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MITIGATION OF DELAYS IN TRADITIONAL CONSTRUCTION PROJECTS BY COMPARISON OF FIDIC CONS & MOSPI CONDITIONS OF CONTRACT

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ABSTRACT—The construction industry is subjected to greater risks of delays and uncertainties than any other industries. Delays can be defined as the late completion of works as compared to the planned schedule on the contract. Delays can be avoided or minimized only when their causes are identified. When delay occurred into a project, it will have an adverse effect on project objectives in terms of time, cost and quality. To avoid these delays and manage the projects smoothly, there are lots of tools and techniques are being adopted. Among those, most of the professionals believe that the contract document is the best tool to manage most of the construction project. The contract document will allow the contracting parties to manage the delays properly. This research project is aimed to examine delays in construction projects and compare the delay management clauses from the developed country construction contracts with the Indian construction contracts. Finally this research will recommend the changes required in the Indian construction contracts for better delay management to meet the current requirements in the Indian Construction Industry.
This research focuses on examining delays in traditional construction projects and compares delay management clauses in international and Indian contracts, particularly the FIDIC, and MOSPI conditions The primary findings from the study uncovers that there are various critical elements which causes project deferrals, for example, delay in advancement installments, troubles in financing projects by the temporary worker, delay in supporting real changes in the extent of work, postponement in material conveyance, equipment breakdowns, low profitability level of laborers and climate impact on construction exercises amongst others. Writing likewise uncovered that augmentation of project time and cost overwhelms are the real impacts of construction project delays. It is hoped that this study will become the foundation of further research in the area of project delays and mitigation measures.

Keywords *— Traditional Construction Projects, FIDIC and Indian Contracts, Delay Management, Construction Delays.*

1. INTRODUCTION

Time is money, especially in engineering and construction projects. The construction industry plays a vital role in the development and economic growth of countries worldwide. However, it faces significant challenges, with project delays being one of the most common and critical issues. Delayed projects are those not completed within the scheduled timeline agreed upon in the contract. Mohamad defines delay as an event that prolongs the time required to complete a contractual obligation. Assaf and Al-Hejji describe delay as time overrun, either beyond the agreed completion date or the mutually settled delivery date. Delays are a

frequent occurrence in construction and can have serious consequences. For owners, delays can mean loss of revenue due to unavailable production facilities or rentable space. For contractors, they often result in increased overhead costs, higher material prices due to inflation, and rising labor costs.

Theodore classifies delays into two main categories: those caused by clients and those by contractors. Client-related delays—such as late submission of drawings, frequent design changes, and inaccurate site data—often lead to claims and disputes involving significant financial consequences. Contractor-induced delays are commonly due to poor planning and weak financial management.

This paper explores the theory, causes, and effects of construction project delays and examines how delay management is addressed in contract conditions. It specifically compares delay management clauses in contracts from developed countries, such as FIDIC, with those in Indian contracts like CPWD (CONS) and MOSPI. The goal is to identify best practices and recommend improvements for Indian construction contracts to effectively mitigate delays and ensure timely project completion.

A Objectives of the Study

1. To analyze the types and causes of delays commonly encountered by construction professionals and understand how these influence contract-related decision-making processes
2. To compare the commonly adopted standard forms of contract conditions in India with those used in developed countries, focusing on delay management provisions.
3. To identify best practices in delay mitigation from international contracts and recommend suitable enhancements to contract clauses in the Indian construction industry for improved project delivery.

B Research Methodology

The study was conducted in two phases:

Phase I: Literature Review

An extensive review of books, journals, conference proceedings, and online sources was carried out to identify and categorize common causes of construction delays based on their nature and occurrence.

Phase II: Comparative Contract Analysis

This phase involved a comparison between the FIDIC Red Book 1999, widely used in developed countries, and the MOSPI Conditions of Contract, commonly adopted in India. The objective was to evaluate their delay management provisions and suggest improvements to strengthen contract management practices in the Indian construction industry.

2. LITERATURE SURVEY

Doloi et al. (2012) in India emphasized lack of commitment, poor site management, and coordination as major causes. Megha Desai et al. (2013) identified 59 delay causes in Indian traditional construction projects under 9 main categories. Several literature studies across various countries have identified that construction project delays commonly arise due to factors related to clients, contractors, consultants, poor management, financial issues, resource shortages, and change orders, often leading to time and cost overruns.

A. Key Findings from Literature Review

Types of Construction Delays

Delays are categorized as:

- Excusable with compensation (owner-caused; contractor gets time + cost),

- Excusable without compensation (uncontrollable events; time only),
- Non-excusable (contractor-caused; liable for losses),
- Critical/Non-critical (affecting or not affecting project completion),
- Compensable/Non-compensable (owner vs. third-party delays),
- Concurrent delays (multiple simultaneous delays).

