of the project which deals a variety of dynamics which can arise in construction projects. Categorization of GCC can be done in several parameters as shown in the table 3. Studies which has been done before and through FIDIC it can be seen that whole clauses has been divided on terms of employer, contractor, engineer, sub-contractor, staff and labor, plant, materials & workmanship, commencement, delays and suspension etc.

S.No.	Type	Clauses
1.	Security Related	1, 10B, 41
2.	Time Related	2,5
3.	Type of Contract Related	3,27
4.	Payment & Cost Related	4,7,7A, 9, 9A, 10CA, 12, 18A, 18B
5.	Completion related	8,
6.	Statutory Related	10C, 19, 19A, 19B, 19L, 20, 33,34, 40
7.	Work Related	11, 13, 14, 15, 16, 18, 30, 30A, 31, 32,
8.	Others	23,24, 25, 28, 29, 35,36, 37, 38, 39

Table 2 Types of Clauses (Source: Author)

a) *Security Related Clauses (SCR)* - These type of clauses basically deal with securities. It is related to every stakeholders related to work like owner, contractor & labour as can be seen in the clauses. Clause 1 - Performance Guarantee (It is basically from contractor side to perform the work satisfactorily to the owner), Clause 10B – Secured Advance on Materials (From owner to contractor for fetching materials like steel, brick, stone aggregate etc. – non-perishable material.) & clause 41 - Release of Security deposit after labour clearance (It is to assure that there any no dues to any labour from contractor side.

b) *Time Related Clauses (TRC)* – These type of clauses basically deal with time from the contractor and owner perspective. Clause 2 - Compensation for Delay (To the owner from contractor for delaying the project), Clause 5 - Time and Extension for Delay (Levy for compensation to the contractor)

c) *Type of Contract Related Clauses (TCRC)* - These type of clauses basically deal with contracts. There are different type of contracts and claims are different for each type of contracts. Clause 3 – When Contract can be Determined, Clause 27 – Lump sum Provisions in Tender.

Type of contract	Description	Claims
Item rate	Time consuming from department side	Less claims
Lump sum	Less time consuming but may be possible that contractor will quote something different	Moderate claims
EPC	All work from contractor, and may be possibility in disagreement in different stakeholders	Highest claims

d) *Payment & Cost Related (PCR)* – These type of clauses basically deal with payments to the contractor and it basically directly proportional to delay of projects and it automatically will increase the cost as time is related to cost directly and it will lead to claims and disputes. Clause 4 - Contractor liable to pay Compensation even if action not taken under Clause 3, Clause7 - Payment of intermediate certificate to be regarded as Advances, Clause 7A , Clause 9 - Payment of Final Bill, Clause 10CA - Payment due to variation in price of materials after receipt of tender, Clause 12 - Deviation, Extra Items and Pricing, Clause 18A - Recovery of Compensation paid to Workmen, Clause 18B – Ensuring Payment and Amenities to Workers if Contractor fails.

e) *Statutory Related Clauses (SRC)* - These type of clauses basically deal with the statutory taxes and bodies which ultimately rise to give rise to claims and disputes. Clause 10C - Payment on Account of Increase in Prices/Wages due to Statutory Order(s), Clause 19 - Labour Laws to be complied by the Contractor, Clause 19A , Clause 19B - Payment of Wages , Clause 19L – Contribution of EPF and ESI , Clause 20 – Minimum Wages Act to be Complied With , Clause 33 - Levy/Taxes payable by Contractor , Clause 34 – Conditions For reimbursement of levy/taxes if levied after receipt of Tenders , Clause 40 – Apprentices Act provisions to be complied with

f) *Work Related Clauses (WRC)* - These type of clauses basically deal with work related aspects like specifications, plants, equipment's, scope of work etc. It includes Clause 11 - Work to be Executed in Accordance with Specifications, Drawings, Orders etc. , Clause 13 – Foreclosure of contract due to Abandonment or Reduction in Scope of Work, Clause 14 - Carrying out part work at-risk & cost of contractor, Clause 15 – Suspension of Work, Clause 16 - Action in case Work not done as per Specifications, Clause 18 - contractor to Supply Tools & Plants etc., Clause 30 – Unfiltered water Supply, Clause 30A – Alternate water Arrangements , Clause 31 - Hire of Plant & Machinery, Clause 32- Employment of Technical Staff and employees

g) *Others* – This is miscellaneous category and it includes Clause 8 – Completion Certificate and Completion Plans , Clause 23 – Changes in firm's Constitution to be Intimated, Clause 24 - Life Cycle Cost, Clause 25 – Settlement of Disputes & Arbitration, Clause 28 - Action where no Specifications are Specified, Clause 29 – Withholding and lien in respect of sum due from Contractor, Clause 35 – Termination of Contract on death of contractor, Clause 36 - If relative working in CPWD then the contractor not allowed to tender, Clause 37 - No Gazetted Engineer to work as Contractor within one year of retirement , Clause 38 – Theoretical conception of Material, Clause 39 – Compensation during warlike situations

