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Extension of Time Claim Management and Dispute Avoidance in Public Construction Projects in Bangladesh

A Literature Review and Interview Study

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ABSTRACT:

Construction delays in public works projects cannot usually be addressed through the scheduling process alone; rather, a structured contractual response is required that involves a renegotiation of responsibility, entitlement and time. This renegotiation takes place primarily through the extension of time (EOT) claim, though in practice it is often poorly documented, institutionally limited, and disjointed. For dispute avoidance and project delivery performance, the quality of EOT claim management is particularly strategically important in the Bangladeshi public construction sector, which is known for its multi-layered approval chains, fragmentation of stakeholders and time overruns.

This thesis explores the relationship between the quality of EOT claim management and dispute avoidance and project delivery in public construction projects in Bangladesh. It has adopted a two-phase qualitative research methodology involving a structured literature review to synthesize international academic research on EOT claims, delay analysis, documentation, contract administration and dispute avoidance and nine semi-structured interviews with experienced practitioners from both the contractor and consultant organizations and public-client organizations in Bangladesh. The data from interviews were analysed by themed analysis in NVivo 15.

The results show that four aspects of the quality of EOT administration (i.e. procedural discipline in notice-giving, contemporaneous documentation, the rigor of delay analysis, and closed-loop communications) collectively explain the likelihood of delay being absorbed in the contractual process or escalating to a formal dispute. A five-step pathway toward escalation is identified in which as individuals grow more resistant to trusting EOT administration, attitudes solidify, and ultimately, disagreements emerge in the implementation of EOTs that impact project delivery. Technical issues are compounded by institutional issues including the erosion of consultant independence and the length of the approval chain. This cultural resistance to written communication further exacerbates the cultural-evidentiary paradox whereby the most important practices for substantiation of claims are the ones least linked to project culture.

The thesis concludes that EOT administration is necessary governance condition otherwise dispute will be impossible to prevent in the delivery of public construction in Bangladesh in a functional way, without depending on a single factor. Recommendations are provided for contractors, consultants, implementing agencies, and policy-makers, focusing on the need to keep consultants independent, to make the EOT clause consistent throughout the public procurement contract suite, and to build capacity for structured claim management.

KEYWORDS: Extension of time claims, EOT claim management, Construction dispute avoidance, public construction projects, Construction delay, Contract administration, Delay analysis, Project delivery, Bangladesh construction industry, public procurement

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Abbreviations

BNBC - Bangladesh National Building Code

BPPA - Bangladesh Public Procurement Authority

PPR - Public Procurement Rules

EOT - Extension of Time

CPM - Critical Path Method

FIDIC - Fédération Internationale des Ingénieurs-Conseils

LD - Liquidated Damages

PPP - Public-Private Partnership

EED - Education Engineering Department

RHD - Roads and Highway Department

1 Introduction

The three traditional criteria used to assess construction projects are whether they are finished on time, on budget, and to the desired scope and quality. However, in practice, these goals may be hindered by the delays that occur in the implementation of the projects. The impacts of delay in public construction projects are especially harsh because they impact not only the contractual relationship between the employer and the contractor, but also the project and its users. Public projects can be delayed, leading to the delay of roads, bridges, hospitals, schools, and other critical services, which have impacts on the economy, services, and public welfare. Therefore, time management in construction is more than just the preparation and monitoring of the construction schedule. It also includes contractual and managerial mechanisms that lead to the detection, evaluation, rationalisation and management of delay.

This broad concept of time is relevant because time is seldom a programme only issue in construction. In the event of planned progress not following through, these impacts can be felt in sequencing, resource scheduling, productivity, communication and general coordination of project actors. In practice, this implies a close relationship between delay management and responsibility, evidence and decision making. The manner in which the delay is addressed can impact not only the outcome of project completion, but also the relationship of the projects and the credibility of the contract administration process, especially when dealing with public construction where there is formal accountability and procedural scrutiny. The question now is not only one of occurrence of delay, but one of its management once it has come.

The extension of time (EOT) claim is one of the most critical contractual mechanisms that handle delay. In the construction industry, it is a usual phenomenon to have a time extension in construction contract in the event of delay of a project caused by excusable cause (Kumaraswamy & Yogeswaran, 2003). Under a contract, an EOT claim can therefore be regarded as a legal process which allows the date of completion to be renegotiated if a contractor is delayed beyond his ability to control because of events that have

occurred. It's practical and contractual. If the client is responsible for delay, then the contractor should seek an appropriate extension of time to avoid being liable for liquidated damages for causes of action out of its control, Williams (2003) suggests. The administration of EOT has a central role in terms of fairness of the contract on time issues.

Another important aspect of EOT claims is that they transform delay into a form of a general project issue into an ordered contractual procedure. By use of EOT administration, parties must locate delay events, determine the contractual nature of those events, determine cause and effect and whether the completion date must be rescheduled. This implies that EOT is not a contract clause. It is a pragmatic process by which allocation of risks is transformed into project decision making. In areas where it is effective, it can safeguard equity, clarify expectations and maintain continuity of performance. In areas where it fails, uncertainty might not be resolved and project actors might grow more defensive of responsibility and entitlement.

Although it is important, the management of EOT claims is seldom simple. Entitlement is assessed based on a variety of factors, such as the clarity of contractual terms, the quality of project documentation, the sufficiency of programme notifications, the timeliness of notifications, and the credibility of project participants to demonstrate a plausible causal relationship between delay events and the effects of the completion. The studies conducted on the extension of time claims indicate that substantiation and assessment can only be effective with specific particularities and submission of supporting information in time (Kumaraswamy & Yogeswaran, 2003). Similar to the broader research on delay and disruption claims, inadequate records, insufficient documentation, and information gaps have also been cited as key obstacles to just claim evaluation (Ali et al., 2020, 2024). Simultaneously, delay analysis techniques have demonstrated that the analysis of delay is significantly more complicated in cases when projects have altering critical paths, overlapping delay events, and concurrent delay (Arditi & Pattanakitchamroon, 2006; Vo et al., 2025). These results reveal that the management of EOT

claims cannot be a close exercise of the law. It is also a managerial process that affects the manner in which the uncertainty, responsibility, and project control are practiced.

This is one of the significant factors in the present study. If administration of EOT is done based on records, analysis, communication and timely decision making, then there cannot be any distinction between the quality of EOT and the quality of project management in general. In some instances it will be necessary to experience a delay event, but how it is recorded, interpreted and determined is a management practice issue. Incompetent EOT management is therefore not only a symptom of a bigger problem, it can also aggravate the problem by adding to uncertainty and disagreement. Conversely, a more aggressive approach to EOT administration can help keep delay in check in a disciplined contractual process and reduce the risk of escalation as well.

The significance of EOT management is further enhanced by taking into consideration the role of EOT management in construction disputes. Disagreements occur in each project, but not every disagreement turns out as a dispute. Literature tends to differentiate disputes and informal conflicts, focusing on rejection of a claim or assertion, and the continuing disagreement over such rejection. Based on Kumaraswamy, Jagannathan et al. (2025) define a dispute as a scenario, whereby there exists differing perceptions pertaining to the validity of a lodged claim. In the same fashion, a dispute is characterized by Silva et al. (2025) as a circumstance where one party denies another party his claim or assertion and the former party does not accept the denial, thus, the overarching aims of the project are obstructed. Such definitions are important since they demonstrate that conflicts are highly related to situations of claims especially where claims are not being treated in a clear, consistent and just manner.

This difference is important as it indicates the channel within which delay may shift to the confrontation of the contract. Projects can be delayed without necessarily creating a formal dispute but once there is disagreement regarding who is right, who is entitled, or who is to bear responsibility, then the problem is transformed. It is more than just a

question of flown time. It is made a point of interpretation. In that regard, the claim process is a frontier between the normal contract administration and escalation. The value of quality EOT management is thus not only significant in that time entitlement is involved, but also that it can lead to disagreement being contained or formalised.

In the construction industry, claims based on time are particularly prone to dispute. Iyer et al. (2008) demonstrate that the most common contentious issues related to delay and time extension are based on the interpretation of the contract, the notice requirement, responsibility and interpretation of the clause of the extension itself. Kumaraswamy & Yogeswaran (2003) also indicate that the delays in trying claims are often associated with the lack of properly presented information, missing of specifics, and the lack of supporting evidence. These papers indicate that the fact that there is delay does not necessarily lead to any disagreement in construction. They are also a result of the manner of administering delay. In the case of inadequately prepared EOT claims, those with insufficient evidence, or with inconsistent evaluation, the contractual structure that is designed to address delay can instead be a source of controversy.

This directly connects to the concept of dispute avoidance, which is central to the present thesis. According to it, the fact that the EOT claims are not a neutral background process is implied. Instead, it is among the points where the relationships with projects can either stabilise or deplete. Lack of transparency or slowness in the EOT process can cause parties to lose trust in the fairness of the assessment, and can make positions more adversarial. In comparison, the handling of claims by way of plausible paper trails, open-minded arguments, and prompt reaction could assist in eliminating confusion and maintaining a functional relationship. Quality of EOT administration is thus directly related to the dispute avoidance.

It is directly related to the notion of dispute avoidance which is one of the major concerns of the current thesis. Dispute avoidance has been construed in the construction management literature as a proactive understanding that aims to ensure disagreements

do not escalate into formal disputes. Jagannathan et al. (2025) maintain that conflicts could be prevented when the parties involved in projects are aware and responsive to situations that might result in a dispute are identified and resolved before the situations get out of control. The same is echoed by Silva et al. (2025) who state that dispute avoidance is not about resolving disputes once they have occurred, but how to minimise them prior to their occurrence. Dispute avoidance is thus a series of managerial and contractual strategies that attempt to diminish the risks of escalation by early detection of problems, providing clear communication, superior documentation, joint problem-solving, and enhanced timely decision-making.

Dispute avoidance in this sense can be viewed as not an independent activity that is initiated once problems have occurred but as a preventative orientation within the ordinary administration of projects. Its practical applicability is that most disputes are formed over time with missed notices, poor records, poor communication and slow decisions before they are formalised. This renders the concept particularly pertinent to the management of EOT claims. EOT claims are at the heart of where the practices of dispute avoidance can and cannot work since they demand timely notice, substantiation, analysis and response.

The literature indicates that quality of project management is highly correlated with dispute avoidance. Cakmak (2022) observes that the construction sector has become more inclined to methods to foster non-adversarial relationships, collaboration, improved coordination, fair risk sharing and early stakeholder engagement with a view of reducing conflicts. Jagannathan et al. (2025) further contribute that collaboration, realistic planning, commitment of the stake holders, communicating and a culture that does not blame can help in the early detection and avoidance of disputes. These lessons can be directly applied to EOT administration. The same factors that enhance dispute avoidance, such as good records, effective communication, prompt notices, realistic schedules, and consistent decisions, are also beneficial to managing the extension of time claims. It can

be inferred that the quality of EOT administration can determine the difference between delay as a contractual matter that can be managed or a project-wide dispute.

This overlap is significant since it demonstrates why the administration of EOT is a project management problem that should be subjected to analysis and not merely a contract procedure. The literature on dispute avoidance tends to talk broadly in relational or managerial terms whereas the literature on EOT claims tends to talk in terms of entitlement, evidence and analysis. Their relationship is that they are both influenced by the same conditions of the project: clarity, timeliness, credibility, and coordination. Consequently, an improved manner of the administration of EOT can be comprehended not merely as an improved administration of claims, but as one actual pathway through which dispute avoidance can manifest in practice.

This is of particular concern to the public construction industry. Public construction projects are unlike most of the private projects since they are funded by the use of the state money and are supposed to meet wider needs of transparency, fairness, efficiency and accountability. They are usually multi-agency, externally controlled, formalized and more politically and institutionally sensitive. Tabish and Jha (2011) state that success in public construction is especially challenging since these projects have to meet more than mere performance expectations; it is required that they meet the needs of external monitoring and control. In their study, they cite compliance with rules and regulations, pre-project planning and scope clarity, good partnering and external monitoring as key success factors in the public projects. The observations are very applicable in EOT claim management since most of the conditions apply in time-related claims. EOT administration can be inefficient, delayed, or disputed should there be a delay in decision-making, a fragmentation of administrative systems, or compliance in procedures rather than prompt response of the project.

Public construction is thus a notably valuable context in which to study the quality of EOT claims. Contractual decisions made in such projects are usually within layered

governance structures as opposed to a mere employer-contractor relationship. This might enhance accountability, yet might complicate responsiveness. Time entitlement can be contingent on the content of the claim itself, approval chains, institutional caution, as well as procedural formalism. That is why the EOT administration in the public construction cannot be comprehended solely with the help of the technical analysis of claims. It also needs to be interpreted within the administrative context within which claims are heard and determined.

In the context of public construction, disputes are not just contractual matters but also a governance matter. Studies on the subject of construction disputes have consistently found that inadequate contract administration, inadequate or ambiguous contract terms, employer-induced scope variations, delays, inability to meet time deadlines, and ineffective coordination among the project members are significant contributors of disputes (Cakmak, 2022; Silva et al., 2024). In the research on the value of public-private partnership, dispute prevention has also been associated with the timely risk detection, fair distribution of risk, effective communication, and systematic approach to uncertainty (Mirzaee et al., 2024). Though the literature has discussed a somewhat different contractual environment, it supports the wider argument that conflicts are fewer where project risks and claims are handled early and in a systematic manner. This is particularly important in the case of the public sector as unresolved conflicts can create long delays, increased administrative expenses, and decreased trust by the populace in the project implementation.

A point to make here is that if the public construction sector doesn't have good quality EOT administration, it can have a potential impact on those who are not directly involved in the project. In the case of a prolonged conflict in a publicly-funded project, it is not just a matter of contractual hassles. They can influence the continuity of delivery, efficiency of administration and confidence of people in the ability to implement them. This also justifies the investigation of EOT claim management as a project governance and project delivery strategic concern and not just as a legal concern.