B. Causes of Delays:

Delays arise from nine main groups:

- Project-related (complexity, poor decisions, low penalties),
- Owner-related (late payments, site handover, unrealistic timelines),
- Contractor-related (poor planning, financial issues, low expertise),
- Consultant-related (delays in approvals, inspections),
- Design-related (errors, complexity, late documents),
- Material-related (shortages, delivery delays),
- Equipment-related (breakdowns, poor selection),
- Labour-related (shortage, low productivity),
- External (weather, site conditions, legal, utilities).

2.3 Effects of Delay

Delays lead to time and cost overruns, disputes, reduced productivity, loss of reputation, legal claims, and project abandonment.

3. CONSTRUCTION CONTRACTS IN INDIA

India's construction industry, second only to agriculture, is guided by contract conditions from bodies like CPWD and MES. However, the complexity of existing contract language often leads to disputes. To address this, the Construction Industry Development Council (CIDC) was established in 1996, followed by the MOSPI releasing a Unified Contract Document in 2001 to standardize practices and reduce delays.

A. Key Role of MOSPI

The Ministry of Statistics and Programme Implementation (MOSPI) monitors major infrastructure projects. Their findings revealed recurring delays due to poor planning, land acquisition issues, funding gaps, and more. In response, MOSPI introduced reforms to enhance project planning, monitoring, and contract conditions.

B. Highlights of MOSPI Contract Conditions

- Prequalification: Based on technical experience, financial strength, and bid capacity.
- Earnest Money: 1% of contract value (max ₹50L), refundable.
- Security Deposit: 10% (5% retention + 5% performance guarantee).
- Variation Limit: ±25% item-wise, ±10% contract-wise.
- Payments: 75% of running bill within 14 days; interest on delays.
- Advances: For mobilization, equipment, and secured material (up to 75%).
- Damages & Incentives: LD at 0.5%/week (max 10%); early completion incentive at 0.5%/week (max 5%).
- Dispute Resolution: Conciliation > Arbitration > DRB, depending on project size.
- Owner's Risk Events: Includes war, force majeure, design flaws, etc.

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C. FIDIC Contracts – International Standard

The FIDIC (International Federation of Consulting Engineers) suite is widely adopted globally, especially in developing countries, due to its clarity and balanced risk allocation. Established in 1913, FIDIC introduced contract models that evolved from British templates, with continuous updates addressing industry challenges.

FIDIC 1999 Contract Suite

These contracts are structured based on design responsibility:

- Red Book: Employer-designed construction.
- Yellow Book: Contractor-led design-build.
- Silver Book: EPC/Turnkey (full contractor risk).
- Green Book: Short-form for simple projects.

A key feature is the Dispute Adjudication Board (DAB) for early resolution, minimizing arbitration or legal disputes. The 1999 suite focuses on fair, transparent, and delay-mitigating contract practices.

4. COMPARISON BETWEEN FIDIC AND MOSPI CONDITIONS FOR MITIGATING DELAYS IN TRADITIONAL CONSTRUCTION PROJECTS

A. Liquidated Damages (LD) for Delay

MOSPI (Clause 9A):

• Imposes LD at 0.5% of the contract value per week of delay.
• Capped at 10% of the contract value upon employer's decision.
• Clause 9A(i): Employer may allow further time if satisfied with contractor's performance.

FIDIC:

- Clearly mandates daily delay damages for failure to meet the completion timeline.
- Reinforces accountability on the contractor, especially towards managing subcontractors effectively.

Critical Insight

Both standards recognize employer-caused delays and allow for compensation in such cases. However, FIDIC provides more clarity and structure, making it legally robust and ensuring accountability across all stakeholders.

B. Time Overrun by Contractor

MOSPI:

- Provides a fixed incentive clause (½% to 5% per week) for early completion.

FIDIC:

- Does not explicitly mention incentives for early completion.

Critical Insight:

The incentive provision in MOSPI can serve as a motivation for contractors; however, FIDIC's omission of this clause may be a drawback for encouraging accelerated work unless modified through special conditions.

C. Quality of Work

FIDIC:

- Mandates a Quality Assurance System (QAS) from the contractor.

MOSPI:

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- Focuses on defect correction—if not done within the stipulated period, the employer can do it and recover the cost.
- Requires a mandatory performance bond of 5% of contract value.

FIDIC:

- Performance guarantee is optional and negotiable.

Critical Insight:

FIDIC emphasizes proactive quality control, while MOSPI focuses on reactive correction. The mandatory performance bond in MOSPI increases the contractor's financial burden, possibly affecting smaller contractors.

D. Unforeseen Ground Conditions

MOSPI:

- Places primary responsibility on the contractor to examine site conditions and ground data.
- Allows compensation only if actual conditions are substantially worse than reported.

FIDIC:

- Provides a more balanced approach, granting entitlement to time and cost adjustments in case of unforeseeable physical conditions.

Critical Insight:

FIDIC is more contractor-friendly and balanced in risk allocation, thereby reducing the chance of disputes and claims related to differing site conditions.

E. Permits and Licenses

MOSPI and FIDIC:

- Allow the contractor to issue early warning notices for potential delays related to permits.
- Often transfer the responsibility for obtaining environmental and other permits to the contractor.