2) *Amendment in General Conditions of Contract* - In India, the CPWD's GCC is the most used contractual framework for construction. Unfortunately, there hasn't been enough study done to prove its effectiveness in terms of preventing disputes through proper claim management. Because of this, the GCC organization has barely undergone revisions over the years. Research, taking into account the issues raised by the literature review. In recent years, The GCC format has improved as a result of international influence. Contract documents (verbatim) must be aligned with international interests. World Bank and Asian Development Bank are two examples of funding institutions (ADB) (Paul, 2019). In previous years, the GCC of the CPWD has been amended. Changes were made in 2008, 2014, 2019, and other years, according to the reports. These modifications were made to make the contract less unclear and more useful in completing the job on schedule. Some of the clauses stated in the table below have been amended in 2019. If we look at the timeline, we can see that some of the sections on which frequent claims are based are being updated on a regular basis based on recommendations to close gaps and ambiguities. Clauses such as clause 2, clause 5, and so on.

It has been observed in amended clauses that some of the factors has been incorporated from owner point of view and some of it are from contractor relaxation point of view. Some of the things like cost index and price escalation has been kept in mind and then an increase or decrease in the rate of interest has been done.

III. CASE STUDIES DATA COLLECTION

A. *Introduction*

Twenty real-life arbitration conflicts were gathered for analysis from different arbitrators. Former CPWD personnel who had handled many of the department's arbitrations were chosen as arbitrators, and they were asked to offer some of their cases for examination after outlining the purpose and objectives. Of the research to keep the data and parameters as homogeneous as possible, the arbitration cases were collected solely from the CPWD, which is administered under the CPWD's GCC.

To protect confidentially, each arbitration case was issued a case number, and a log sheet was created to record the specifics of each case for future reference. The paper will henceforth treat each dispute as a "case," with neither the name of the arbitrator nor the circumstances of the arbitration dispute being revealed. For each case, documents relevant to the statement of claims and counterclaims, rejoinders, and award were gathered.

The repetitiveness and validity of the claims presented for arbitration were examined to see if there was a link between the occurrence of a claim and the contract circumstances that accompanied it. In the following section of this post, we'll go over the step-by-step approach that was employed to conduct the study.

B. *Methodology*

Methodology adopted in this thesis to understand the case study and relate it to the final outcome to understand the claims in any of the dispute is simple. As in previous chapter the clauses has been divided into different sections like statutory related, time related, cost and payment related, 10 cases before 2019 and 10 cases after 2019 has been taken and a claim data sheet has been made as per that. The claim datasheet will be consisting the claims, clauses pertaining to that claims, reasons, counterclaims, claimant amount, rewards and what was the arbitrator finding in that particular case.

C. *Case Datasheet*

In 2019, the GCC of the CPWD was amended. Essentially, there are 13 GCCs that have been updated and some changes have been made. Cases prior to 2019 were examined to determine which types of claims were submitted by the claimant and how much compensation was awarded to that claim prior to the change. The primary concept is to figure out whether the claim pattern is changing or staying the same before and after amendment. A table for one example was displayed, and all 20 cases were studied in the same way. The tables show the claims for all of the cases. ***Cases before 2019***

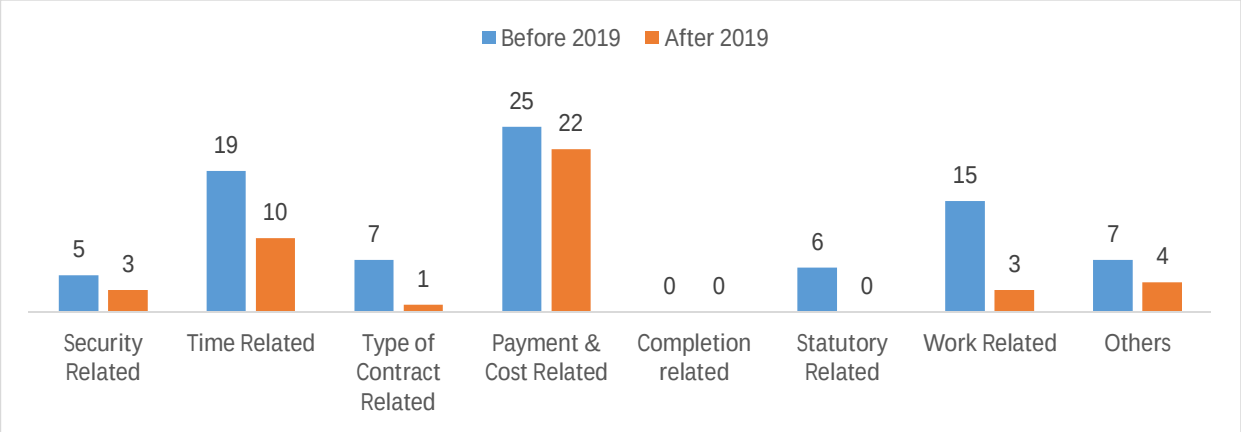
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S.No.	Type	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9	Case 10	Total
1.	Security Related	x	x	1	x	x	1	2	x	1	x	5
2.	Time Related	6	1	1	x	1	x	x	x	x	10	19
3.	Type of Contract Related	x	x	1	1	x	3	2	x	x	x	7
4.	Payment & Cost Related	1	2	x	15	2	x	x	4	1	x	25
5.	Completion related	x	x	x	x	x	x	x	x	x	x	0
6.	Statutory Related	x	2	1	1	x	1	x	1	x	x	6
7.	Work Related	1	1	x	x	x	x	10	x	3	x	15
8.	Others	1	1	2	x	1	1	1	x	x	x	7
Total Claims												84

