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DISPUTES DURING WORK EXECUTION IN CONSTRUCTION PROJECTS AND THE ROLE OF EFFECTIVE DOCUMENTATION IN DISPUTES RESOLUTION: A CASE STUDY IN PAKISTAN

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Abstract

The construction industry is an essential tool for the development of Pakistan; nevertheless, it is prone to disputes that often occur while carrying out projects. The present study examines the nature and causes of disputes that may take place during the work execution process of construction projects in Karachi, Pakistan, as well as the significance of documentation in preventing and resolving disputes. Adopting a mixed methodology, the data was gathered from 30 individuals in five construction projects in Karachi including clients, consultants, and contractors using surveys and documents analysis. From the findings, it appears that delay in payments, improper documentation of tenders, unclear conditions of contracts, oral instructions without written confirmation, and ineffective design coordination are the major causes of disputes. It can be established that the process of maintenance of the right type of documentation, which comprises variation order, payment certificates, site instruction, and correspondence, is an effective preventive measure against disputes. In light of the results obtained from the data analysis, practical suggestions have been made by this research to include dispute escalation clauses, design freeze procedures, idle plant documentation, and compulsory mediation in PEC standard construction contracts, which will help reduce the large number of disputed construction cases in the industry.

1. INTRODUCTION

The construction engineering industry is significantly contributing towards development and economic growth. Despite this contribution, however, it is considered one of the most controversial sectors around the globe. Disputes and conflicts are very common in the construction industry because of the nature of this sector [1].

Construction disputes are fairly common, and delayed final accounts with disputes lead to

financial implications for companies as well as adverse effects on project completion[2].

Contract interpretation ambiguities form the primary reasons for disputes in the construction industry owing to lack of effective communication amongst stakeholders. There are some other reasons like poor party performance and defense mechanisms. Effective and clear contract formulation through effective communication becomes an excellent shield against disputes [3].

In Pakistan, the problem of disputes becomes more difficult due to inadequate planning and poor documentation skills[4]. While carrying out work, disputes may create problems in projects and may result in project delays, extra costs, strain in professional relationships, and in worst cases, litigation. Documentation can be considered an important tool to prevent, manage, and resolve any kind of dispute. Properly maintained documents enable evidence-based decision-making.

This research aims to study the effectual role played by documents in discovering and resolving disputes that arise while executing work in construction industry projects in Pakistan, with specific focus on evaluating the impact that proper documentation plays in reducing and resolving such disputes.

1.1. Problem Statement

Internationally as well as in Pakistan, the construction industry has been observed to be notorious because of its complexity and high tendency towards disputes, specifically during the implementation of projects. The main reason why construction projects in Pakistan are prone to disputes is that they usually involve delay, cost overrun, and quality-related problems caused by conflicts between the different parties involved in the project.

A leading cause of disputes in the industry can be identified as poor documentation. Most of the time, instructions are given orally, there is poor documentation, and scope variations are authorized without any written permission. Hence, disputes arise because of the inability of the parties to deal with one another[5], [6].

The limited research found about the defense mechanism that is available through documentation during the phase of work execution in a project life cycle indicates that disputes in construction take place very often[7]. Even though adequate documentation could assist in dealing with disputes in their early stages, the available literature mainly talks about dispute resolution when disputes become more serious. The current study intends to fill this void by looking into the disputes during work execution and its role in reducing such disputes through efficient documentation[8], [9].

1.2. Research Objectives

This study is aimed at exploring the conflicts that emerge in the work execution stage of construction projects and examining the significance of proper documentation in resolving those disputes. The particular objectives of the study are as follows:

- Identify the type of disputes emerging among the parties involved in the work execution stage of construction projects

Explore the causes of disputes arising out of contract documents, specifications, administration, variation, delay, and payments

Determine the influence of current documentation on disputes in the construction industry

Examine and determine the important documents in construction project contracts that can help avoid and solve disputes

1.3. Scope of Research

It is also worth noting that the research will be restricted only to the disputes which occur in the process of work execution in construction projects in Pakistan, especially focusing on the role of documentation as one way of reducing disputes. Emphasis is placed on examining the project documentation such as contract documents, drawings, specifications, site instructions, progress report, variations, and corresponding documents.