Critical Insight:

This area can be contentious in practice. FIDIC's early warning and claim provisions offer better dispute resolution tools compared to MOSPI's less detailed mechanisms.

F. Design Errors or Estimation Errors

MOSPI:

- Places full liability on the contractor, regardless of design inputs from the client.

FIDIC:

- Protects the contractor if he has used reasonable skill and care in design preparation.

Critical Insight:

FIDIC fosters fairer risk sharing, especially under Design & Build contracts, whereas MOSPI's rigid stance can discourage participation from capable contractors.

G. Delay by Employer's Nominated Subcontractors

MOSPI and FIDIC:

- Recognize delays from employer-nominated subcontractors as compensable events.

Critical Insight:

This provision ensures that the contractor is not penalized for delays beyond his control, aligning with principles of contractual fairness.

H. Labour, Materials, and Equipment

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MOSPI and FIDIC:

- Put the onus on the contractor to mobilize resources.
- Compensation is allowed if the employer fails to provide specified deliverables on time.

While both FIDIC and MOSPI aim to mitigate delays in traditional construction projects, FIDIC is more comprehensive, internationally standardized, and balanced in its approach. It provides clear pathways for dealing with unforeseeable risks, employer delays, and design liabilities. On the other hand, MOSPI reflects a stricter, more owner-centric approach with some incentive mechanisms but heavier financial and risk burdens on the contractor.

5. RECOMMENDATIONS FOR ENHANCING DELAY MANAGEMENT IN INDIAN CONSTRUCTION CONTRACTS: A COMPARATIVE ANALYSIS OF MOSPI AND FIDIC CONDITIONS

In India, the MOSPI form of contract serves as both a standard and a guiding document for the preparation of bespoke contracts. While other forms of contract conditions exist within the country, they are typically designed to address specific project types or procurement models. MOSPI remains the only standard form of construction contract published by the Ministry of Finance for general adoption across domestic projects. Given its widespread use, it is crucial to assess its effectiveness in delay management, particularly when compared with internationally accepted standards such as the FIDIC contract, which is extensively used in developed countries. The comparative study presented in this chapter highlights key differences between the two and lays the groundwork for recommending improvements to India's contractual practices in the construction industry. The following observations and recommendations have been derived from the research findings:

Need for Procurement-Specific Contracts:

The MOSPI contract is a general-purpose document not specifically tailored to any one procurement method. In contrast, many international contracts, including FIDIC, provide versions customized for various procurement strategies (e.g., design-build, EPC, etc.). To enhance efficiency in contract administration and execution, it is recommended that India develop specialized standard forms aligned with distinct procurement models.

A. Imbalance in Risk Allocation:

A detailed analysis of delay mitigation clauses reveals a significant imbalance in the risk distribution within the MOSPI contract, favoring the employer. The contract tends to place the burden of delays predominantly on the contractor, including those arising from factors beyond the contractor's control. This one-sided risk allocation not only increases the contractor's financial exposure and responsibilities but also compels them to include substantial contingencies during bidding. Ultimately, this translates into higher project costs for the employer. A more balanced approach to risk-sharing—similar to that in FIDIC—would ensure fairness, improve contractor engagement, and reduce inflated pricing due to risk loading.

B. Absence of an Internationally Aligned Indigenous Form:

The MOSPI contract is primarily designed for domestic projects and does not cater to the demands of internationally funded or cross-border projects. For such undertakings, FIDIC conditions are often adopted, even though they may not fully reflect India's unique legal and socioeconomic context. There is

a strong need to develop a robust, India-specific international contract framework—grounded in global best practices but tailored to local realities—to manage large-scale or foreign-funded projects more effectively.

6. CONCLUSION

- Timely project completion is a key objective in construction, with effective delay mitigation playing a pivotal role in achieving it.
- This research conducted a comparative study between two widely adopted contract forms:
    - MOSPI (India – a developing country context), and
    - FIDIC (Developed countries – international context).
- The objective was to critically analyze the delay mitigation capabilities of India's contract management practices compared to those of developed nations.
- Through a comprehensive literature review, key risks associated with traditional contracting methods were identified.
- A survey-based assessment was used to prioritize the top 10 delay factors, based on:
    - Severity of impact
    - Likelihood of occurrence
- Delay mitigation mechanisms in both FIDIC and MOSPI contracts were examined and compared for these top delay factors.
- Key findings reveal:
    - The MOSPI contract is more client-centric, often placing a heavier burden on contractors for delay-related risks.
    - The FIDIC contract demonstrates a more balanced approach, promoting equitable risk-sharing and encouraging better contractor performance.
- The study emphasizes the need for improvement in India's contractual frameworks, including:
    - Developing contracts tailored to specific procurement methods
    - Promoting balanced risk allocation
    - Framing indigenous conditions for international projects with local relevance
- While the study offers valuable insights, the recommendations are intended as guide notes, not absolute solutions:
    - They provide a comparative understanding of delay mitigation practices
    - They support better decision-making in contract drafting and management in India

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