Cases After 2019

S.No.	Type	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9	Case 10	Total
1.	Security Related	x	x	x	x	x	1	x	x	2	x	3
2.	Time Related	2	1	x	x	2	2	2	x	2	x	10
3.	Type of Contract Related	x	x	x	x	x	x	x	x	x	1	1
4.	Payment & Cost Related	3	5	2	1	1	2	4	4	x	x	22
5.	Completion related	x	x	x	x	x	x	x	x	x	x	0
6.	Statutory Related	x	x	x	x	x	x	x	x	x	x	0
7.	Work Related	1	x	x	x	1	x	x	x	x	1	3
8.	Others	1	1	x	x	x	x	x	1	1	x	4
Total Claims												43

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The cases which have been taken before and after 2019, though the number of cases are less, a conclusion can be drawn out from the study. It can be seen that the *cause related to the cost and payment factor is very much dominating in both the cases before and after the amendment.* It has been found that *number of claims are decreasing after the amendment*.
By looking into the cases before and after amendment the reasons for these claims have been identified. Reasons for these claims has been listed in the table below.

Claims	Reasons	Rewards
Security Money	Due to abandonment or reduction in the scope of work in between the work has been started and contractor has already submitted the amount, they ask for new proposal of performance guarantee.	It has been seen in the cases that if the delay in the handling over the site has been made by the client side and they have already submitted the earnest deposit then arbitrator genuinely give the rewards to the claimant side. • if scope of work has been reduced then the claims regarding the performance guarantee has been seen genuinely judged by the arbitrator that new performance guarantee amount should be issued.
Payment in R/A bills	In the cases it has been seen that these type of claims cam be genuine or fabricated. In some of the cases reduction in the payment has been found after some of the R/A bills but in some of the cases it has been seen that the R/A bills are not genuine and the amount are not as per the market standards.	If the claimant amount is resembling with the documents provided, mostly the amount has been rewarded to the parties.
Payment in Extra Items & Deviated Items	Sometimes it has been found in the cases that prices for deviated or extra items has not been sanctioned by the client side. • Problems are from both the side, sometimes it happens that contractor uses some different item as the item sanctioned in the tender is not available, so to complete the work in time, they use different materials. Sometimes it could be cheaper or sometimes costly. • Clients do not pass the bill on time and provide the amount to the contractor on time.	If the claimant amount is resembling with the documents provided, mostly the amount has been rewarded to the parties.
Incentive for early completion	If the scope of work has been reduced but due to some reason, clients has not reduced the completion period and contractor has completed the work beforehand. If the work has been completed before the stipulated time by the contractor	Rewards has been given in these cases to the claimant.
Foreclosure Of Contract Due to Abandonment or Reduction In Scope Of Work	Scope change due to lack of funds from client side Due to this, contractor has to bear the loss of extra equipment's, labors and machinery etc.	Mostly if the reason cited by contractor is correct and reduction of scope of work has been done by client then contractor are getting the rewards.

Interest for the delay	Non availability of site from the client • Justified delay of work due to risks registered in the risk registers • Due to commencement of election or such reasons • If site is in working conditions and renovation work has been assigned to contractor then non availability of site in one go.	Mostly the award has been made because it is a genuine concern.
Others	In this claim it has been seen that very few types of claims are coming and it is mainly regarding the cost of arbitration.	It has mostly been divided 50-50 to both the parties.

To validate and know other reasons for the claims an interview has been conducted with professional experts. Other factors are listed in the below table.

Factors	Reasons for claims
Payment & Cost Related	• Problem in issuance of completion certificate because of the work done by the contractor • Sometimes it also depends on the labor clearance to get the completion certificate • An extra item, or deviation in the item may lead to cost changes and will raise a claim
Work Related	• Reduction or abandonment of the work lead to raise a claim and because of the scope reduction it may rise to different factors like no use of the labour, facilities, equipment by the contractor
Time Related	• It is very important factor which should be kept in mind because two clauses related to these factor is one on behalf of the contractor and other is on the client side. • Proper understanding of the clauses may lead to the successful project completion. But, many a time there is a less understanding or manipulative understanding of the clauses lead to the claim.
Security Related	• The claims related to this particular factor is basically arose due to security money which could be earnest deposit or performance guarantee. It is generally withheld by the client due to not issuance of the completion certificate and as it could be a big amount so the contractor claims for it.
Type of Contract Related	• In this factor, claims relted to the contact comes into the picture like the performance of the contractor is not up to the mark as per the client satisfaction but the contractor thinks that he has done all the work as per the specifications and standards. • Reason for determination of the contract has not been intimated to the other parties in beforehand.
Completion related	1) The claims arises due to the contractor lack of behavior that he has not submitted the completion plan as per the milestones.
Others	2) In this particular factor mostly those type of clauses are there on which no claims are there but only related to the arbitration cases are there which comes for the claims and counterclaims