These are particularly relevant in Bangladesh, as the public construction industry is a significant contributor to the country's development, but is plagued by many problems related to delays. Repeated delay results in the following common delays that are identified in the Bangladeshi context: delayed payment of wages; poor monitoring and control; delayed decision making; rework; construction delays and changes of contract (Hoque et al., 2023; Nafe Assafi et al., 2024). Sourav et al. (2025) further show that the complexity of the approval process, stakeholders fragmentation and the stakeholders' perception difference about the delay responsibility can also be identified as the cause of delays in infrastructure projects in Bangladesh. At the larger governance scale, Hoque (2021) shows that the politics and stakeholder interest in Bangladesh have a role to play in the implementation of the infrastructure, which can impact the project decision-making and project continuity. These researches reveal that the delay in the construction of the Bangladeshi public is not merely a technical issue that is related to time. It is linked to the bigger managerial, administrative and institutional situations.

The Bangladeshi setting is thus particularly the appropriate one to consider the strategic significance of EOT administration. When there is any delay in the settings that are influenced by fragmentation of decision making, complexity of approval and different stakeholder interests, then the entitlement shall not be easily determined later. Rather, assertions can arise in settings where facts are disputed, documentation might be flawed, and accountability can be construed by various participants in divergent ways. In this case, the quality of the EOT claim management is particularly consequential as it determines whether the administrative complexity is converted into clarity or even more uncertainty.

It is with this backdrop that delay management after they occur is of paramount importance. Delay cannot always be avoided in public construction projects, but it can be shaped by whether it is dealt with by clear, evidence-based and timely contractual administration or by reactive, fragmented, and adversarial procedures. It is at this point where EOT claim management plays a strategic role. In a case where the process is aided with adequate notices, trustworthy records, updated programmes, and assessments are

timely, it could assist in aligning expectations and minimise the chances of litigation. In the case of weak or absent elements there, conflict may be enhanced by the mere administration of claims.

This framing is significant as it changes the focus on delay as an event to the delay as a process. The main issue of the current thesis is not the cause of delaying of projects, but the consequences after delaying. More precisely, it poses the question how the quality of EOT administration affects the course of action afterwards. A well-managed claim process can help to achieve fairness, coordination and continuity of provision. An ineffective one can prolong uncertainty, exacerbate conflicts, and contribute to delivery challenges overall. This makes the EOT claim management analytically significant correlation between delay, dispute avoidance and project delivery.

Despite the existence of a great literature on construction delay, construction delay analysis, claims, records, disputes, and dispute resolution, there is a significant gap. These themes are commonly talked about independently. The literature provides the reasons behind delay in projects, analysis of delay, and the factors that lead to the formation of disputes, but lacks more integrated insights into how the quality of extension of time claim management as such affects both dispute avoidance and project delivery, especially in public construction projects in Bangladesh. This is a significant gap since not all poor project outcomes are due to the presence of delay. They also emerge through the manner delay is recorded, perceived, rationalized and determined in the project system.

This gap is important in two ways. On an academic level, it implies that the respective strands of literature have been widely failed to be unified around the practical procedure, through which the time-related issues are practically addressed. In practice, it implies that there might be an important point of intervention that is underexplored. When the quality of EOT administration can be applied to minimize unnecessary controversies and aid in making more understandable decisions about the project, then its quality has the direct implication of public construction performance. The disjunction is not purely

descriptive. It deals with the fact that the ideas that are directly related to each other in the project practice are not fully integrated.

This thesis fills this gap by a literature review. Instead of focusing on EOT as a slender contractual provision, the paper discusses the process of extension of time claims management as an expanded project management process which links delay analysis, contract management, dispute avoidance and delivery performance. This point of view is scholarly worthy as it unites the strands of literature that are fragmented. It would be also beneficial for practice as better EOT management could be a potential solution to reduce unneeded conflict situations and improve project delivery in the public construction sector of Bangladesh.

1.1 Problem statement and research gap

The essence of the problem discussed in this thesis is that inadequate quality of extension of time claim management may turn delay into a process of creating disputes instead of a contractual problem. In the event of incomplete records regarding a project, delayed notices, undefined responsibilities and inconsistent or slow assessments, the parties of the project may disagree as to whether a delay does exist or not, its causes, consequences and how it is treated under the contract. Under these conditions, the EOT mechanism could not be a fair and organized procedure to deal with excusable delay.

This issue is worthy of consideration since the EOT mechanism was created specifically to avoid uncertainty about delay being unfair or destabilising. It is meant to offer a justifiable procedure with the help of which justifiable delay may be identified and completion requirements accordingly amended. But in case the mechanism is feebly applied, it can cease to be an instrument of exposition. Rather, it can turn into a contested territory. A more realistic issue is thus not just that delay occurs, but that the process which is set up to cope with delay can itself be a source of disagreement.

The problem is particularly acute in public projects involving a multitude of actors, layers of decisions and a cumbersome, rule-bound administrative process, which result in a delay in the settlement of claims. In Bangladesh, the complexity of approval of public projects, lack of coordination, and administrative circumstances complicate the uniform management of EOT (Sourav et al., 2025). While delay in construction in Bangladesh has been associated with conflicts, arbitration and litigation, it is undoubtedly a contract management problem with wide implications on project delivery (Hoque et al., 2023; Islam & Suhariadi, 2018).

The governmental context of this problem makes the issue even more significant, as the delays frequently are handled in larger systems of institutional regulation. This can add to the formalism and paperwork required, or it can add to the decision rounds and may also divide responsibility. The inconsistent EOT management could have an enhanced impact in the Bangladeshi situation where delay drivers are already associated with weak managerial and administrative issues. It can discourage trust in entitlement judgments, raise chances of adversarial interpretation, and cause challenges in smoothly adapting the project expectations.

The research gap lies in the limited synthesis of how **EOT claim management quality** influences both **dispute avoidance** and **project delivery**. The themes of extension of time claims, records, claims management, disputes, and dispute avoidance are discussed in the existing studies, and these themes have not been well incorporated regarding Bangladeshi public construction. This thesis addresses this gap by critically reviewing the literature and by framing the issue of EOT administration as a project management concern instead of being a procedural provision in a contract.

The importance of this gap is that it is an area in which theory and practice are not well linked. The literature has provided an understanding on the cause of delays, tools of analysis and factors of dispute, but little has been done on the claim handling process where the issues come together. The thesis attempts to unify these strands directly in

relation to the circumstances of public construction in Bangladesh by emphasizing the quality of EOT claim management. This way, it will seek to explain why the administration of EOT is something that should be interpreted as a significant process that connects delay, risk of dispute, and performance during delivery.

1.2 Research question and objective.

This thesis seeks to critically evaluate the literature on the extension of time claim management in public construction projects and also analyze the impact of quality of EOT administration on preventing dispute and project delivery with particular attention to the Bangladeshi context.

This objective indicates the perception that the administration of EOT is not to be perceived merely as a limited contractual practice. It is also indicative of the necessity of seeing entitlement as something more than entitlement in a vacuum, but of the overall effects of the manner in which entitlement is managed. The thesis includes both relational and performance aspects of the quality of EOT claims by targeting both the dispute avoidance and the project delivery dimensions. The reason is that administrative decisions that form the project relationships in the course of implementation influence the outcomes of projects not only by the technical progress, but also by the quality of these decisions.

The thesis is guided by the following research question:
How does the quality of extension of time claim management influence dispute avoidance and project delivery in public construction projects in Bangladesh?

This question moves beyond general descriptions of delay and dispute as it is concerned with a specific case of quality of EOT administration and its effects on the project relationship as well as on project outcomes. It also further focuses on the question of public construction in Bangladesh, where the administrative complexity and pressures

associated with delay render the topic particularly pertinent. In this regard, the question is aimed at facilitating a problem-oriented and narrow review as opposed to general survey of all construction claims problems.

1.3 Scope and delimitations

This thesis takes a literature review and qualitative interview design. It is a mixture of a narrow survey of chosen peer-reviewed academic journal articles with some 10 semi-structured interviews with professionals directly involved in delay and claims management in Bangladeshi government construction projects. This is to synthesise and critically interpret the literature and to augment that review with practice-based experiences in a focused and problem-driven way.

The literature review includes the academic literature that is pertinent to extension of time claims, delay analysis, disruption claims, claim substantiation, record-keeping, and causation of disputes, dispute avoidance, and the Bangladeshi public construction context. Besides this, where appropriate, there are applicable official Bangladeshi legal and regulatory materials, which are in contextual use to help in contextualising the legal and administrative environment in which the public construction governance and administrative environment in which the EOT claims are handled. The interview element will aim to capture practitioner views regarding how EOT claims are addressed in practice, the procedural and managerial challenges experienced, and how the challenges can lead to the risk of disputes and to delivery implications.

The work is restricted to public projects in construction since the conditions of the public sector including accountability, formal administrative procedures, regulatory supervision, and the complexity of stakeholders make most of the projects in the private sector unlike those in the public sector. Although the conceptual basis of the review is provided with the help of international studies, the discussion is still focused on Bangladesh. It also restricts the thesis to the issues of extension of time claim management and dispute

avoidance. Other, more general, areas like general procurement reform or all types of construction claims are included only as far as they assist the study of EOT administration and its delivery implications.

The research is not aimed at statistical generalisation. Instead, it seeks to establish a more in-depth and context-dependent insight into the role of the quality of EOT claim management in dispute avoidance and project delivery in public construction in Bangladesh. The interviews are thus employed to augment and contextualise the literature-based analysis as opposed to substituting it.

1.4 Structure of the thesis

This thesis is organized into five main chapters.

The first chapter presents the background of the topic, the specific area of the problem, the importance of the topic, the research gap, the research question and objective and the scope of the study. It sets the logic of the research problem by demonstrating why delay is to be investigated as not only the question of scheduling, but also the question of the administration of claims and dispute avoidance, and performance of delivery.

The second chapter introduces the literature review. It looks at extension of time claims in the management of construction projects, time delay, substantiation and records of claims, notion of dispute and dispute avoidance and the Bangladeshi public construction environment. By doing so, it builds on the conceptual basis required to analyze the quality of EOT claim management in an organized manner.

The third chapter describes the methodological approach of the thesis. It explains the literature review plan, the rationale behind the choice of sources, the qualitative interview plan, participant selection, data collection process, and the thematic analysis

applied to analyse the interview material. The chapter explains the structure of the review and the way the literature has been integrated to answer the research question.

In the fourth chapter, the key findings of the research are revealed and explained in regards to the research question. It unites the results of the literature review and the interviews to clarify the extent to which the quality of EOT claim management affects the dispute avoidance and project delivery, considering the circumstances of Bangladesh public construction. This is the key analytic contribution of the thesis as the reviewed themes are linked into a cohesive discussion in this chapter.

The last chapter completes the thesis by summarising the main findings, explaining theoretical and practical implications and limitations and recommending future research directions. It is a pulling together of the larger meaning of the research and a reflection on what the literature means to the scholarship and practice.

The conceptual logic of this thesis remains as follows:

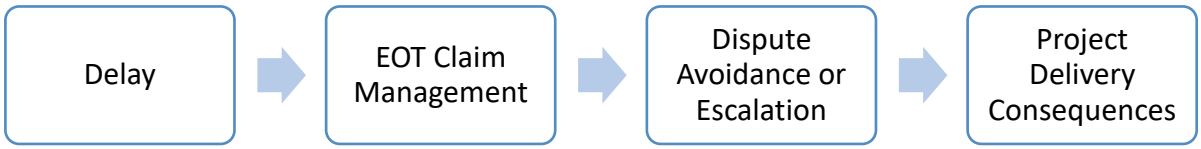

Figure 1: The conceptual logic of the thesis.

2 Literature Review

2.1 Introduction to the Literature Review

The literature review presented in this chapter covers the factors associated with extension of time (EOT) claims in public works contracts and its implications to the prevention of disputes and project delivery in Bangladesh. Construction delay is not just a scheduling issue; it's a contract administration and governance issue. Without an ability to convert delay into a believable EOT determination, one or more of the following outcomes can occur: escalating disagreement, diminished coordination, and project delivery disruption. EOT claim management should then be considered as a strategic project management process which involves identifying, evaluating, and addressing delay (Ali et al., 2020; Cakmak, 2022; Tabish & Jha, 2011).

The literature on construction delays is largely concerned with the reasons for time overrun, and the claims literature is more focused on the entitlement and evidential issues. Delay alone is not enough to provide an understanding on the project governance problem of delay in public construction projects. In this chapter, the process of managing EOT claims is considered a connecting process, one that bridges the gap between delay events and issues of responsibility, substantiation, administrative reaction and dispute risk. The review therefore does not just describe the issue; it lays the foundation for analytical treatment of the role of EOT administration as the key mechanism for the absorption and exacerbation of time-related uncertainty in public projects.

The chapter is organized in a general to specific manner. It starts with a look at construction delay and contractualisation of EOT, administrative nature of public construction and the unique features of the Bangladeshi public sector. It then focuses on the legal and regulatory environment influencing construction delay in Bangladesh and then lays the conceptual foundations of EOT claim management quality. The chapter then reviews the various aspects of EOT administration, namely delay analysis, documentation, contract administration, dispute escalation and delivery implications, and then looks at the

challenge of dispute avoidance and, finally, the research gap and analytical framework that will drive the thesis.