Information will be obtained from construction experts like engineers, constructors, consultants, and project managers concerned with project management through surveys and case studies regarding the practice of documentation and its effect on the incidence of disputes.

1.4. Research Significance

The current study discusses the problem of repeated disputes that happen while executing work, which leads to delay and cost overruns. It also makes it hard for the project parties to maintain a good relationship between each other. The study highlights the role of documentation and shows the preventive aspect of dispute management through documentation instead of applying dispute resolution techniques when there is already a dispute.

In terms of academic contribution, this study contributes to the current literature by filling gaps about dispute prevention while executing the work by means of document management, particularly within the construction sector of Pakistan.

2. LITERATURE REVIEW

The construction industry in Pakistan faces several unique difficulties that set it apart from developed countries or even developing nations. According to [10], the construction industry of Pakistan contributes about 2-3% to the total GDP of the country but makes a significant contribution to its employment; however, the industry is troubled with disputes that hinder productivity and growth. The reasons for these disputes include the absence of contract management teams, political issues of the area, insufficient financing, and ineffective administration regulations.

2.1. Construction Disputes in Pakistan: An Overview

According to [11]one of the limited numbers of comprehensive research papers published on the subject of construction projects in the public sector of Pakistan indicated that contractual constraints and uncertainties, delayed payments by the client, and changes in the scope of work were the main causes of disputes. The researchers found that about 70% of the public sector projects in Pakistan encountered disputes relating to contractual issues.

2.2. Payment Issues as the Dominant Cause

According to [12]there was systematic evidence on the existence of disputes and dispute resolution in the construction sector of Pakistan. The study utilized the mixed-method approach through semi-structured interviews and questionnaire surveys among the contractors and subcontractors. The categorical demonstration by the researchers indicated that late payments were the leading disputes in the construction sector of Pakistan.

Payment delay in construction projects leads to difficulties in the execution process and adversely affects everyone involved. Value-based conflicts, delay in variation approval, and poor workmanship are the leading causes of delays in construction projects [13], [14]. Payment delays cause liquidity problems for the

contractors, which force them either to abandon the projects or resolve the disputes using expensive and time-consuming methods.

2.3. Contract Documentation and Bidding Issues

The current system of public tendering process in Pakistan is causing hindrances in the development process due to the delay created," survey responses received from professionals belonging to the business community show the urgency of change [15]. The deficiency of bidding and contract documents prepared by the Pakistan Engineering Council (PEC) does not resolve construction disputes. Bidding and contract documents prepared by different government departments that lack some key elements fail to protect the interest of any party.

While the PEC prepared the "Standard Conditions of Contract" in 1992, followed by comprehensive standard bidding documents on the basis of FIDIC Conditions of Contract, but these documents did not prove helpful in controlling disputes as these standard documents were not implemented by all organizations.

2.4. Irregularities in Public Sector Projects

Serious discrepancies in document management were uncovered by the Standing Committee of the Senate for Economic Affairs regarding National Highway Authority (NHA) projects, underscoring the implications of poor documentation leading to conflicts during the course of project implementation, such as:

- Contracting without validating the credentials of contractors.

Issuing payments greater than documented amounts in work order and contractual agreements.

Withholding or partially revealing documents during bidding and project implementation.

Conflict of interest in selecting arbiters owing to poor stakeholder documentation

2.5. Documentation Practices in Pakistan

The procedure of bidding and contract documentations varies from company to company in Pakistan. As stated by [16]while well-organized and reputable contractors will follow systematic documentation procedures, small companies and non-registered firms will not have any documentation procedures at all, causing problems in disputes as they do not have any documents to prove their claims.

An example of a problem faced in the construction industry of Pakistan is that instructions are communicated verbally. The contractors carry out tasks without receiving approval in writing, resulting in dispute regarding Interim Payment Certificate.

2.6. Research Gap and Justification

Despite having disputes in the construction industry of Pakistan, there have been no studies carried out about the correlation between documentation and the presence of disputes, which would not be helpful in resolving them. In previous studies, [17] issues associated with management of construction projects in the public sector and dispute resolution techniques [17], [18] have all been extensively studied. Nonetheless, even though the study carried out by [18], [19], [20] helped in understanding how disputes arise due to payment, no information was generated regarding documentation process, which could prevent disputes. No studies have been done about the importance of documentation

standardization carried out by the PEC and its effect in reducing disputes.