D. Interviews

Date Collection Mode - The interview method comprises presenting oral-verbal stimuli and receiving responses in the form of oral-verbal responses. Personal interviews and, if possible, telephone interviews can be employed in this strategy. The respondent can provide more detailed details.

1) It is possible to obtain clarifications and explanations.
2) Complete responses are possible.
3) Complete control over the respondents' surroundings.
4) Requires the respondent to expend less time and effort.
5) Illiterates can use it because it is flexible.

6) There is less ambiguity.
7) Language adaptability.
8) Take note of any further details.

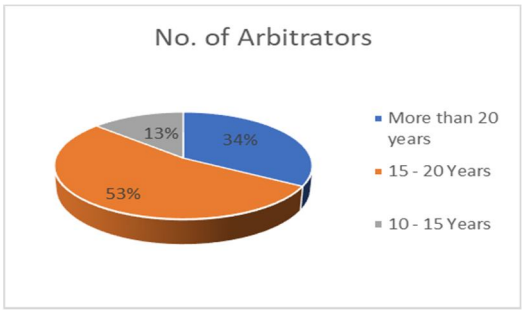
Through this approach, I've noticed that one-line answers are always dependent on what's socially acceptable, and depend on what everyone says in the market, but when asked again in a different way, the actual reality emerges. As a result, the interview is a good way to collect data since it leads to unbiased and unpolished responses, which lend credibility to any research.

E. Methodology

The interviews at this stage was basically to understand the relationship of claims, amendment, GCC and nature of work. Several telephonic interviews were conducted to know the expert opinion. The factors and ranking has already been found through the cases taken into previous segments but it was very necessary to understand the expert opinion on amendments. The interview was basically an open discussion where experts were allowed to comment on any spectrum to lead to an unbiased decision. This group of expert professional comprises of arbitrators from CPWD who were either retired from the organizations or working in the field of arbitration. They all were registered arbitrators by the CPWD. In total 30 interviews has been conducted in which 10 arbitrators were having more than 20 years of experience, 16 were having 15-20 years of work experience and 4 were having 10-15 years of work experience.

F. Interview Analysis

1) *Thematic Analysis* - The data was analyzed using a qualitative analytical method based on thematic analysis. To begin, audios and written notes were used to create a transcript. The second stage was to code the provided data by rereading and looking for patterns in the various interviews. The generated codes were then combined with several categories that appeared multiple times in the transcripts, and the theme was discovered.



G. Interview Results

The interview has taken and the framework of the interview has been thought in such a way that it was revolving around the claims and amendments. It was actually done by keeping the hypothesis in mind that “Amendments helped in reduction of claims”. The interview has been conducted and some of the themes has been analyzed which is actually the outcome.

1) *Faith in GCC* - The first theme has been found regarding the faith in GCC. Most of the arbitrators were pointing out that involved parties are having faith in GCC that it has been designed in such a way that it helps in resolving the disputes in a great manner. They told that although it has been framed in a manner by keeping all the parties in mind there are some loopholes in GCC. They agreed that some definitions and clauses should be taken care of to show the direct relationship but we can’t say directly that there is a loophole. Faith is something which sets a mindset and helps in reduction of claims.
2) *Amendments* - The second theme was found amendments and claim reduction, most of the professional pointed out that when an amendments has been done there has always been seen an improvement in terms of getting claims. It has also been pointed out that it positively impact the dispute resolution also but the impact would be shown if the respondent and claimant will want it but it is questionable. It also has been told that sometimes reduction of claims or nature of claims depends on type of work and scale of the project too.
3) *Positiveness* - The third theme found was about the opinion regarding the amendments. Nearly all of them were positive regarding it and said that amendments are positive and we can see as a step towards the progress. Our wisdom flows in a positive direction, every amendments in any act or GCC it is good. Some expert’s pointed out that it is something which should be done regularly and quickly.

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4) *Balanced framework* - The fourth theme found regarding the framework of clauses and it has been told that after 2004 when the amendments has been done the outline of GCC has totally been changed as it was felt that in any of the project there are a lot of stakeholders involved and all of them are equally important. When we talk abbot the contractor and client both of them are like wheel of any cycle so it should not to be biased to anyone and after 2003 it has been modified slowly to be equal to both parties. Nowadays it is not biased to anyone as such.
5) *Work completion*- The last theme found was the about the work completion. It has been told that the claims actually hamper the work in progress as the contractor doesn't give their 100% because of this. And the time is essence of the contract so sometimes claimant ignore little claims which doesn't cost them less.