2.2 Extension of Time Claims in Public Construction Projects

2.2.1 Construction delay and time overruns

Construction delay is one of the most persistent issues in project management, influencing project completion schedules, costs, productivity, stakeholder relationships and contractual claims. Ali et al. (2020) demonstrate that delay is the root cause of the majority of construction claims, especially in complex projects where the delays are intensified by the disruption, change, and uncertainty that occurs over time. In the context of Bangladesh, Hoque et al. (2023) show that delays can lead to EOT claims, disruption, cost escalation, stakeholder dissatisfaction, third-party claims, and contract termination. A delay is seldom a standalone occurrence; it usually occurs when project issues turn contractual, managerial, and/or relational in nature.

Time equencing, recource allocation, coordination, and completion of tasks within a time frame. Delay when these processes are interdependent is more than a technical deviation from the baseline programme, it's a question of how the project's contract and management systems deal with uncertainty. This puts the quality of EOT claim management at the analytical core – it is the difference between delay being absorbed in a structured manner and causing prolonged disputes.

Delay has broader impacts in public construction, than just the project relationship. In publicly funded projects, time overruns call for attention not just because they are an inefficiency in how the project is managed, but because they have implications for public value, public accountability, and institutional credibility. This underlines the need to look at the contractual and managerial frameworks that react to the delay, as well as the delay causes themselves.

2.2.2 The extension of time contractual and as a managerial mechanism

EOT provisions are commonplace in construction contracts, and they separate the causes of delay from the contractor and the delays caused by events outside the contractor's control. According to Kumaraswamy and Yogeswaran (2003), they are commonly used contractual documents and Williams (2003) states that they provide protection in projects with time constraints. If a valid extension is given, the date is updated and the contractor is not liable for liquidated damages that are due for excusable events. The contractual allocation of time risk is thus implemented through EOT provisions.EOT provisions therefore implement the contractual allocation of time risk.

The literature, however, is clear that EOT is not a right that can be considered in isolation from other rights. Ali et al. (2020) place EOT in the context of Construction Claims Management, which are associated with events that are not part of the original contract and can have time and cost consequences. Time is a coordinating component throughout the project and is analytically unique in this category, as it is involved in time entitlement decisions which impact planning, sequencing, risk allocation, and continuity of delivery throughout the project. EOT administration is thus a contractual compliance and project management task.

The claim can be viewed as a formal process and is more understandable in terms of managerial importance as EOT. To be granted an extension, it will be necessary to determine if a delay event was excused, if it caused critical completion, if it was timely and properly notified, and if its effect has been credibly substantiated. These demands are not just about contract compliance, but about judgement, analysis and communication. Time entitlement necessitates the careful identification, evidence and interpretation of the delay event, as noted by Nafe Assafi et al. (2024). The quality of the administration of EOT is the core of this thesis because the categories of contracts are turned into actual project decisions at that time.

2.2.3 The complexity of public construction and administration

The environment of public construction is more complex than most private construction projects, making it a more challenging environment for EOT claim management. Public projects, which receive state funding, should not only achieve performance goals, but also be legally, transparently and fairly conducted. Compliance with rules, scope clarity, effective partnering, and external monitoring, are all success factors identified by Tabish and Jha (2011) for public construction, which are directly applicable to delay claims administration.

Public projects tend to have several actors, multi-tiered decision-making structures, procedural transparency, and considerations for decision legitimacy. These can enhance accountability, but they can also hinder the speed of decisions-making and administrative responsibility. One problem in EOT management is that decisions about delays can be delayed through a series of approvals, and another is that they may be hesitant to approve delays because they do not want to be held responsible for the results of the subsequent delays. The governance context in which a claim is handled thus affects not just the merits of the claim, but also the administration of the EOT.

Delay events require to be translated into a documentary and procedural form before they can be acted upon if the project environment is highly formalised. This increases transparency, but can also create a disconnect between the progress of the project and the formal decision-making process. EOT administration in this kind of situations isn't just a technical delay analysis; rather it is traversing an administrative path of review, approval and responsibility allocation. The EOT decision process is therefore very likely to be disputed or postponed in public projects, with far-reaching effects that go beyond the claim itself.

2.2.4 The Bangladeshi public construction context

The problems are particularly acute in Bangladesh. The authors of the study, Hoque et al., (2023), conclude that the delays in construction in Bangladesh are generally associated with delayed payments, rework, inexperienced labour, lack of monitoring, and delayed decision making, which are not isolated issues, but are rather a reflection of the general managerial and administrative problems. Thus, it is likely that in Bangladeshi public projects, EOT claims occur in situations where the delay events are hard to document, identify and allocate.

Nafe Assafi et al. (2024) demonstrate that delays are found to vary by project type in Bangladesh; the publicly funded projects being the most vulnerable to construction mistakes, contract changes, and slow consultant decisions. These factors make it difficult to split the time responsibility between the employer and the contractor: the contract variations can make it unclear if the delay is due to the contractor's performance or as part of the contract; the lack of a timely consultant response can cause confusion about notice responsibilities, mitigation expectations and programme revision.

Sourav et al. (2025) cite the complexity of approval processes and a lack of understanding among various stakeholders as key factors in Bangladesh's infrastructure delays. The situation is exacerbated when the responsibility is spread out and issues are blamed on other actors. In public-private partnerships, Huque (2021) shows that political processes and conflicting interests of stakeholders can also impact infrastructure implementation, which indicates a wider institutional setting that can hinder timely and evidence-based decision making in the contractual administration of infrastructure in Bangladesh.

All of these studies have indicated that the public construction environment in Bangladesh is beset by recurrent delay and is characterized by conditions that increase the complexity of delay management. In a complex decision-making environment with a multi-stakeholder responsibility and a lengthy and complicated approval process, the technical task to substantiate an EOT claim will not likely be easy. The scenario of

Bangladesh is therefore of particular relevance to explore the issue of EOT claim management as a strategic administrative issue.

2.2.5 Regulatory and legal framework of the Bangladesh construction industry

The causes of construction delay in public projects in Bangladesh cannot be comprehensible if they are not discussed in the context of its legal and regulatory system under which projects are delivered. It encompasses all areas of procurement law, building control, environmental law and labour administration, all of which have the potential to affect the order, duration and complexity of project decisions. This regulatory context influences the nature of the delays which are considered excusable, the process for recording the delays, and the process for administrative processing of the entitlement decision (Bangladesh Public Procurement Authority [BPPA], n.d.; Department of Environment, n.d.; Ministry of Housing and Public Works, 2021).

The Public Procurement Act 2006 and the rules framed by the BPPA under the Act govern the process of public contracting in Bangladesh at the procurement level, specifically tendering, award of contract and administration of the contract. This framework fosters an environment of formalized documentation and transparency, extends into the post-award administration of EOT claims, and includes a culture of accountability. You must follow the procurement procedure, it is not a preference for projects. The standards of documentary completeness and procedural regularity that must be met by the EOT claims must be more than those required by the contract itself (BPPA, n.d.; Government of the People's Republic of Bangladesh, 2006b).

Things get even more complicated when building control comes into the picture. Design, construction, structural safety and compliance is governed by the Building Construction Act 1952 and the Bangladesh National Building Code (BNBC) 2020. Sequencing and time to completion can all be impacted by approvals related to code, design modification, inspection requirements, and/or corrective work. If regulatory interventions cause delay, the evidential burden of establishing an EOT claim grows more challenging, the

contractor must show that a delay has taken place, how it was caused by regulatory requirements, which actor caused or contributed to the delay, and whether it could reasonably have been prevented (Government of the People's Republic of Bangladesh, 1953; Ministry of Housing and Public Works, 2021).

A third dimension is added by the environment and labour regulation. Environmental clearance, workplace safety and worker welfare is regulated by the Environmental Conservation Rules 2023 and the Bangladesh Labour Rules 2015 as well as the Bangladesh Labour Act 2006. Such tools impact on mobilisation, supervision and continuity of work and can cause delays not directly under the control of site management. As a result of the compliance related disruptions causing delay, the allocation of responsibility becomes difficult and the administrative and evidential demand for EOT assessment rises (Department of Environment, n.d., Government of the People's Republic of Bangladesh, 2006a, Ministry of Labour and Employment, 2015).

This scenario again highlights the fact that delay in construction in Bangladesh is not only an operational issue. The conditions in which project time decisions must be made and documented are influenced by each of the following: procurement processes, building control, environmental requirements, and labour regulation. In this context, EOT administration is also about regulatory navigation; the capacity of project actors to record, understand, and navigate the delay in a multi-layered regulatory context.

2.2.6 Regulatory considerations in EOT claim management for public projects

The above-mentioned regulation has direct impact on the management of EOT claims in public construction in Bangladesh. In this context, delay can also be caused by shortcomings in productivity or technical issues, as well as by the procurement process, approval delays, design-control delays, environmental clearance delays, safety delays and formal communication obligations. Therefore, delay must be viewed as both a phenomenon of operation and administration. It is much harder to create a credible and unambiguous EOT claim when there are several layers of procedures and multiple actors involved, as

opposed to a single actor (BPPA, n.d.; Department of Environment, n.d.; Ministry of Labour and Employment, 2015).

This strengthens the main idea in the thesis. Where compliance is a central part of the public sector operating model, and time is a key constraint, robust EOT administration is not just a contractual requirement, with timely notices, good records, up-to-date programmes and reasoned entitlement decisions. It is a mechanism to help transparency in administration so that complexity of the regulatory regime can be separated from responsibility of the contractor. In the absence of a strong EOT process, the same regulatory complexity introduces ambiguity, conflict, and delivery disruption. Thus, the regulatory context is a factor that explains why the quality of EOT claims is important in Bangladesh, rather than just a descriptive background (Government of the People's Republic of Bangladesh, 2006b; Ministry of Housing and Public Works, 2021).

2.3 Conceptual Foundations of EOT Claim Management Quality

There is no single accepted theory of the quality of EOT claim management in the literature. The idea should be built from the synthesis of the related work of delay analysis, claims administration, dispute formation, contract governance, and project delivery. Drawing on the literature, this thesis develops an analytical framework to understand the administrative outcome of delay in EOT claims and the factors that lead to a dispute. In this context, the quality of claim management is considered as a multidimensional analytical construct, rather than as a simple assessment of good or bad handling of claims, to be evaluated based on measurable aspects of administrative effectiveness (Arditi & Pattanakitchamroon, 2006; Cakmak, 2022; Jagannathan et al., 2025).

The first dimension is the quality of documentation. EOT claims rely upon contemporaneous records that are complete, organised and traceable. It is difficult to determine the cause, time, effect and responsibility for delay without a sound evidential foundation. The quality of the documentation is not a matter of administrative tidiness but rather an

objective basis of the argument. If there is a lack of records, if they are incomplete, inconsistent or are made after the fact, the claim automatically has less evidentiary value and future disputes can ensue not because of variance in interpretation of the contract, but because of variance in the versions of events on the project.

Procedural timeliness is the second dimension. The evidential and administrative value of notices, programme changes, supporting submissions and entitlement decisions are heightened when issued when the project is within the control of the parties. Late notice can be not only a violation of contractual entitlement, but can also make it more difficult for the parties to respond constructively, and the impact of delay can be manageable. Thus, procedural timeliness has two purposes – contractual compliance as well as dispute avoidance.

Analytical rigour is the third dimension. Delay analysis must prove that the delay took place, that it impacted the critical completion and that the impact is meritorious for contractual relief. The logical chain (what happened, how did it impact completion and why was the impact acceptable) needs to be followed throughout the claim. If one of the links in this chain is missing, the entire chain is weak. Analysis of delay is therefore not a technical additional step, but rather the main way in which factual events are translated into contractual entitlement.

The fourth dimension is clarity in the assignment of responsibility. There are few construction delays that are only one actor's fault, or are a single event, or have distinct boundaries between change, disruption and performance failure. On one hand, the quality of the EOT administration will depend on the clarity and justification of assigning responsibility, but, on the other hand, a technically sound delay analysis could be challenged if the results of the delay analysis regarding the cause and attribution are not clear and well-reasoned.

Communication and coordination quality is the fifth dimension. EOT claims are not decided by documents — claims are resolved with the help of notices, meetings,

clarifications, and the general level of project dialogue. Slow, disjointed, or defensive communication between parties can cause a technically prepared claim to become controversial. By contrast, the process can be more open and structured, minimizing misunderstandings and making the process appear more legitimate, even if the facts are contested.

Decision consistency and procedural fairness is the sixth dimension. Project actors react not only to claim decision results but also to the timeliness, reasonableness and adherence to the agreed contractual framework of the claim process. Decisions that are not explained or are inconsistent can lead to a lack of confidence in the legitimacy of the EOT administration, despite the formal decision being technically defensible. Perceived procedural fairness contributes to administrative quality, especially in cases of claims disputes, when institutional accountability is high.

Life-cycle integration is the seventh dimension. Good EOT claims are partly made at the time of the project, during the planning assumptions, record systems, monitoring routines, and programme controls that are put in place (Cevikbas et al., 2024; Kumar et al., 2021; Neupane & Jaisi, 2025). If planning is not feasible, monitoring is inadequate or records are incomplete, the subsequent claim process will tend to exhibit those shortcomings. Life-cycle integration ties EOT administration into the overall project management system instead of treating it as a stand-alone and reactive process.

These 7 dimensions are not separate; they connect to each other. Poor documentation is a barrier to analytical rigour. Lack of communication adds to the responsibility confusion. The length of the process impacts on the quality of evidence and perceptions of fairness. Equally, robust life-cycle integration can simultaneously strengthen records, analysis, and coordination. Therefore, cannot the quality of EOT claims be boiled down to one thing? It grows out of this interplay of dimensions in the day to day handling of delay.

These dimensions collectively offer a conceptual basis for the thesis, and enable EOT administration to be understood as part of a strategic project management capability, rather than just an administrative activity. The analysis tool created here is used as a connecting thread between the contextualization of the previous sections and the analysis of the administration of EOT in practice that follows.