The objective of this paper is to fill the above-mentioned research gap by studying the most common disputes that occur in project implementation in the construction industry of Pakistan.

3. RESEARCH METHODOLOGY

1. Research Design

The current research work using the case study approach is done on five constructions projects executed within the last ten years in Karachi, Sindh province of Pakistan. The approach used here includes analyzing documentation related to the projects as well as eliciting views of the stakeholders through questionnaire surveys[18]. Questionnaires have been prepared for answering questions related to disputes occurring due to different reasons.

3.2. Period of Study and Study Population

This research was conducted over four months from January 2026 to April 2026. The participants of this research were the stakeholders in construction projects. These stakeholders include clients/owners, consultants, contractors, sub-contractors, project managers, and engineers.

3.3. Sample Size and Sample Selection Technique

A total of 30 individuals having knowledge about engineering and constructions were selected using stakeholder goal-oriented sampling technique from four different construction companies. These respondents belong to three major stakeholder groups which are consultants, clients, and contractors.

Inclusion criteria:

- At least five years' experience in designing, execution, and management of construction projects in Pakistan.
- Professional involvement as clients, consultants, and contractors in the construction industry of Karachi over the last three years.
- Professional position as a Project Manager, General Manager, Resident Engineer, Construction Manager, Contract Administrator, Senior Site Engineer, and Project Director.
- Experience in handling disputes in at least two construction projects in Karachi.

Exclusion criteria:

- Less than five years' professional experience in the field.
- Individuals not professionally involved in construction projects but only academically or researcher in nature.
- Experts in construction other than civil engineering construction.
- Incomplete/Invalid Questionnaire.

3.4. Data Collection Methods

There were three main data collection methods employed:

Survey Questionnaire: Designed both structured and unstructured questionnaires divided into four sections: (a) knowledge and professional experience of the respondents; (b) disputes occurred as per results of literature review; (c) review of current documentation processes; and (d) effectiveness of documentation in preventing or resolving disputes using 5-point Likert Scale.

Checklist for Document Analysis: A checklist was developed for analysis of tenders, drawings/specifications, site instructions, variation orders, progress reports, minutes of meetings, payment certificates, and correspondence.

Semi-Structured Interviews: Questions designed to explore case study conflicts as well as documentations through interviewees.

3.5. Ethical Considerations

Approval for conducting this study ethically was sought and obtained from the Ethics Review Committee of Ziauddin University prior to collecting the data. Consent for the respondents was inferred from participation in filling out the questionnaire. The anonymity of all the answers provided by the respondents was maintained, and no personal information was gathered.

4. RESULTS AND FINDINGS

It was discovered at the outset that there were major deficiencies in the tender document preparation in the construction industry of Pakistan. It was found that nearly 70% of tender documents were deficient in terms of

1. Deficiencies in Tender and Bid

information with generalized specifications not addressing the project needs, approximate bill of quantities giving wrong cost estimations, and inadequate drawings without necessary information.

Table 1: Deficiencies Associated with Tenders and Bids

Sr.No	Issue	Scale(1-4)*
1	Consultant prepared incomplete tender document	2
2	Generalized specifications without project specific information	3
3	Incomplete/deficient drawings with tender	2
4	Biased contract documents in favour of the client	4
5	Deletion of escalation and claims provisions	3
6	Non-inclusion of drawings/specifications	4
7	Tentative/Approximate Bill of Quantities	2
8	Lack of technical specifications	4
9	Lack of site investigation information	2
10	Vague contract conditions	4
11	Indefinite scope of work	3
12	Conflict of information among various documents	2
13	One sided contract provisions	4
14	Unrealistic risk provisions for the contractor	2
15	Deletion of provision for time extensions	4
16	Deletion of claims provisions from contract	4

17	Extensive liquidated damages provisions	3
18	Poorly prepared tender document	2
19	Error/Omission of BOQ	4
20	Legacy of specifications	2

* Scale: 1= Never a Problem, 2= Rarely a Problem, 3= Sometimes a Problem, 4= Often a Problem

Pictorial View

4.2. Owner/Client-Associated Disputes

The emphasis on obtaining lowest bids, the assignment of contracts to low-cost contractors irrespective of their capabilities, and late interim payments beyond contractual agreements were found to be important causes of disputes.