H. Analysis & Conclusion

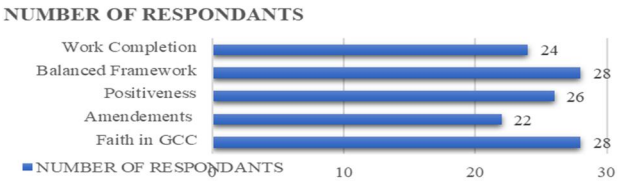
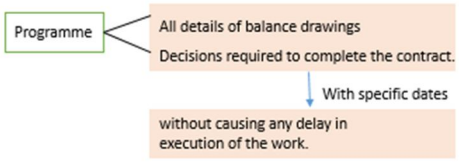


Figure 2 Frequency of occurrence of Factors in Interview Response

The cases which have been taken before and after 2019, though the number of cases are not sufficient enough but a conclusion can be drawn out from the study. It can be seen that the cause related to the cost and payment factor is very much dominating in both the cases before and after the amendment. As the amendment. It has been found that number of claims are decreasing after the amendment and ranking for the type of claims has also been changed before and after the amendment.
Looking at the factors for the effectiveness of amendment, an analysis has been done of the clauses that how amendments are actually fulfilling those factors of faith, balanced framework and positiveness.

Clause	Name	Type	Amendment	Analysis
CLAUSE 1	Performance Guarantee	Security Related	Completion of substantial work then provisional completion of work certificate would be issued. 80% of performance guarantee shall be returned to contractor and if they are assigned for maintenance work also then 40% of the performance guarantee shall be returned.	This clause has been revised and it automatically reduces the claims from contractor side as now performance guarantee is being released. A Relief to the contractor Problem - But problem lies in the definition of substantial work, it should be defined in the contract that what is the parameter
CLAUSE 2	Compensation for Delay	Time Related	• Specific clause numbers which permits time extension as per contract has been mentioned. • Compensation for delay of work has been reduced from 1.5% to 1% • Compensation amount should not exceed 10% of the tendered value or of the Tendered Value of the Sectional part of work as mentioned in Schedule 'F' for which separate period of completion is originally given. • No compensation can be taken If it is not mentioned in the contract. • If engineer in charge is ready to give further extension beyond the justified extended date, the contractor shall be liable to pay compensation for such extended period. • Compensation would be taken for the net period which includes justified extended date and additional time under clause • If the action has not been taken for compensation and the contract goes to determine then all the compensations can be decided after the	• Clauses for time extension will help both the claimant and respondent as it is making the task easier for both the parties and making the contract less ambiguous. Relief to the contractor from 1.5 to 1.0 – acceleration of the work from the contractor side. • Point on the compensation part has been phrased in a balanced manner as it is helping both the parties. It reduces the false and fabricated claims and will also restrict any biased counterclaims. • Compensation amount which has been defined for the net period is making the clause simper to understand. Problem – Here the sectional part of work is not defined in schedule F.

			determination of contract.	
CLAUSE 2A	Incentive for Early Completion	Time Related	An emphasis on justified extended time has also been given for incentives.	Details has not been given, the definition is not clear. Right Details has not been given, the definition is not clear. Right for determination of clause has been taken into consideration into the client hand.
CLAUSE 3	When Contract Can Be Determined	Contract Related	• Completion of Section of work with an individual date, justified extended date came into picture. One more point has been added that • Performance of the contractor has been highlighted in the reason of determination of contract. • Earnest Money deposit has been mentioned clearly when talking about the security deposit. • Reason should be given in the notice to other party. • Parties can't claim compensation for this clause and it will also not fall under breach of the contract.	Ambiguity has been reduced by including the type of completion time and performance of contractor has been kept in priority. Problem –Definition for extended time should be given otherwise its biased towards the respondent.
CLAUSE 5	Time and Extension for Delay	Time related	• Handling over of site as in full or half if specified in the contract shall be completed within 2 months from issue of acceptance letter, so here specific time has been mentioned. • There is again one point has been added regarding the performance guarantee that it would be forfeited by EIC and shall be disposal of the government. Sub Clause 5.1 • A timeline has been decided that is of 20 days for submitting schedule of handling of site and issue of design. • A progress report should be submitted for each milestone and if required EIC can modify it within 30 days and communicate it with the other party.  • Chart in direct relation of time. It shall show the date of start and end of any task and it can be amended in the agree of EIC.	Problem has been seen in the previous regarding the handling over the site from the ndent due to some issues, now claim is ed because a proper timeline has been added. ir point from the claimant side. Submission of charts and designs has een bounded with a timeframe which is g the clauses little simpler and htforward for both the parties.
CLAUSE 5	Time and Extension for Delay	Time related	Sub Clause 5.2 • Reasoned opinion by EIC for delay has been taken into consideration. • Entrance for the hindrance of the cause should be registered in hindrance register. • Contractor can't claim on the damages for extension of time or rescheduling. Sub Clause 5.3 • If the work has been delayed because of the department or some other reason than it can be taken into consideration after receiving a written notice by the contractor and he can ask for rescheduling of Milestone and extension of time within 30 days of receipt of such request. • Under these circumstances contractor is just entitled to extension of me and no damages. Sub Clause 5.4	revious cases before 2019 it has been seen time extension has been asked by claimant he reasons which sometimes not registered in hindrance rag. So addition of this clause e the situation clearer and helped in claim action. ef to the department in cases it has also been that contractor has to bear the losses use of the department so addition of this icular amendment is a good call for claimant.