2.4 Key Issues in Extension of Time Claim Management

2.4.1 Delay analysis and entitlement assessment

The logic foundation of any EOT claim is delay analysis. According to Arditi and Pattanakitchamroon (2006), it is a complex problem that entails critical path theory, float ownership, concurrent delay and the reliability of the records available. The method used is context dependent, meaning that no single method is always suitable and the quality of the analysis depends on the appropriate method being chosen to the evidential state of the project.

There are three parts to a credible EOT claim: a delaying event, a causal event, and an excusable event. Each link in the chain must be strong if the claim is to be believed, and if an impact on the critical path cannot be proven for a delaying event, then it is not a valid reason for extending an extension. The analysis of delays is therefore not a technical step to be added on top of contractual entitlement, but the main process that transforms factual events into contractual entitlement.

This kind of reasoning is especially challenging in the case of concurrent delay. Concurrency is one of the most enduring and unresolved issues in delay analysis, as noted by Vo et al. (2025) who continue to see uncertainty surrounding its definition, identification, and attribution. If two or more delay has resulted in overlap, methodological judgements need to be made as to which delay has governed completion and as to how the entitlement should be distributed between excusable and non-excusable causes, the literature

does not provide a comprehensive answer to these questions. Quality in EOT management is thus not merely technical, but also requires the justification of analytical decisions in the face of uncertainty.

In this thesis, delay analysis is used as the credibility mechanism for the claim. Weak analysis results in uncertainty, competing interpretations, and rigorous analysis minimizes uncertainty by establishing a logical link between event, impact, and contractual consequence. It is not intended to resolve every dispute, in particular when there are multiple concurrent paths to a critical path or when the critical path changes, but it offers a more defensible basis for decision and justification.

2.4.2 Records, documentation, and claim substantiation

Documentation is the credibility of an EOT claim; delay analysis is the logic. Kumaraswamy and Yogeswaran (2003) note that often claim assessment is delayed due to lack of presentation and detail from the contractors and lack of time frames for decision making by the assessors. It's not just that the lack of substantiation undermines entitlement, it's that it adds to uncertainty, delays assessment, and builds up interpretive ambiguity throughout the project.

EOT claims are based on what can be proven to have happened, not on what happened. A document may have a strong substantive basis but a weak administrative one when the documents are disjointed, incomplete or not well organized. Ali et al. (2020) state that drawings, specifications, instructions, and schedules are key support documents, and Ali et al. (2024) conclude that most claims are lost because they are not supported by suitable documentation, records, or supporting evidence. EOT management is thus not just a contractual matter, but also an information management matter.

Documentation quality is not just about the number of documents that one retains. Even if records are technically available, the lack of organisation makes them a poor source of

reducing uncertainty. Retrospective documents are far less compelling than contemporaneous documents and records that are not readily accessible to any particular delay event and programme impacts are less useful in substantiating a claim. Conflicts also occur because of the ambiguity and incompleteness of information (Neupane & Jaisi, 2025).

Kumar et al. (2021) provide a more general perspective by considering claims as realised risks, and claim documents as valuable sources of project data. In this view, EOT substantiation is not just a reactive task that happens after delays have occurred, but part of the project information environment that can help with decision making while the project is being executed. This links documentation quality to project management ability: quality documentation is not created when the claim is drawn up, but is facilitated by discipline in documentation, monitoring and follow through in organisations, in earlier stages.

2.4.3 Contract administration, communication, and decision-making

The quality of the contract administration affects the whole EOT process. The technical evidence is not the only way to determine time claims; they are also based on how notices are issued, how submissions are reviewed, how decisions are communicated, and how authority is exercised. Iyer et al. (2008) show that the nature of delay disputes is influenced not only by the facts of delay but also by the contract interpretation, notice requirements and liability principles. Even if it is agreed that delay has taken place, two parties can have a fundamental disagreement about its cause, contractual nature, and effects.

Even if there is some agreement about facts, there is no automatic right to entitlement. Whether the notice is given on time, whether the submission is considered satisfactory, whether the authority that reviews the submission has a clear answer, whether the reasoning behind the answer seems to be based on the contract. EOT management is thus not just delay proving, but it's a process through which the claim is received, assessed and concluded, and there is a process channel. The way this channel works directly

influences whether or not the process is seen as manageable and fair or as inconsistent and adversarial.

Weak administration is known to turn manageable delay into a contested entitlement, which is confirmed by the literature. According to Kumaraswamy and Yogeswaran (2003), the ambiguous time frame and lack of detail information about the claims delay the evaluation of claims and delays; Silva et al. (2024) have identified poor contractual arrangements, lack of understanding of contractual terms, and weak administration as the major causes of dispute, and Cakmak (2022) has identified non-granting of EOT, payment failures, and unclear contract documents as the key drivers of construction disputes. Administrative failures are not on the fringe of the EOT process, they are integral to the process itself, as they can help to shape whether claim handling is seen as legitimate and coherent.

Administrative quality is closely related to communication and coordination. Even technically prepared claims can become controversial because of the lack of effective information sharing among project actors and defensive rather than constructive approach to the responsibility. Both Jagannathan et al. (2025) and Cakmak (2022) suggest that communication, collaboration and equitable treatment are critical to preventing escalation. The quality of institutional approval chains, and thus of EOT management, is partly dependent on the quality of the administrative communication, which either can increase or decrease the ambiguity.

2.4.4 From EOT claims to dispute escalation

The link between EOT claims and dispute escalation is at the heart of this thesis. According to Jagannathan et al. (2025), a dispute is a situation in which parties disagree about the validity of a claim; Silva et al. (2025) define a dispute as a case where one party's rejection of another party's claim or assertion is not accepted. Disagreements do not necessarily lead to disputes, disputes are disagreements that are formalised and are irreconcilable. The claims that are made and settled at EOT sit at a pivotal moment in this

cycle: the creation and settlement of claims is the juncture between the routine administration of the contract and formal dispute.

EOT claims are listed as one of the major routes to project delay that leads to dispute in the literature. Delays and failure to receive EOT are among the biggest reasons for construction conflicts, as mentioned by Cakmak (2022), and poor administration, not achieving time targets, failure to pay and scope changes are among the reasons cited by Silva et al. (2024) for construction conflicts. The findings indicate that conflicts do not just happen because of the delay itself, but also because it is processed in an ambiguous, slow, inconsistent and poorly evidenced manner. Therefore, one of the main points of prevention or facilitation of escalation is EOT administration.

An important addition is that of Tariq and Gardezi (2023), who make a case for delay and dispute not being linear but synergic. Cooperation can be undermined by dispute, which can lead to a further delay because it raises transaction costs and diverts attention from delivery to adversarial positioning. This is a sign that poor EOT claims handling can lead to further uncertainty, formality and a further downward spiral in relationships. The effectiveness of EOT administration is thus relevant not just to the immediate impact on a particular entitlement decision, but also to the ability to break or perpetuate this cycle at an early stage.

2.4.5 Project delivery implications

In addition to dispute escalation, EOT claim management quality directly affects project delivery results. Hoque et al. (2023) establish that unresolved delay in Bangladesh results in disruption, loss of productivity, rising costs, dissatisfaction of stakeholders and termination of contracts. Neupane and Jaisi (2025) attribute the lack of record-keeping to conflict, loss of time and cost overrun. Failing to administer the EOT in a strong way thus impacts not only on the formal claim file, but on the way the project continues to function in practice.

The lack of timely and unambiguous basis for entitlement decisions weakens the basis for project planning, resource allocation, and mitigation decisions by project actors. Lack of certainty regarding a time claim may result in defensive reactions, less cooperation and problems in coordination of day-to-day activities. The impact on delivery is therefore indirect but important – claims may impact not only the administrative record but also the working environment of the project.

Robust EOT administration, on the other hand, can facilitate delivery by clarifying entitlement early, provide a credible basis for programme revision, and will enable project actors to adapt to new circumstances on a sound basis. Kumar et al. (2021) argue that the claims are considered realised risks and the claim documents are considered as project information, meaning that better claim management can lead to better on-going decision making rather than just better deal with past claims. As is shown by Cevikbas et al. (2024), claim management risks occur throughout the project lifecycle, further substantiating the need for an integrated approach to claim management and its proactive nature, to assist in project control before the problems become embedded.

2.5 Dispute Avoidance and Effective EOT Administration

Dispute avoidance literature is very proactive in nature. It aims to prevent dispute from happening in the first place, rather than having to be resolved after it has occurred, by communicating, collaborating, planning realistically and adopting a no-blame culture as part of regular project management procedures (Jagannathan et al., 2025; Silva et al., 2025). However, dispute avoidance research is generally at the relational level and fails to specifically examine the role of particular administrative processes in dispute avoidance. EOT claim management fills this gap.

Within the framework of EOT administration, dispute avoidance can be seen as the ability to manage or contain disagreement prior to it settling into formal roles. The literature indicates that this is more likely if delay events are detected early, notices are issued in

a timely manner, records are kept systematically, delay impacts are assessed in a transparent way, and decisions are communicated in a reasoned way. The importance of timely and detailed submissions is highlighted by Kumaraswamy & Yogeswaran (2003), structured documentation and supporting evidence are underscored by Ali et al. (2020; 2024), and the impact of notice provisions and the interpretation of contracts on whether time-related disagreements escalate into formal claims is demonstrated by Iyer et al. (2008). It is not a single instance of an effective EOT administration, but the sum of the parts of timely, evidentially credible, and procedurally fair practices that helps prevent disputes.

Cakmak (2022) and Silva et al. (2024) agree that some of the top causes of construction conflicts include ineffective contract administration, communication issues, and time-related issues that are not resolved. Better EOT administration can therefore minimise dispute risk through greater transparency, clarity of entitlement and greater acceptance of decisions – even if the decision is not all good news for one party.

An important qualification is needed. Avoidance of dispute is not the elimination of disagreement, which is not feasible in complex and uncertain project environments. The purpose of this is to make sure that conflicts are dealt with in a timely, evidence-based and transparent enough way that it doesn't escalate needlessly. In the administration of a dispute, then, successful conflict avoidance is not consensus, but one that reduces ambiguity, allows the parties to accept decisions, and maintains the dispute within an acceptable administrative structure.

In the context of public construction in Bangladesh, these factors are of special importance. Effective EOT administration can act as a stabilising mechanism in complex approval processes, with fragmented actors, where regulatory layering is relevant, and where decision making is likely to be delayed, by aligning records, communication and entitlement decisions across the fragmented actors. That same complexity can be turned into lasting ambiguity and conflict when you have a weak process. Dispute avoidance in

this thesis is therefore not an abstract ideal but a pragmatic one that is the result of more credible and coherent administration of EOT in a governance environment where this quality is genuinely hard to extract (BPPA, n.d.; Hoque et al., 2023; Ministry of Housing and Public Works, 2021).

2.6 Research Gap and Analytical Framework

The literature analysed in this chapter offers significant insights into construction delay, EOT claims, documentation, disputes, dispute avoidance and public sector project complexity. It is methodologically challenging, claim substantiation requires good records and supporting evidence, poor contract administration is a major risk of disputes and that good communication and cooperation can limit the risk of dispute escalation. The literature also recognizes public construction as a unique context with formal governance, multi-layered accountability, and slower decision-making conditions, especially in Bangladesh, where the procurement process is complex, stakeholders are fragmented, monitoring is weak, and compliance with regulations is an area of concern (Hoque et al., 2023; Nafe Assafi et al., 2024; Sourav et al., 2025).

The body of literature, however, tends to cover these issues separately and not as an integrated process. There is research into delay causation, delay analysis techniques, dispute causes and governance in public construction, but as yet there is relatively little that brings them together in the context of the practical claim-handling process that turns delay uncertainty into a contractual choice. In reality, delay events, evidential requirements, administrative responses and dispute risks do not happen in isolation, but within the same EOT process. There is therefore a significant lack of integration around an individual issue and a lack of understanding of how issues interact within EOT administration as a system.

A second gap is related to the legal-administrative environment of EOT management in Bangladesh. The literature recognises that the complexity of approval, fragmentation of

stakeholders, and slow decision making are contextual factors, but it fails to link these to the regulatory context of procurement, building-control, environmental and labour that affects the way delay is recorded, interpreted and decided in practice. This study complements that by adding the regulatory environment to the explanatory chain, and not taking it as background.

A third gap has to do with contextual specificity. International studies of claims and disputes offer useful conceptual frameworks, but are generally based in more administrative and claims-prone environments than exist in Bangladeshi public construction. These frameworks have some conceptual relevance, but cannot be taken as a given in a system where bureaucratic approval processes, loose decision-making and compliance-driven governance affect dispute and delivery outcomes and the practice of EOT management.

This thesis proposes a literature-based analysis framework to overcome these gaps. In Bangladesh, the regulatory context, the procedural formality, fragmentation of stakeholders, complexity of approval procedures, and accountability mechanisms constitute the contextual underpinnings of EOT claims. In this context, the quality of EOT claim management is characterized by the seven dimensions in Section 2.3: documentation quality, procedural timeliness, analytical rigour, clarity in the allocation of responsibilities, quality of communication and coordination, decision consistency and procedural fairness, and integration in the life-cycle.

Together these factors contribute to the outcomes in claim handling: clarity of substantiation, credibility of entitlement analysis, consistency of expectations, and residual ambiguity in decisions. Those outcomes then shape the nature of disagreement and whether it is managed within a dispute avoidance framework or moves into formal conflict, and ultimately the project's delivery: schedule stability, work continuity, stakeholder relationships, administrative burden and the overall project team's ability to manage uncertainty.

The analytical reasoning of the thesis becomes as follows: The quality of EOT claim management is influenced by the public construction conditions; Quality of EOT claim influences the outcome of claim handling; whether disagreement is avoided or escalated as a result of the outcome of claim handling; and the consequences of that on the delivery of the project. This framework brings together EOT administration and its relationship with claims management, dispute prevention and delivery performance and directly answers the research question.