Major owner/client-associated conclusions:

All respondents revealed that clients often emphasize lowest bid price over contractor capability

Late interim payments considered "often a problem" by all parties involved

Creation of unrealistic completion schedules but insistence on original schedule with several versions considered serious problems

4.3. Deficiencies Associated with Consultants

Unpreparedness among consultants with regard to proper documentation and drawing in relation to tenders is another reason for disputes. Generalized drawings and documents are causes of disputes. Another source of disputes includes improper functions by consultants when executing the contract and preference for clients' options owing to money paid to them.

4.4. Deficiencies Associated with the Contractors

Contractors were found to be keen on making large profits in a short span of time by using low-grade material and poor workmanship without consulting experts for construction purposes.

Deficiencies associated with contractors:

- Taking up contract offers with unrealistically low costs

Key deficiencies associated with consultants:

Generalized specifications without any project-specific elements
Suppression of escalation and contractual claim clauses
Delayed certification of contractor's payment certificates
Oral orders without any written confirmation
Biased attitude towards clients

Cutbacks for maximizing their profits from low-cost contracts
Low-quality materials in contrast to what was agreed upon
Lack of documentation for record purposes
Delays in payment to subcontractors leading to disruptions

4.5. Issues Related to Designers and Architects

Designers can be responsible for conflicts through poor tenders, errors and omissions, late deliveries of designs, poor communication between architects and engineers, and lack of site investigation. Architects can also be responsible for conflicts through incomplete designs, lack of detail, delays in design, frequent changes in designs on a daily basis, arbitrary rejection, poor coordination, unachievable specifications, and oral orders without any documentations.

4.6. Behavioral Factors

Conflicts result from human behavior involved in the execution of projects. Misbehaviors between contractors and consultants when conducting inspections, arrogance among client personnel, and clashes between contractors and subcontractors have been pointed out as critical behavioral conflict causes.

5. DISCUSSION

1. Dispute Cause Categories

he results prove that payment delays are the primary source of disputes in Pakistan's construction industry as proposed by Qadir et al. (2023). Payment delays have various implications, such as financial difficulties for contractors, subcontractors' payment delays, work interruptions, and ultimately, the delay of construction projects. These results corroborate Odenigbo and Odusami (2020)'s research results which identified value-based disputes, variations' delay approval, and poor workmanship as leading causes of payment delays.

5.2. Documentation Shortcomings as Causes of Disputes

One of the most important results of this study is the fact that documentation shortcomings are not only contributing causes of disputes but also root causes, facilitating dispute escalation. Insufficient tender documents, unclear contractual provisions, and missing technical details facilitate

misunderstanding between the parties involved, giving rise to disputes. The replacement of documentation with verbal instructions, especially when such communication is not confirmed, creates major obstacles for dispute resolution.

5.3. Stakeholder Specific Dispute Patterns

Analysis indicates that there exist specific dispute patterns based on stakeholders, which are:

- Clients by making late payments, unreasonable deadlines, and selecting bids with the least price, hence poor quality.
- Consultants through lack of adequate documentations, biased contract preparation in favor of the client, and giving verbal instructions.

Contractors due to compromising on quality, lack of documentations, and making exaggerated claims.

This finding confirms Vo et al. (2020)'s research findings of the absence of correlation between the views held by contractors and owners regarding causes of disputes, indicating completely different perceptions on the issue.

5.4. Documentation as Preventive Mechanism

Documentation is recognized as being critical in preventing disputes since the study indicates that when well documented:

- Variation order, including scope, cost, and time aspects
- Payment certificate accompanied with details regarding the process of certification

Site instructions that require written confirmations

Correspondences showing communication details among stakeholders

Logs showing details of manpower deployment and idle times

Thus, shifting dispute resolution from "who is right" to "process of written documents."

5.5. Limitations

There are several limitations associated with the current research paper. Firstly, the geographic limitation of the study is restricted to the city of Karachi, thus potentially failing to address the situation in other parts of Pakistan. Secondly, although the number of participants is enough for the study, generalization based on quantitative results would not be applicable. Thirdly, the study concentrates only on the work execution process, omitting the stages before and after construction.