			• A requirement of form submission for rescheduling of milestone has been added. And contractor should specify • A timeline by which rescheduling of milestones is desired. • With request of rescheduling of milestone, if work is behind the schedule by more than 10% of stipulated period then contractor should produce a revised progrmamme stating all details of pending drawings and decision required to complete the contract and the date for these details to be available. 5.4.1 Specific time of 30 days has been mentioned for extension of time. Sub Clause 5.5 • In this clause a power has been given to EIC to grant a time extension to the contractor if he feels that delay is reasonable but not stated in the clause but it should not affect the scheduling of milestone. Contractor should pay for the compensation for this delay of time	
CLAUSE 7	Payment On Intermediate Certificate To Be Regarded As Advances		• Payment should not be made before the project has completed and completion certificate has been issued. Previously estimated cost was RS 20,000 which has now been increased to 1lakh. • The bill should be submitted within 10days by the contractor or if delay has been found then contractor will be liable to pay @10% to the government. • A new clause 7A has been added regarding the payment of running bills.	No such help as the decision on amount depend on the cost of the work & period of completion.
CLAUSE 8B	Completion Plans To Be Submitted By The Contractor		If contractor is fail to submit the completion plan then now the interest rate has been reduced to 0.1% of the tendered value from 2.5%.	No much claims come for this reason.
CLAUSE 9	Payment Of Final Bill		Delay in the final bill then interest rate has been increased from7.5% to 10%	It has relieved the contractor.
CLAUSE 10B	i)Secured Advance On Non-Perishable Materials ii) Mobilization Advance		i) Previously the advance to be given was 90% of the assessed values and now it has been decreased to 75% i) Bank guarantee bond has been defined in number as 6 now it was not definite in the previous year clauses.	The advances on non perishable material has been reduced so its towards the respondent side. Fixing the number of bank guarantee is good for department as previously it used to get expire.
CLAUSE 10C	Payment On Account Of Increase In Prices/Wages Due To Statutory Order(S)		It has been added that the prices of change in the material and wedges would be considered if any new statutory law come into existence.	Towards the contractor.
CLAUSE 12	Deviations/ Variations Extent And Pricing		Time limits for extra items, substitute items and deviated quantities of contract has been removed as per the finance of the project and it has been updated to 30 days for any of the project.	To omit the confusion on the project size it has been made equal for any size project. Relief to the department.

After analyzing each clauses it has been related to the categorized factors before and after amendment that how it has impacted the scenario of arbitration and claims.

S.No.	Factors	Before Amendment	After Amendment
1	Payment & Cost Related	The claims related to payment and cost before the amendment has highest ranking and found that the awards has been given genuinely to the claimant, it shows that there are problems from the respondent side in these aspects.	• After the amendment also it is having the highest rank in the claims, as these are genuine and it has been seen that awards are made to claimant after amendment it has been seen that awards in terms of payments and cost has reasonably. Professionals told that after amendment there are some changes made in the favor of claimant and some are made in the favor of respondent say for the bill an interest from 7.5% has been increased to 10%. Whereas in advances for nonperishable material has been reduced from 90% to 75% that is in favor of the respondent.
2	Work Related	In this type of claim it has been seen that before the amendment allot of claims has been came in this factor. It has been found that in many of the cases the claims are genuine showing the documents and some are of them fabricated and for the fabrication of the data was basically related to non-transparency of the cutting of the scope of the work.	• In this factor after the amendment a relief to the claimant has been seen as amended clauses tells that If change in the scope has been reduced then contractor should know the reason stated by the EIC & if the scope of work has been reduced so the performance guarantee amount will be again calculated as the reduction of the work has been done and it has been seen that it has reduced the claims in terms of the performance guarantee.
3	Time Related	It is the factor on which both claimants and respondents have their claims and counterclaims for the claims it has been seen that claimant finds there is an issue in the prolongation of the contract and due to this they incurred a loss. There are claims related to the achieving on milestones because a timeline has not been given in this.	• After the amendment a lot of changes has been made in this particular type of clauses and as the research before the amendment has also shown that it was a major factor for the claims so changes has been made like a specific timeline has been given to the contractor to submit it. Specific timeline has been added to the handling over the site also. Problems before the amendment has been risen because charts were not in direct relation of the time but now it has been asked that a chrt should be submitted.
4	Security Related	The reason for this claim was basically related to the performance guarantee and earnest money deposit when the change in the scope of work has been done, or the site has not been handed over to start the work on time or the abandonment of work has been done from the respondent side. In this type of claims it has been seen that the frequency of claim is high and genuine as the awards been given by the arbitrator.	ter amendment a relief to the contractor has been given in terms of formance guarantee and earnest money deposit so a claim has been reduced this factor. But claims are still coming in this domain because after the endment also there are some loopholes like when we talk about issuing a visional completion certificate on substantial amount of work has been done, roper definition in terms of substantial has not been defined.
5	Type of Contract Related	There are very less claims on these type of factor.	
6	Statutory related	Claims in this factor has been found and it is related to the statutory and seen that it is not genuine in most of the cases because the award made is Nil most of the time.	mall changes has been made after amendment and a less claims has been d in this regard