2.7 Summary

The literature was examined in this chapter and the concept for the thesis was laid out. Construction delay is an important and challenging issue in both the contractual and managerial aspects of a project, and EOT is the key tool available to determine and manage it. The dimensions of delay analysis, documentation, contract administration, communication, procedural fairness, life-cycle integration, and project environment conditions of the overall governance are interrelated and influence the quality of EOT administration.

The literature shows that the concept of EOT claim management is more than a contractual procedure that is triggered once a delay has happened. It is one process that links the delay events, contractual interpretation, administrative response, and delivery consequences. The quality of documentation, timeliness of procedures, validity of analysis and the administrative context in which decisions are made all influence the handling of EOT claims, in addition to the strength of the underlying entitlement.

The chapter has also demonstrated that efficient administration of the EOT is intimately related with avoidance of disputes. Disputes aren't caused by delay itself; they're caused by the way delay is handled: poorly, slowly, with insufficient evidence, or inconsistently. Claim management is thus a feasible route for dispute avoidance in complex public construction settings, realised or hindered. The quality of EOT administration is linked to

whether or not a particular extension is approved or not and whether the project relationship is strengthened or gradually weakened.

These dynamics are complicated in the Bangladeshi context by the specific legal and regulatory context of procurement law, building-control requirements, environmental compliance, and labour regulation, which spreads responsibility and adds to the procedural complications. This can make it more challenging to deliver quality EOT claim management and more critical in impact.

The chapter points out a research gap around the limited understanding of the integrated relationship between the quality of EOT claim handling and avoiding disputes and delivering projects in public construction in Bangladesh. This analytical framework fills that void by linking together conditions of public construction, administration of the EOT, claim handling results, avoidance or escalation of disputes, and project delivery into an interpretive framework. This will be the conceptual basis for the rest of the thesis.

3 Research Methodology

3.1 Introduction

This chapter sets out the methodological foundation of the thesis. It explains the philosophical assumptions that underpin the inquiry, justifies the qualitative research design, and describes the specific procedures used to gather and analyse data. The aim is not simply to record what was done, but to demonstrate why each methodological choice is appropriate to the research question and how the chosen procedures together produce trustworthy, defensible findings. The chapter therefore moves from the broadest philosophical level down to the practical mechanics of interviewing, transcribing, coding and reporting.

The thesis addresses the following research question, formulated in Chapter 1:

> *What role does the quality of the extension of time claim management play in dispute avoidance and project delivery in the public construction sector in Bangladesh?*

To answer this question, it is necessary to understand the perceptions, experiences and the process of handling an extension of time (EOT) claim by those involved in publicly funded construction projects. This investigation should be qualitative rather than quantitative because the phenomena of interest, judgements of claim quality, nature of the disputes and lived consequences to project delivery, are interpretive and context bounded in nature rather than directly measurable. The methodological design is therefore based on two complementary parts: firstly, a structured review of the academic literature, which sets the conceptual framework introduced in Chapter 2, and secondly, a series of semi-structured interviews with practitioners with first-hand experience of the EOT administration on Bangladeshi public projects. Each of these parts is elaborated in the rest of the chapter.

3.2 Research Philosophy

All research studies are based on assumptions about the nature of reality and assumptions about the way knowledge of this reality can be gained. The research philosophy influences all the subsequent decisions, which include what is considered to be a legitimate question, what is regarded as evidence and how the findings are interpreted (Saunders et al., 2019). Explicitly stating these assumptions at the beginning is, therefore, important.

This research is based on an interpretivist epistemological approach. Interpretivism assumes that the social world cannot be studied like the natural world because human action is motivated by meaning, intention and context (Saunders et al., 2019). The aim of interpretive research is not to look for universal laws or objective measures, but to gain insight into how people make sense of their situation. This is a very suitable position for the present study as EOT claim management is not a purely technical exercise. It includes matters of judgment, contractual interpretation, relationship trust between parties and bureaucratic decision making which are not measurable in numbers.

The study has a constructivist ontological perspective. The understanding of EOT administration is considered socially constructed as a result of interaction and shared understandings of actors involved (Creswell & Creswell, 2018). The claim is created by a contractor, approved by a consultant and rejected by a public client, each with a different perspective on the same facts based on the roles they play and the institutional incentives they receive. The purpose of this research is to capture these multi-perspectives, not to impose a single authoritative perspective; and the philosophical approach is to be committed to taking these perspectives seriously as data.

The implication for method is that evidence to inform the inquiry comes from the accounts of experienced practitioners that are gathered in a manner that permits nuance,

ambiguity and contradiction. The positivist or post-positivist approach, on the other hand, would have driven the design in the direction of survey instruments or quantitative content analysis. They would not have allowed for the contextualization that would be necessary to answer the research question as posed.

3.3 Research Approach

The study is qualitative. Qualitative research is interested in understanding phenomena that cannot be measured across a large sample, and it is appropriate to questions that explore process, meaning, and lived experience, which are the types of questions that this thesis asks (Bryman, 2016).

The approach in conducting research in this case is mostly inductive. This research approach is based on empirical observations and practitioner accounts rather than on a pre-established research hypothesis, and aims to develop analytical insights rather than testing a hypothesis (Saunders et al., 2019). There are two reasons to use an inductive orientation. The first is that the link between the quality of claims, avoidance of disputes and project delivery in the context of Bangladesh has not been directly analyzed in the literature and therefore there is no consensus about the theory to test. Second, induction gives patterns, that is, meaning, that emerge from participants' own description, rather than ones that are imposed by the researcher, which reflects the constructivist commitments outlined above.

But this is not an entirely inductive approach. The literature review in Chapter 2 yielded five components of analysis: public construction conditions, quality of the EOT claim-management process, outcomes of claim handling, dispute avoidance/escalation, and outcomes of projects. These components guide the interpretation of the data. Such an inductive openness associated with the sensitising conceptual framework is sometimes

called an abductive or hybrid approach (Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006). It enables the analysis to be based on the participants' own experiences while at the same time reflecting a conscious attempt to work with the theoretical issues that emerged from the literature.

3.4 Research Design

The research theory is two phases of qualitative research, that is, first a structured literature review, and second, primary qualitative data collection using semi-structured interviews. The two phases are not mutually exclusive. The literature review provides the conceptual and empirical foundation for the inquiry, and helps to shape the topics covered in the interviews; the interviews provide substantive support for the analysis and help to validate the explanatory power of the literature against their experience as experts in the public-construction environment in Bangladesh.

This design is similar to Creswell and Creswell's (2018) multi-method qualitative design. It enables the researcher to cross-check what they have found in the literature with the experiences of practitioners who are much more knowledgeable and experienced, and thus provides a more holistic and contextual analysis than either approach could give on its own. The literature review focuses on the known dimensions of the administration of EOT, and how the issues of dispute avoidance and project delivery play out at a conceptual level, while the interviews examine the dimensions of the administration of EOT in a particular institutional and national context. The phases of the design are summarised in table 1.

Table 1. Phases of the research design.

Phase	Activity
Phase 1 — Conceptual foundation	Structured review of 34 peer-reviewed sources (2003–2026) on EOT claim management, delay analysis, dispute causation and avoidance, record-keeping practice, and the Bangladeshi public-construction context. Outputs: synthesised conceptual framework (Chapter 2) and an interview guide grounded in identified gaps.
Phase 2 — Primary qualitative inquiry	Semi-structured interviews were conducted with 45–60 minutes each with purposively sampled people, including contractors, supervision consultants, public client agencies, project finance and PPP specialists, all involved in the four corner relationship between Bangladesh and public construction and directly associated with EOT claim management for public funded projects.
Phase 3 — Analysis and integration	Verbatim transcription, anonymisation, and Braun and Clarke (2006) six-phase thematic analysis of interview data, interpreted through the conceptual framework and triangulated with the literature review to answer the research question.

3.5 Structured Literature Review

3.5.1 Purpose and approach

There are two purposes of the literature review in the thesis. First, it provides a theoretical basis and conceptual understanding of the work of EOT claim management, dispute avoidance and project delivery in construction. Second, it establishes the lack of knowledge that is being filled by this research, especially in the context of public funding for construction in developing countries. The review is structured and selective, rather than a broad narrative survey, and is based on the principles of structured review outlined by Tranfield et al. (2003), which included identifying sources, screening and analysis.

3.5.2 Search strategy and source selection

The literature search was carried out in three academic databases: Scopus, Web of Science and Google Scholar. Journal articles from peer-reviewed journals were used as the primary source type, with selected conference papers and book chapters used where they provided specific relevant insights. The search was conducted in English language publications and was restricted to the last 20 years of publications unless the foundational work was cited in recent scholarship.

The search terms used were a mix of the following: “extension of time claims”, “EOT claims”, “construction delay analysis”, “delay and disruption claims”, “claim management”, “construction disputes”, “dispute avoidance”, “claim substantiation”, “record-keeping in construction”, “public construction projects”, and “Bangladesh construction”. Boolean operators (AND, OR) were used to refine and expand the search as necessary.

Articles were selected for relevance through the screening of titles, abstracts and conclusions and then read in full. Sources were selected based on their focus on at least one of the following: substantiation and management of EOT claims; delay analysis methods and techniques; documentation and record-keeping practices; causes and prevention of construction disputes; and the Bangladeshi construction context. Sources were only included if they discussed issues of general technical engineering, rather than claim administration, or if the construction context in which the claims were discussed was too different from the context of the Bangladeshi public sector to provide transferable insight. A total of 34 peer reviewed articles were selected for closer examination. These range from 2003 to 2026, most of them published after 2018, to highlight recent research, but with the most cited foundational works retained.

3.5.3 Analysis and synthesis

The articles that were selected were read thoroughly and analysed thematically. Instead of summarizing each source in turn, the analysis will identify patterns, agreements, disagreements, and missing areas in the literature and structure them around the conceptual themes that underlie the research question: EOT claim processes; documentation and delay analysis; causes of dispute and avoidance strategies; and the Bangladeshi public construction environment. This thematic organisation enables the literature review to directly address the research question, and not just to be a descriptive catalogue of previous research, and resulted in the development of the five-component analytical framework which will guide the empirical research phase of the study.

3.6 Semi-Structured Interviews

3.6.1 Rationale for qualitative interviews

The literature review gives a good conceptual understanding of the EOT claim management but cannot capture the actual experience and practice of the EOT claim management in Bangladesh. Primary data collection is thus required to place the analysis in contact with real-world professional practice. The most appropriate method was semi-structured interviews.

Semi-structured interviews are situated somewhere between the extremes of fully structured and fully open interviews (Bryman, 2016). They are moderated by a set of questions and topics that are predetermined to ensure that the key issues related to the overall research question are covered across all the participants and that the researcher has enough flexibility to explore further unusual or interesting answers. The flexibility is especially important in a study where a seasoned practitioner might raise issues on EOT administration that were not thought of beforehand and in a study where the amount of individual practitioner experience is a part of what the study is looking for (Kvale & Brinkmann, 2015).

Alternative methods were considered and rejected. However, a questionnaire survey was not considered as appropriate for the topic, as it is sensitive and requires rapport, probing and clarification which is not possible with a questionnaire. Due to the contractual differences between the participants from the contractor and the consultant / public-client side, not enough participants were willing to take part in the focus groups, and the group atmosphere might have prevented them from openly disclosing information. On practical considerations, single case ethnography was rejected as it would have generated a too narrow perspective on EOT practice in the public-construction industry in the time frame available for a Master's thesis.

3.6.2 Interview guide development

The interview guide was created based on the research question and the conceptual themes found in the literature review. It is organised into six thematic sections with 25 open-ended questions summarised as follows: (A) participant background and experience of EOT claims; (B) understanding of EOT claims and their purpose, and markers of well-managed and mishandled administration; (C) the EOT claim process and its procedural and managerial challenges, and the different roles of client, contractor, consultant and approving authority; (D) documentation, delay analysis and decision making; (E) the relationship between the quality of handling EOT claims and avoiding disputes and achieving project delivery; and (F) practical recommendations for improvement, with closing reflections.

The guide is open-ended to elicit detailed, reflective responses and follow-up questions are prepared to prompt elaboration as necessary. The final version was checked for clarity and coverage prior to use, and provided to participants before use as a component of the ethical consent process, enabling them to prepare and engage substantively with the topics. The full interview guide can be found in Appendix A.

3.7 Participant Selection and Sampling

3.7.1 Sampling strategy

The study adopts purposive sampling which is a non-probability sampling method where the participants are strategically selected based on the specific knowledge, experience and characteristics of the study that focuses on the research question (Patton, 2015). The study focuses on the practice of EOT claim management in the construction field of public sector in Bangladesh, so the suitable participants in this study are the people who are directly and substantially involved in the process of EOT claim management. In qualitative research, purposive sampling is a common practice that ensures that the data are collected from people who are best able to answer the research question (Creswell & Creswell, 2018; Patton, 2015).

In the purposive sampling, the study tries to capture diversity in the main roles of the contracts in the publicly funded construction. A literature review revealed that the views of contractors, consultants and public clients are systematically different with respect to the causes of delay and responsibility for claims (Cakmak, 2022; Sourav et al., 2025). The sample is therefore arranged informally to ensure that each of these roles is represented, with the assistance of an independent expert (arbitrator, adjudicator or legal advisor) where possible, who is not a party to the contract.