6. RECOMMENDATIONS

In light of the findings, the following recommendations are made for inclusion in PEC standard contracts for 2023-2024

6.1. Financial Control Measures

Escalation Clause: Implement the "Procedure & Formula for Escalation of Prices (Revised Edition 2022)" with decided weights of cement, steel, POL, and labor. Maximum adjustment amount should be 65% with 35% fixed share.

Documenting Idle Plant and Labor: It is recommended that daily log books signed by Engineer containing the model number of equipment and hours/meters logged with "Available for work" stamp, daily manpower muster roll, and task assignment be mandatorily maintained.

6.2. Design and Documentation anagement

Design Freeze Process: Introduce the "Design Freeze" step prior to the issue of notice to proceed wherein all drawings and technical specifications are finalized. Any design

modification after "Design Freeze" shall be construed as a Variation Order.

Drawings of Bedding (Underground Utilities): Trial pit report / geotechnical report should be included as mandatory tender documentation, except for any claim on unexpected physical conditions raised in the absence of the said document(s).

6.3. Site Management and Procurement

Schedule of Employer Obligations: Insert employer obligations schedule along with the contractor's bar chart detailing employer obligations such as Right of Way and utility relocation; automatic Extension of Time will be issued if the employer fails to fulfill his obligations without a contractor claim.

Termination of Skilled Personnel: Terminate Project Manager and Resident Engineer without consent leading to liquidated damages for breach of "Skilled Person" obligation.

6.4. Payment and Funds Flow

Interim Payment: Engineer shall issue Interim Payment within 28 days from receipt of contractor's application, with failure triggering automatic interest (markup) based on contract data.

.5.Integrated Dispute Resolution System

Dispute Resolution Steps: Revise present PEC Arbitration Clause through a new step-by-step process **including Negotiation → Mediation (PEC Dispute Resolution Facility, 21 days) → Dispute Adjudication Board → Arbitration.**

Contract Drafting Checklists – Issues Summary

Issue	Documentation	Source/Authority
Escalation Costs	Include formulae for escalation with weightages for steel/cement/labor (max 65% adjustable)	PEC standard procedure (2022)
Delay & Idle Claims	Enforce "idle logs" and "resource schedule" submissions on a monthly basis	Industry best practice
Design Variations	Establish a "design freeze" date, anything past is considered a variation order	FIDIC/PEC principles
Management of the site	Enclose employer obligations schedule (ROW & utilities)	PEC bidding documents
Payments/Funding	The engineer must certify payment within 28 days, failure leads to markup provisions	PEC GCC
Ethical Issues	Mention PEC code of conduct for termination of contract	Pec bye-laws
Dispute resolution	Establish the PEC ADR center as mediation point prior to	PEC policy 2025

	arbitration	

Pictorial View

7. CONCLUSION

The study examined the causes of disputes arising during execution of work in construction projects in Karachi, Pakistan, and analyzed the importance of documentation in resolving such disputes. The study verified that payment delay is the most significant source of disputes, followed by tender documentation inadequacy, ambiguities in contracts, verbal instructions, and poor design coordination.

The study revealed that around 70 percent of tenders do not contain sufficient details regarding the specific project, and documentation issues act as primary reasons for escalating disputes rather than secondary factors. Some essential preventative documents that have been identified are variation orders, certified payment certificates, documented site instructions, correspondences, and daily activity reports.

Different patterns of disputes were discovered during the stakeholder analysis, where clients made contribution in terms of delayed payments and unrealistic deadlines, consultants were involved due to improper documentation and verbal instructions, while contractors played their role by lowering the

quality and keeping inadequate documentation.

The recommendations suggested in this study based on empirical results include the incorporation of financial controls, design freezes, idle plant documentation, employer obligations schedule, proper fund certification, and sequential resolution process into standard PEC contracts. These recommendations will hopefully move dispute resolution away from argumentative process towards the application of a system and contribute to resolving the huge dispute problem existing in Pakistan.

Future research may consider expanding the study geographically beyond Karachi, increasing sample sizes, conducting longitudinal documentation studies, and investigating the efficacy of recommendations applied.

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