It was discovered that claims were reduced in cases where adjustments were made, and experts' insights also revealed that amendments are particularly beneficial to stakeholders. Whenever adjustments have been made, the parties involved have perceived a positive aspect. However, as we all know, when a large number of parties are involved in a project, arbitration and claims are almost inevitable. As a result, the GCC's major goal should be to rapidly and conveniently resolve disputes because it is impossible to ignore allegations in building projects because stakeholders' interpretation differs.

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I. Recommendations

Following an analysis of the cases and interviews with many professionals, it was discovered that there are several spots and loopholes in GCC where we may work to reduce claims automatically. It has been discovered that suggestions can be issued on two different bases. One is on a broad basis that can be incorporated into terms in future amendments, while the other is on revised clauses that need to be improved.

General –

1) *Frequency of the GCC* - It should be consistent with other acts, such as the Indian Contract Act and the Arbitration and Conciliation Act, because there is a gap. The claimant claims interest on the withheld amount due to contract extension, which is not mentioned anywhere in the GCC, but awards have been given for the same based on the Indian contract legislation.
2) *Constitution of DRC* - Another item to highlight is that there is a general lack of willingness and accountability on the part of departmental officers in executing reciprocal commitments on time, as well as on the part of the departmental DRC in resolving disputes. The DRC should follow the NHAI's DRB model, in which DRB members are a mix of retired officials from the same and separate departments who are uninterested in any party. As a result, if the GCC is to be changed, the DRC Constitution must also be changed.
3) *Responsibilities to Engineer in Charge* - Engineer in charge's responsibilities should be incorporated into the clauses, and he should be given the authority to make decisions on his own based on the circumstances on the job site, because the engineer is the focal point of the work in CPWD, and if he is alert and solves the contractor's problems, claims will automatically decrease.
4) *Escalation Factor*- Although the share of escalation is not mentioned in the contract, it has been noticed that if the project is stretching, it should be provided to the claimant and a court decision should be made. As a result, the GCC clauses should address price increase.
5) *Special Condition of Contract* – The importance of SCC in any project should be clearly stated in the guidelines, and the clauses mentioned in the SCC should be carefully defined to connect to the project. Because construction projects differ in nature, the claims that arise are primarily tied to the project's unique circumstances. As a result, SCC should be emphasized more.

J. Clauses Related

1) *Security Related* – It has been observed that in the amendments a new parameter has been added regarding release of the security deposit and it states if substantial amount of work has been done 90% of security deposit should be released. The point which has been added here is a great move towards the resolving the disputes regarding the claims related to it. But one point must be addressed here is that where the definition of substantial work has been defined in the contract and what is the parameter weather its physical completion, financial completion or how much percentage of it should be mentioned in the contracts.
2) *Time Related* – While analyzing the cases it has been found that time related claims are also very much common and repeatedly coming in the disputes. Amendment in 2019 has been made in these clauses. A lot of points like defining the timeframe for handling over the site and compensation for delay from 1.5% to 1% helped the contractors and helped in accelerating the work. When it comes about the sectional part of the work *it should be defined in schedule F correctly.*
3) *Type of Contract Related* – In cases a lot of claims has been found due to abandonment of work and factors related to it. In the amendments changes has been made to keep the contract easier to understand and non-ambiguous but the Definition for extended time should be given otherwise it's biased towards the respondent.
4) *Payment & Cost Related* – Cash flow and payment is major factor for any disputes. As time is passing a good amendments has been made in the GCC contract but when we talk about reducing claims or resolving disputes quickly one point should be added in the GCC that timely payment must be made by the client to the contractor. Sometimes it has also been seen that contractor doesn't give the payment receipt on time. So, provision in the GCC should be made on the periodic payments and quicker submission of bills from the contractor side too. Another point which should be added in the GCC is about the definition of extra pricing and deviation. If the definition would be there in the clauses itself then most of the claims will automatically resolved at the first place.