3.7.2 Inclusion criteria

The participants had to have at least one of the following experiences: direct experience in preparing, reviewing, advising on or approving EOT claims in publicly funded construction projects in Bangladesh; experience of construction contract administration or claims management in a relevant professional position (e.g. as a contractor, a consultant, as a supervising engineer or a government client representative); or experience of construction disputes arising from delay and time-extension issues on public construction projects in Bangladesh. At least five years of relevant professional experience was established as a criterion, to guarantee that participants would be able to speak with authority about a portfolio of projects, not just one recent project.

3.7.3 Target sample size and current status

The study will be conducted with nine participants. This aligns with existing recommendations for purposive, expert sample-based interview research, which indicate that if the sample size is between six and fifteen, it is likely that the sample reaches thematic saturation, where further interviews do not provide significantly new insights for analysis (Guest et al., 2006; Hennink & Kaiser, 2022). Although nine interviews were held, this is sufficient to allow for the identification of themes and the comparison of perspectives across the four corner roles of the contractual relationship, without being too time consuming or extensive for a Master's thesis.

The practitioners were recruited through professional networks and purposive outreach, and all nine interviews were conducted. The sample addresses the four corners of the contractor-consultant-public-client relationship on the contractor and public-client side, as well as from the roads and bridges sector, the education infrastructure sector, the thermal power generation sector, the urban transport public–private partnerships sector and the general civil works sector. Table 2 summarises the participant profile. No personal data is kept for the participants and they are referred to in the thesis with anonymised codes (Int01–Int09) and their professional role.

Table 2. Participant profile.

ID	Professional role / sector	Status
Int01	Senior Consultant; multi-sector, South Asia	Completed
Int02	Senior Consultant; arbitration witness; multi-sector, donor-funded and ADP	Completed
Int03	Retired Chief Engineer (Roads and Highways); Roads and bridges	Completed
Int04	PPP Project Engineer (SPV / concessionaire); Urban transport PPP	Completed

Int05	Power Plant Project Manager (owner side); Thermal power EPC	Completed
Int06	Retired Chief Engineer (Education Engineering Department); Education infrastructure	Completed
Int07	Director of Operations, contractor firm; Civil works	Completed
Int08	Engineer-under-contract (FIDIC); Public infrastructure	Completed
Int09	Project Director, implementing agency; Government project office	Completed

3.8 Data Collection Process

Interviews are conducted online via video conferencing platforms, The interviews are held online through video conferencing platforms such as Microsoft Teams and Zoom, and WhatsApp video as an alternative for interviewees who are unable to access these platforms due to institutional constraints. The geographic separation of the researcher from the participants and the practical limitations in conducting field research in Bangladesh, have been mirrored by the convenience for senior practitioners with limited availability to participate online. Every session is audio taped with the written prior consent of the participant, as indicated in the participant information sheet and verbally at the beginning of the session.

The sessions are semi-conversational in nature. The interview guide establishes a structure, but the topics of conversation are encouraged to be spontaneous and to include the concerns that are raised by participants. Probing questions are used to elicit elaboration on key points; the sequence of questions are varied if there is a natural sequence of questions that makes more sense given the way a participant's account unfolds. The length of each interview will vary from forty-five to sixty minutes, depending on

response length and breadth of issues raised, but not to exceed seventy-five minutes to respect participant time.

In order to maintain accuracy, transcription is done as quickly as possible after every interview, typically within three days. The platform's automatic transcription is taken as a reference and then cross-checked with the recorded audio file to fix the inaccuracies made by the computer program, especially in technical terms and Bangla language project names. Participants are also anonymous in the transcripts, with their professional role used to identify them instead of their name, and anonymous codes (Int01, Int02, etc., up to Int09) used to identify each participant; project names, organisations and other potentially identifying information are also anonymised and replaced with generic descriptions. Original recordings, verbatim and anonymised analytical transcripts are kept on separate encrypted drives and only accessible by the researcher.

3.9 Data Analysis: Thematic Analysis

Thematic analysis is adopted to analyse the interview data, following the six phase framework of Braun and Clarke (2006) and further developed as reflexive thematic analysis (Braun & Clarke, 2022). Thematic analysis is a flexible and popular qualitative analysis technique that can be used to identify, analyze and report patterns in a data set. It is especially appropriate for research oriented towards comprehending the significance of the experiences and views of the participants, which is the aim of the interview aspect of this study.

The first stage involves the researcher reading and re-reading the transcripts, and making initial notes on ideas that emerge. The second phase involves systematically creating initial codes throughout the entire dataset that are relevant to the research question, or analytically interesting. Coding takes place in NVivo 15 against a structured codebook

that was developed through the first two coding phases, with the input of researchers, in order to provide complete coverage of the research question, comprising nine parent nodes and thirty-one child codes. The third phase involves sorting and categorizing codes into candidate themes, and collecting all the relevant data extracts for each theme. In the fourth phase, candidate themes are checked against the entire data set and developed, some are combined, some are expanded and some are eliminated if they don't hold true for the data set overall. In the fifth phase, each theme is well described and well named, reflecting their analytical content. During the sixth and final phase, the analysis is captured in writing, presenting each theme in detail and accompanied by extracts of data that illustrate each theme, and are directly related to the research question.

The analysis is mostly inductive, that is, rather than themes being pre-defined, they are discovered as a result of the analysis of the data. The research question and the conceptual framework of five components developed in Chapter 2, however, offer an analytical lens and thus influence the reading and interpretation of data. This is an inductive-deductive hybrid orientation that enables findings to be grounded on participants' own accounts while also engaging in the issues raised in the literature, both theoretical and empirical (Fereday & Muir-Cochrane, 2006). Any theme that emerges spontaneously and is not part of the inquiry is explicitly identified and reported, so that the inquiry is not prematurely closed.

3.10 Trustworthiness and Quality of Research

The traditional quantitative measures of internal validity, external validity, reliability and objectivity are often replaced by the qualitative measures of trustworthiness in qualitative research, as developed by Lincoln and Guba (1985). The framework consists of four criteria: credibility, transferability, dependability and confirmability, all of which offer a guideline for evaluating the rigour and integrity of qualitative inquiry. The approaches taken to meet each criterion in the study are outlined below.

The degree of confidence that can be placed in the findings as representations of the participants' perspectives is called credibility. The use of verbatim transcripts instead of researcher summaries, the use of a structured interview guide across all participants and the use of member checking with at least three of the participants on a draft summary of findings before finalisation, and cross-referencing participant accounts with findings from the literature review to identify points of convergence and divergence, all provide credibility for this study.

Transferability relates to the applicability of the results outside of the context explored. This is a qualitative study and is not trying to generalise to the national or sectoral level. Instead, the study's findings are supported by thick description of context, participants and procedure (Lincoln & Guba, 1985), enabling the reader to determine whether the findings can be transferred to similar situations such as public construction in other countries in South Asia with similar regulatory and contractual situations.

Dependability is the consistency and stability of the research process throughout the study. It is supported by having a clear audit of methodological decisions (literature search log, interview guide, consent forms, coding scheme and a reflexive memo file). The audit trail is the ability to trace back the research process and in principle should enable another researcher to follow the same process.

Confirmability is the extent to which the results are based on the data and not the researcher's preconceptions. Here the researcher's reflexivity, or critical awareness of how his/her background, assumptions and positionality can impact the inquiry, is key. The researcher is a Bangladeshi national, who has some professional experience with construction context, which is useful to provide contextual insight but may also lead to confirmation bias. To control the risk, interpretations are kept firmly grounded in the data, a reflexive memo is kept during the research process, and the researcher is intentionally aware of interpretations that are contrary to the initial assumptions.

3.11 Ethical Considerations

The research is carried out following the ethical principles of the University of Vaasa and the Finnish Advisory Board on Research Integrity (TENK 2019), and in line with the general principles of responsible social science research. Three principles in particular influence the design of this study: informed consent, voluntary participation and confidentiality.

A participant information sheet containing a description of the study, the nature of participation, the use of the data, and the protection of confidentiality is provided to all participants in written form before the interview and a copy of the interview guide. Participating is strictly voluntary and participants can opt out at any time before analysis is completed, for any reason, with no consequences. Interviewing is only recorded with clear prior written permission and repeated verbally at the beginning of an interview.

Transcripts are anonymised prior to analysis. The names of participants are not used in the thesis or in any of the attached files and their specific names are substituted by generic terms such as project, organisation, person, etc. Interviews are recorded on encrypted drives and are only accessible by the researcher, who maintains secure storage and access to the audio recordings.Interviews are recorded on encrypted drives and only the researcher has access to them, ensuring that the audio recordings are stored and accessed securely. At any stage, no other sensitive personal data is gathered beyond what is related to the professional experience or opinions concerning the subject of the research. The ethical risks for this research are deemed low because the research subjects are not vulnerable individuals or sensitive populations, but rather experienced professionals, whose views are being collected on a specialised topic. There are no financial or material rewards for participation beyond the researcher's thanks for the time and contribution.

3.12 Summary

The methodological design of the research has been presented in a structured and reasoned manner in this chapter. The research method used in this research is interpretivist epistemology and constructivist ontology with a qualitative approach, which is primarily inductive, with the conceptual framework used in this study is five components developed in Chapter 2. The study uses a mixed method of structured literature review of 34 peer-reviewed publications and nine purposively chosen semi-structured interviews with practitioners in the field of public construction in Bangladesh to represent the four-corner relationship (contractors, supervision consultants, public client agencies and project finance and PPP specialists). Interviews were conducted online and recorded with the consent of the interviewees, transcribed verbatim, anonymized by using codes Int01-Int09, and coded with a structured codebook of nine parent nodes and thirty-one child codes using NVivo 15, employing the six-phase reflexive thematic analysis framework proposed by Braun and Clarke (2006, 2022). Rigorous measures for credibility, transferability, dependability and confirmability are implemented, and the study is carried out in line with the ethical principles of informed consent, voluntary participation and confidentiality. All methodological decisions are consistent throughout the research and directly related to the research question. The results of this methodology, based on the interview data are dealt with in the next chapter.

4 Results

This chapter provides the empirical results of the study and discusses the results in relation to the literature reviewed in Chapter 2. The findings are based on nine semi-structured interviews conducted with the senior practitioners from each of the four corners of the Bangladeshi public construction relationship: contractors, supervision consultants, public client agencies, project finance and PPP specialists, and analysed with reflexive thematic analysis procedure as explained in Chapter 3. The chapter is divided into four sections, aligned with the four themes that arose from the NVivo 15 coding process: the quality of EOT administration (section 4.1), institutional and governance barriers that affect its outcomes (4.2), communication as a preventive factor (4.3), and the consequences of poor EOT management and the reform pathways that have been suggested by the participants (4.4). A short synthesis (4.5), which connects the four themes, restates the research question.

A structured codebook of nine parent nodes and thirty-one child codes (Codebook in NVivo 15) was used to code each transcript. The four themes found in the sections that follow are the outcome of the third and fourth stages of Braun and Clarke's (2006, 2022) reflexive procedure, where the initial codes were reviewed, collapsed and re-organised in relation to the research question. In this chapter, quotations are verbatim from the transcripts (small disfluencies have been silently deleted for ease of reading). The participants are numbered using anonymised codes (Int01–Int09) and also their professional role, following the personal-communication conventions outlined in section 3.7 of the methodology chapter.

A word cloud was created in NVivo 15 using the interview corpus combined with the rest of the data to provide a visual entry into the data, as shown in Figure 1. The substantives appearing most frequently, (i.e. claim, time, project, EOT, delay, contractor, engineer, records, approval and decision) suggest the outline of the themes explored in the subsequent sections and indicate that the participants used the vocabulary with which they presented the issue to be largely congruent with the literature reviewed in Chapter 2.

Figure 2. Word cloud of the most frequently occurring terms across the nine interview transcripts (generated in NVivo 15).

Table 3 summarises the participant sample. Participants are presented in the anonymised order used throughout the chapter; their roles, sectors and years of experience are reported to establish credibility while preserving anonymity. The sample covers the contractor, consultant and public-client sides of the four-corner relationship, and includes perspectives from roads and bridges, education infrastructure, thermal power generation, urban transport public–private partnerships, and general civil works.

Table 3. Profile of the nine interview participants.

Code	Role / position	Sector	Years
Int01	Senior Consultant	Multi-sector, South Asia	20+
Int02	Senior Consultant; arbitration witness	Multi-sector, donor-funded and ADP	25
Int03	Retired Chief Engineer (Roads and Highways)	Roads and bridges	34
Int04	PPP Project Engineer	Urban transport PPP	13
Int05	Power Plant Project Manager (owner side)	Thermal power EPC	18
Int06	Retired Chief Engineer (Education Engineering Department)	Education infrastructure	33
Int07	Director of Operations, contractor firm	Civil works	22
Int08	Engineer-under-contract (FIDIC)	Public infrastructure	20+
Int09	Project Director, implementing agency	Government project office	20+

Table 4 reports the coding density across the nine parent nodes of the codebook. Density is reported as the number of files (interviews) in which the node was coded and the total number of references coded under that node, providing a transparent record of the empirical weight behind the findings.

Table 4. Coding density across the nine parent nodes of the NVivo codebook.

Parent node	Files	References
1. EOT Process & Administration	9	27
2. Documentation & Record-Keeping	9	29
3. Delay Analysis	7	16
4. Public Sector Approval Procedures	8	21
5. Stakeholder Roles & Capacity	9	28
6. Communication & Coordination	6	14
7. Dispute Avoidance	9	18
8. Project Delivery Impact	7	23
9. Improvement Recommendations	9	19

The following two observations are made from the coding density. First, all of the nine nodes are grounded in evidence from interviews, and each of the six nodes has at least six interviews providing evidence. The themes below are thus based on convergence across participants and not on the emphasis of any one. Second, the most densified area, documentation and record-keeping, stakeholder roles, EOT process and administration, and project delivery impact – foreshadows the main theme of the chapter, that dispute and delivery outcomes are a function of the quality of EOT administration and the institutional setting within which it operates.

4.1 Quality of EOT administration

The first theme that emerged from the data is about the quality of EOT administration, what good practice is, what it lacks, and why. There are three practices that are combined into an indicator of the quality of EOT administration: timely notice of delay events,

contemporaneous record-keeping, and credible delay analysis. On the basis of the evidence of these interviews the failure of any one of these elements is enough to make a claim contestable. This tripartite framing is similar to the literature explored in Chapter 2, which views notice, records and analysis as the basis of defensible entitlement as conducted by Williams (2003), Kao and Yang (2009), and Ali et al. (2020). The interviews substantiate and elaborate on that picture by revealing the ways in which the three practices are played out in the specific contractual and capacity context of public construction in Bangladesh.

4.1.1 Notice requirements and procedural discipline

Every participant identified late or absent notice as the most common entry point into EOT failure. The consultants in the sample framed the issue principally as a contractor-side discipline problem. Int02 (Senior Consultant), reflecting on roughly twenty-five years of involvement at every stage of the EOT process up to arbitration, observed:

> *The first and most common problem is late or missing notice. Many contractors treat the notice clause casually and only formalise the claim near completion, by which time the engineer has a legitimate basis to reject it as time-barred.*
>
> *Int02, Senior Consultant*

The contractor in the sample acknowledged the empirical pattern but reframed its cause as a procedural mismatch between the standard fourteen-day notice clauses found in public-sector contracts and the way delays actually develop in the field:

> *The period for giving notice to public contracts can be as short as fourteen days, and the causes of delay can be a long process and not immediately apparent. Then, when the engineer rejects on a technicality, it's a valid grievance.*
>
> *Int07, Contractor*

The disagreement is not particularly significant for the present argument, but it is significant. The consultants see the failure to give notice as a contractor being "short-tempered", and the contractor sees it as a lack of flexibility in the timing of the procedure. But both views are defensible, according to the literature: Kumaraswamy and Yogeswaran (2003) report on the occurrence of notice failures in various jurisdictions and ascribe

the failures to a combination of inexperience by contractors and clause design. Ali et al. (2024) confirm the previous literature on the failures of notice and the role that both inexperience by contractors and clause design play in the failures. The present study contributes to the body of knowledge in public work delays by adding the practitioner experience that the fourteen-day window is often not enough to determine the event of the delay, especially when the delay is from an external source, like relocation of utilities or land acquisition. The implication of the research question is that notice discipline is required, but a notice regime which is applied in a strict manner may be a cause of conflict where the clause architecture is not based on a risk profile of the works.

4.1.2 Documentation and contemporaneous record-keeping

If notice represents the procedural gateway to entitlement, contemporaneous records constitute its evidentiary foundation. The node on documentation and record-keeping was the densest single node in the codebook, with twenty-nine references coded across all nine transcripts. The participant whose career is closest to the apex of the public-sector EOT review process expressed the position in its strongest form:

> *Records are decisive. Every approved EOT in my experience rested on a complete contemporary record: notice, monthly progress narrative with photographs, weather logs, site instructions, correspondence with land acquisition and utility agencies, minutes of joint meetings and a current programme update. Every rejected EOT rested on the absence of one or more of those elements.*
>
> *Int03, Retired Chief Engineer, Roads and Highways*

The consultant view was equally unconditional. Int02 articulated the underlying principle in a single sentence that several other participants effectively paraphrased:

> *Records are the entire foundation. Without contemporaneous records you do not have a claim; you have an assertion.*
>
> *Int02, Senior Consultant*

The contractor in the sample, reflecting on the commercial cost of having learned the lesson late, was the most honest:

> *Records decide claims — we learned this the hard way. On projects where we kept disciplined daily diaries, photographs, weather logs, utility correspondence, and*

> *minutes of meetings, we usually got fair extensions. On projects where records were patchy, we lost.*
>
> *Int07, Contractor*

Under the common agreement of record keeping are two sectoral patterns. The first was that the contractor and both of the retired Chief Engineers reported that documentation discipline is uneven throughout the public-works portfolio, and that this unevenness is related to the source of finance. Supervision packages funded with donor money had better records than those in which the supervision arrangement was internal to the implementing agency, in the sense of Annual Development Programme (ADP) packages, and in which the lender-required reporting cycles were in place. Second, the education-sector participant (Int06) identified another layer of fragility to be geographic dispersion, with thousands of small sites around the country producing their own documentation workflows, for which the central office has limited resources to monitor. The results of this study complement those of previous research, such as Neupane and Jaisi (2025); Cevikbas et al. (2024), which identified the issue of the lack of awareness as a broader problem rather than a specific one.

4.1.3 Delay analysis methods

The third leg of administrative quality is the technical analysis of delay events. Int02 expressed the connection between analytical method and outcome directly:

> *The choice and execution of the delay analysis is often what separates a defensible claim from a contestable one. Where the contractor presents a credible time-impact analysis or a windows-based analysis that traces specific delay events to specific activities on the critical path, the engineer typically has a clear basis for recommending an extension.*
>
> *Int02, Senior Consultant*

The education-sector participant identified the analytical capacity gap as a portfolio-wide problem affecting both the contracting and supervising sides:

> *The one tool that we found was least utilized in our portfolio was delay analysis. The majority of EED contractors only provided an as-planned-versus-as-built comparison and a narrative, which is easy to reject technically and hard to approve on*

> *merit. The gap was, of course, on both sides, with contractors and our own field engineers.*
>
> *Int06, Retired Chief Engineer, EED*

The findings here track closely with the analytical typology offered by Arditi and Pattanakitchamroon (2006), Kao and Yang (2009), and more recently Vo et al. (2025): defensibility increases as the analysis moves from narrative and as-planned-versus-as-built approaches toward time-impact and windows-based methods. The novelty in the present data is that the capacity gap is reported on both sides of the contract simultaneously. A contractor that cannot construct a windows analysis is met by an engineer who cannot evaluate one; the result is a determination process that defaults to negotiation under conditions of mutual evidentiary weakness. This dual capacity gap is, in this study's reading, the single most important technical reason that EOT administration in Bangladeshi public works is more contested than its FIDIC-based counterparts on donor-funded packages, where independently appointed engineers and lender-mandated programme management routines raise the analytical baseline on both sides.

Taken together, the three sub-themes establish the empirical content of administration quality. The findings are consistent with the international literature in the abstract and depart from it in the particular: notice failure is universal but takes on a clause-design dimension in the Bangladeshi context; record-keeping is universally endorsed but unevenly practised along the donor-funded and ADP-funded divide; and delay analysis is universally accepted as the technical backbone of defensible entitlement but is constrained by a capacity gap that operates symmetrically on contractor and client sides. The next section turns to the institutional environment in which these administrative practices are conducted, where participants located the most powerful determinants of EOT outcomes.

4.2 Institutional and governance barriers

The most striking single finding of the study is that, even when the three components of administrative quality discussed in section 4.1 are in place, the resulting EOT

determination must still pass through an institutional architecture that participants identified as the single most powerful determinant of outcomes in Bangladeshi public construction. Three sub-themes are addressed in turn: the multi-layered approval chain (4.2.1); stakeholder roles, independence and capacity (4.2.2); and the contrast between FIDIC-based donor-funded contracts and Public Procurement Rules (PPR) contracts (4.2.3).

4.2.1 The multi-layered approval chain

The image that emerged in the interviews is of a determination, which has to pass through a series of other reviews: the project director, the secretary of the implementing ministry, the ministry itself, and, in the case of large claims, the Cabinet Committee on Public Procurement (CCPP) and, as needed, the Executive Committee of the National Economic Council (ECNEC). The consultant's most acute opinion was:

> *In my humble opinion they are the largest single factor that determines EOT outcomes in Bangladesh. In the public sector, approvals are not intended as a time-saving process, but as a way to ensure accountability, and they involve more than a single decision-making committee and sign off. Every step introduces a period of queuing, every step introduces the possibility of re-examination, and each step has a possibility of staff change.*
>
> *Int02, Senior Consultant*

The insider's viewpoint from the public service was clearly comparable in content but more balanced in expression:

> *The engineer's determination is just one of a series of steps, especially in cases of large claims where the RDPP must be revised and the ECNEC must be obtained. Time is spent in the queues, re-examination occurs and staff changes can effectively reset the review. The final result is that often decisions are delayed until the contractor has already exposed himself to LD and has lost faith in the process.*
>
> *Int03, Retired Chief Engineer, Roads and Highways*

The contractor experienced the same restraint from the cash-flow side:

> *The primary culprit that leads to disputes becoming EOT claims is public-sector approval procedures. The engineer's determination can be justified and well-timed,*

> *but it has to go through the project director, secretary, ministry, and for large claims, sometimes the CCPP, which are all months away. We've surpassed the original completion date by the time the decision arrives, and are subject to liquidated damages.*
>
> *Int07, Contractor*

Two analysis observations are offered here. First of all, the institutional barrier is not just regarded from outside the system, but also from the inside. Prior to identifying the dysfunctions of the accountability rationale behind the approval chain, both retired Chief Engineers (Int03 and Int06) and the active project director (Int09) recognized the rationale of the approval chain. This is a more complex result than the prevailing interpretation in the literature on the governance barriers, which often appears as external factors that constrain technically capable claim handling, as in Sourav et al. (2025) and Hoque et al. (2023). Second, the chain is not just slow, but it transforms the engineer's determination into a sort of draft recommendation which is looked at over and over again. As the determination is made, practitioners say, the commercial pressure to escalate turns into a commercial motive, with the contractor having the means and intent to challenge the determination at that time.

4.2.2 Stakeholder roles, independence and capacity

The second sub-theme concerns the relational structure of the four-corner relationship and, in particular, the structural fragility of the consultant's independence. The FIDIC-trained consultant in the sample articulated the issue with unusual clarity:

> *The honest difficulty for the consultant is that our independence is structurally fragile, since the client is also our next-job referee. We need contractual and professional norms that protect that independence. Our independence is the load-bearing element of the system. When the consultant's independence is compromised, the determination loses its integrity and the dispute mechanism takes over.*
>
> *Int08, FIDIC Consultant*

The contractor side was able to determine the same diagnosis from the other end:

> *It is the client who determines the pace: If the project director plays it safe until EOT, the whole chain will follow. The technical referee should be the consultant —*

> *and the good ones are — but they are not entirely independent since their next contract is with the same client.*
>
> Int07, Contractor

The next sub-element that arose was inter-agency coordination. The Chief Engineer (RHD retired) put it most succinctly:

> *The land acquisition process for a typical highway widening project includes the district administration, the gas utility, the power utility, the telecom operators, the water authority, the railway in certain areas and the environmental authority. There is no coordination mechanism in place that has the authority to coordinate these, and the lack of a powerful coordinating body leads to delays.*
>
> *Int03, Retired Chief Engineer, Roads and Highways*

From the PPP viewpoint, an additional institutional layer was added:

> *The consequence is that such claims turn into disputes as a result of the significant time lag in making decisions. The problem is not with the merit of the technical issues or proposals, which are being handled by the Independent Engineer, but rather with the inability of the Authority to react to the claims of the concessionaires within a commercially viable time.*
>
> *Int04, PPP Project Engineer*

These four observations can be summarized in one single: the institutional context in which the engineer's determination is created is not the same as the context in which the determination itself is created. Without contractual support, the consultant cannot assert independence; without protected delegation, the client cannot keep pace with decision making; there is no statutory base for the coordination with external agencies; and the authorities of PPPs are structurally under-resourced to process the number of claims. The present data will be useful for addressing each of these issues, namely, in isolation, and the literature cited in this section has predicted each of these (Cakmak, 2022; Senarath et al., 2026), but the present data will show that all four work simultaneously in the Bangladeshi public-works context and that a thorough and painstaking determination by the engineer, in isolation, is not enough to ensure a timely resolution.

4.2.3 Contract architecture: FIDIC versus PPR

A recurring contrast in the interviews was that between FIDIC-based donor-funded contracts and PPR-based domestically funded contracts. Int03 expressed the contrast in its strongest form:

> *On donor-funded RHD projects the delay analysis is generally robust; on ADP-funded works, capacity to perform and review the analysis remains uneven on both sides of the contract.*
>
> *Int03, Retired Chief Engineer, Roads and Highways*

The discovery comes with a double-edged sword. On the other hand, the data fully corroborate the historical experience reported in the international literature which shows that FIDIC-based forms which include an Engineer, explicit notice and determination periods, and a Dispute Avoidance/Adjudication Board, result in a more disciplined EOT process than their PPR counterpart (Karunarathna et al., 2025; Cevikbas et al., 2024). Others, however, explicitly stated that the contractual form is not, per se, the determining factor. What FIDIC brings on the donor-funded packages is a surrounding institutional environment, with largely independent engineers, external time constraints, lender accountability, uniform reporting protocols, and so on, which is largely missing on the ADP packages. It is not a call for the widest possible implementation of FIDIC forms, it is a call for bringing the institutional settings that make the forms effective into the country. This subtlety is one of the main results of the present study and is discussed again in section 4.4.3.

4.3 Communication as a preventive factor

The third theme is not as similar as the first two. Theme 3 focuses on a behavioural lever, communication discipline that participants determined was the most consistent single indicator that a delay event would turn into a formal dispute versus reach an agreement. Each of the nine participants spoke on the theme, and six of them identified the centre of their own dispute-prevention approach. The sub-themes addressed here are

communication discipline and dispute prevention (4.3.1); the cultural barrier to written communication (4.3.2); and meeting culture and closed progress reviews (4.3.3).