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IV. CONCLUSION

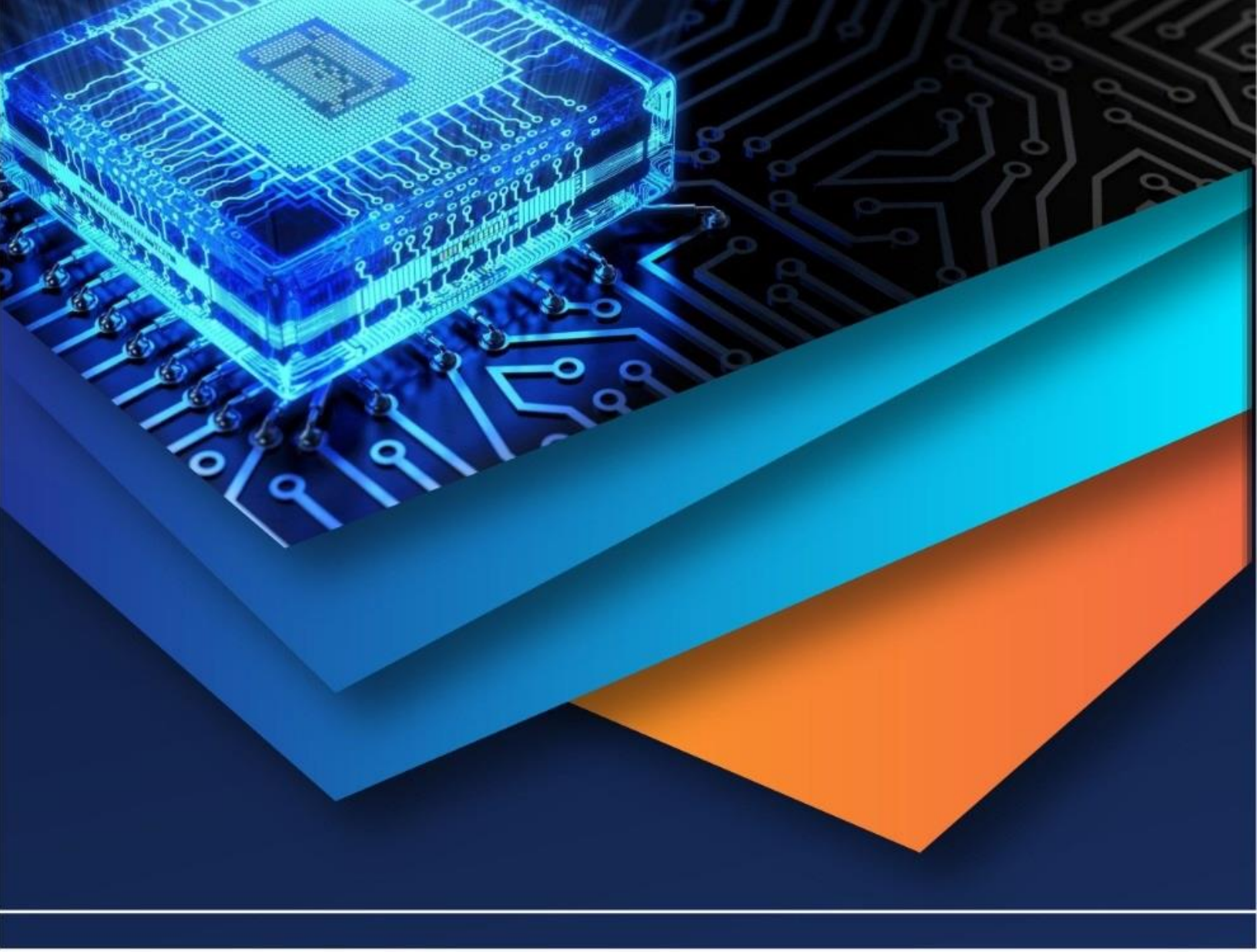
The goal of this thesis was to see if amendments done in GCC has reduced or heled in reduction of claims in the arbitration cases and it has been found through the cases and interviews that factors due to amendments has always been on the positive hand side. There are twenty public works arbitration, which is governed by the CPWD's GCC, was put up for discussion. The study and its claims were investigated and analyzed. According to the findings, the majority of the origins of many of the claims can be traced back to contract terms and modifications. The number of claims can be reduced significantly under contract conditions. To that purpose, some suggestions for general adjustments have been made. Contract clauses that can assist in reducing claims. Dispute resolution will always be a continuous process since, no matter what, there will always be disagreements.

When it comes to the general terms of a contract, the key goal is to keep the focus on resolving disputes swiftly and efficiently. When amendments are made, both sides should be considered, and adjustments should be made. Though the formalized GCC is addressing the issues in some ways, it is practically impossible to avoid disputes in construction projects because there are so many players. The analysis of the changed clauses and comparisons of the new clauses to the old ones have clearly revealed the positiveness of the parties because it has been observed that the formulation is not prejudiced towards either one of the parties, but rather addresses the problems of both parties equally. Because we all know that the claims will not be completed in their entirety, some of the items made as recommendations may be considered for future changes.

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