4.3.1 Communication discipline and dispute prevention

Again, the theme was best expressed by the senior-consultant participant:

> Communication is the key to a contract administration issue vs a dispute. Even tough EOT issues work out in a negotiated out-come when the parties are talking, both formally and informally, in writing and in meetings. Even minor problems get sent to arbitration when there is communication failure.
>
> *Int02, Senior Consultant*

The retired Chief Engineer from RHD confirmed the same pattern from the public-client side, with concrete examples from his project portfolio:

> *On the projects where the contractor, the supervision consultant, the resident project staff and the relevant agencies were in regular written and verbal contact, even difficult delay events landed in negotiated outcomes. On the projects where communication had broken down, trivial matters became disputes.*
>
> *Int03, Retired Chief Engineer, Roads and Highways*

The simplest framing of all came from Int01:

> *Communication is very important. Most disputes happen because of differences in understanding between the client and contractor. If issues are discussed from the beginning, disputes can be minimised.*
>
> *Int01, Senior Consultant*

The literature on dispute prevention identified in Chapter 2, including Jagannathan et al. (2025) on lean approaches for early identification of issues and Silva et al. (2025) on the pre-contract dispute avoidance tool kit, and Amoah and Nkosazana (2023) on management strategies for construction contract disputes, generally agree that communication is a preventive tool. What the present data contribute is an indication of the practitioners' emphasis on communication as a lever compared to the other levers that are available. Some explicitly said that communication is a better prevention instrument than designing a contract or improving institutions, because it is one instrument that is fully in the hands of the contracting parties.

4.3.2 The cultural barrier to written communication

Theme 1 demands written contemporisations, Theme 3 shows that in Bangladeshi construction there is a conflict between the culture to avoid written communication and the need for it in the evidentiary discipline. From the sample, the contractor who was the most direct was:

> *Communication is everything. When we talk, when we meet, when we write, issues get put on land in negotiated outcomes. Even a small EOT can get huge if a communication fails. The challenge in Bangladesh is partly cultural in that, people do not like to write letters as it's confrontational or if they do, there's no record. That's something we need to get over.*
>
> *Int07, Contractor*

The education sector view from the senior-officer was almost the same:

> *The cultural element counts: Written cor-respondence can be confrontational, people avoid it – there's no record. Written respectful communication is to be practiced by senior officials..*
>
> *Int06, Retired Chief Engineer, EED*

The key challenge in Bangladeshi EOT practice is captured in the data. In Theme 1, the written communication that serves as the evidentiary basis for a defensible claim is identified, while in Theme 3, it is identified as a culturally loaded act that parties would avoid. The idea is not that the cultural pattern has to be abolished, a few participants said that informal communication has its own preventive value, but that the habit of formal written communication has to be normalised in the institutional practice. The formulation of the senior officers must demonstrate written and respectful communication is the most powerful recommendation in the dataset in this regard. It places the lever for cultural change at the level of professional norms, not individual contractors or consultants.

4.3.3 Meeting culture and closed progress reviews

Several participants distinguished sharply between projects on which regular, closed progress meetings were held and projects on which they were not. The clearest formulation came from Int03:

> *On the RHD donor-funded packages where the supervision consultant ran weekly claim-coordination meetings, issued interim determinations on a regular cadence, and updated the baseline programme monthly, formal disputes were rare. On the ADP-funded packages where claims were postponed until completion, formal disputes were almost guaranteed for the larger contracts.*
>
> *Int03, Retired Chief Engineer, Roads and Highways*

The complexity of EPC power generation amplifies the same logic:

> *Communication discipline is the single most under-priced lever on an EPC power project. Weekly progress meetings, monthly steering committees, daily site coordination calls, and structured written correspondence are what keep complex multi-party issues in the negotiated-resolution space.*
>
> *Int05, Power Plant Project Manager*

The statements are not experimental, but the uniformity of the sectors (roads, power, and by implication from Int04, PPP) is impressive. This is consistent with the lean and pre-contract literature on dispute avoidance that was reviewed in Chapter 2 (Jagannathan et al., 2025; Silva et al., 2025), which sees structured early communication as the most cost-effective preventative step that a project team can take. What the current data contribute is the practitioner focus on cadence – the regular meetings, the regular interim determinations, the regular programme updates. In these statements, the importance of communication discipline is not in what is actually communicated during any particular meeting, but in the practice itself.

4.4 Consequences and reform pathways

The final theme synthesises the consequences of poor EOT management and the reform pathways the participants proposed. Three sub-themes structure the discussion: the escalation pathway by which EOT failure becomes formal dispute (4.4.1); the consequences for project delivery (4.4.2); and the reform agenda that emerged across the interviews (4.4.3).

4.4.1 The escalation pathway: from EOT failure to dispute

Int02 offered what is the most complete description of the escalation pathway in the dataset and what the present study treats as the centrepiece formulation of Theme 4:

> *Poor handling produces disputes through a fairly predictable chain. First, a delay event is not properly noticed, so the records do not capture the cause and effect contemporaneously. Second, the claim is submitted late and globally. Third, the engineer has no good way to determine the claim on its merits and either rejects it conservatively or sits on it. Fourth, by the time the claim is decided, the contractor has incurred liquidated damages and has commercial reasons to escalate. Fifth, what could have been a routine extension turns into a multi-issue dispute with cost claims, delay claims and counter-claims layered on top of each other.*
>
> *Int02, Senior Consultant*

The same participant, and independently the retired RHD Chief Engineer, used a single sentence to summarise the practical consequence:

> *The painful truth is that most disputes are lost or won on the project, not in the arbitration room.*
>
> *Int02, Senior Consultant*

The PPP perspective showed how the escalation pathway is amplified by additional contractual tiers:

> *A missed notice at the EPC layer can block entitlement at the concession layer; a delayed determination cascades through both contract tiers; missed milestones strain the financing model. A single mishandled EOT can convert into a multi-million-dollar dispute affecting financial close on follow-on projects.*
>
> *Int04, PPP Project Engineer*

The escalation pathway described here is a substantively novel contribution. The dispute-causation literature reviewed in Chapter 2 (Tariq and Shujaa Safdar Gardezi, 2023; Mirzaee et al., 2024; Wang et al., 2024) identifies a set of causes and a set of effects, but rarely articulates the chain of mechanisms that links the two. The present data describe a five-step escalation in which each step lowers the probability that the next step can be resolved informally: notice failure undermines records; missing records undermine analysis; weak analysis undermines determination; delayed determination produces liquidated-damages exposure; liquidated-damages exposure produces commercial incentive

to escalate. The chain has obvious diagnostic value and, equally important, identifies five distinct intervention points at which the escalation can be interrupted.

4.4.2 Consequences for project delivery

The impact of bad EOT management were reported as common in type.

But very different in size among sectors. The reading for the road sector was

concrete and audit-aware:

> *Immediate and tangible impacts. The contractor is not able to demobilise plant and labour; The project director cannot finalise the supervision consultant cannot close out; Completion of the project report; inability to complete the audit; and in the case of donor-funded packages, delays in the disbursement schedule. With my experience, an EOT decision that is six months late is more expensive than that which is determined in a timely manner, even when it's bad, uncertainty comes at a cost.*
>
> *Int03, Retired Chief Engineer, Roads and Highways*

The power-sector view added a financial scale that none of the other sectors approached:

> *Late EOT decisions result in inability to complete commissioning sequence, delay fuel-supply contract lock-ins, lose transmission synchronisation windows with the grid operator, delay lender drawdowns, and delay PPA capacity payments. In our sector, a six-month-late EOT decision can cost tens of mil-lions of dollars in deferred capacity payments and other financing costs.*
>
> *Int05, Power Plant Project Manager*

The education-sector perspective brought the discussion back to its public-value basis:

> *Each and every delayed school building is a class taught under a tin shed, each and every delayed college hostel is a cohort which cannot be admitted, each and every delayed laboratory is a programme which cannot be taught.*
>
> *Int06, Retired Chief Engineer, EED*

The contractor saw the same situation on the cash flow and balance-sheet exposure:

> *The impact of late EOT decisions is felt first in our cash flow and second on our balance sheet. We can't plan resources or demobilize, subcontractors remain on site past contract dates and bonds remain open, plant rental continues to roll, and we sit in the shadow of liquidated damages that have begun to accrue. It's more expensive for us to get a six-months-late approval than it is to be denied.*
>
> *Int07, Contractor*

These four sectoral readings bring together one of the most significant results of the study. The ramifications of poor EOT management are not hypothetical or distant, but real and quantifiable. These can be from the obvious learning of a school cohort to deflected capacity payments of tens of millions of dollars and they can affect all four actors in the four corner relationship. As discussed in Chapter 2, the literature reviewed on delivery impact (Osei-Asibey et al., 2025; Tabish and Jha, 2011) is based on a composite of time, cost and quality outcomes; the current data expand the composite to include two additional dimensions, public value and stakeholder cash flow, which are more apparent in public construction. Retired Chief Engineers and the project director (Int09) reiterated the same observation: that ambiguity – represented by an undecided EOT – costs more than a decided EOT, even if the decision is bad.

4.4.3 The reform agenda

At least one reform priority was identified by all nine participants and a total of seven of them endorsed a substantially overlapping reform package. The most significant single recommendation, timeliness was the only variable in the dataset that was not a time series:

> *The one thing I would say I would change is timeliness of decision making. Every other eventually, better records, better analysis, better contracts. There is a flow through to a determination and that determination must be made when It can still have an impact on behaviour. It is better to say 'no' now than 'yes' later..*
>
> *Int02, Senior Consultant*

The most detailed reform statement was made by the same participant, who is supportive of the entire package of reforms or partly by seven of the nine participants:

> *First, uniform the EOT clauses in public contracts in Bangladesh. Second, require a minimum programme in Primavera or a similar program at contract signing. stage. Third, create a centralised digital claims register at project level. Fourth, Established service-level goals as part of the public-sector approval process. Fifth, invest in claims-management training.*
>
> *Int02, Senior Consultant*

The retired RHD Chief Engineer offered the closing summary of the reform agenda in terms of institutional resolve rather than technological transformation:

> *The changes we have mentioned don't need new technology and don't need fundamental cultural change. They need the resolve of institutions at department, A determination to continue to receive notices — a resolve to be found guilty, Records held, decisions made timely, inter-agency coordination in place working, and failures as a natural consequence of disputes.*
>
> *Int03, Retired Chief Engineer, Roads and Highways*

The more optimistic counterfeit to that reading was the active project director:

> *EOT management is a governance issue that actually has an impact on public value. money. The reform agenda is not technologically complex, it's a matter of institutional determination. If this resolve can be maintained in the coming few procurement. I believe there will be less conflict, timely project completion, and a decrease in cycle occurrences, in the future and more beneficial to the public finances..*
>
> *Int09, Project Director*

The reform package is impressive in two ways. The first is that it is not technology dependent. The technologies it needs is Primavera-based programming, digital data, etc. are the ones we are referring to claims register, training programmes are structured regularly and are available in the Bangladeshi professional context. Second, it is not contract-led, but rather governance-led where the international reform literature on construction disputes emphasises contract dispute-board mechanisms (Silva et al., 2025; Luvara and Benjamin, 2025), the current data point points to service-level targets in the approval chain, and then to the dispute-resolution mechanism was a secondary consideration, rather than the standardised clauses. The implication for the research question is straightforward: the quality of EOT administration is important, but is mediated by an institutional, the immediate context in which a problem exists and in which its solution can be implemented, and which is subject to reform by the policy makers and procurement authorities.

4.5 Summary

Together, the four themes convey a unified narrative of EOT administration in public construction in Bangladesh. Theme 1 sets out what good practice is and where it falls down:

timely notice, contemporaneous records and credible delay analysis make up the three parts of a defensible claim and the failure of any one of them is enough to make the claim contestable. The engineer's determination in Theme 2 is not necessarily the final word of the contract given the multi-layered approval chain, structurally weak consultant independence, the lack of coordination between inter-agencies, and the difference between the FIDIC based donor-funded contract and the PPR based ADP-funded contract. The more complete the joint control of the parties, the more predictive the behavioural lever for the successful resolution of a delay event through negotiation or formal dispute is. Communication discipline is the most complete joint control lever, in the form of a routine of written, respectful correspondence and closed progress meetings. Theme 4 confirms that the foreseeable escalation trajectory from EOT failure to dispute is the same for all, though the delivery impacts of dispute are different for each sector; and that the governance-led reform agenda, which the participants jointly identified, is equally sectoral specific but universally important.

The research question was: What is the role of EOT claim management quality in avoiding disputes and project delivery in the public construction sector in Bangladesh? The results give us two answers. Quality of EOT administration is a necessary but not sufficient condition in the first part — dispute avoidance. The likelihood of a delay event being resolved through determination, not dispute, is greatly increased if these are high quality notice, record and analysis, provided that the institutional environment described in Theme 2 and reinforced by the communication discipline described in Theme 3 is also present. The relationship is more direct on the second part – project delivery. Bad EOT administration costs the delivery as well, from the lost public value (delayed schools, laboratories) to deferred payments made to lenders and for capacity (tens of millions of dollars). Good EOT administration pays off in delivery, and it does it in a measurable way; by protecting delivery, it removes ambiguity from the project close out, even if the decision is not favourable. The next chapter brings these findings and the literature reviewed in Chapter 2 together to formulate the overall conclusions, contributions and recommendations of the study.

5 Discussion and Conclusions

5.1 Introduction

The preceding chapter presented the empirical findings of nine semi-structured interviews with senior practitioners, organised against four thematic axes: the quality of EOT administration, institutional and governance barriers, communication as a preventive factor, and the consequences of weak claim management together with reform pathways. The present chapter steps back from the thematic structure of Chapter 4 and re-aggregates the findings around the single research question that has animated this study, namely: what role does the quality of the extension of time (EOT) claim management play in dispute avoidance and project delivery in the public construction sector in Bangladesh?

The aim of Chapter 5 is thus four-fold. First, it brings together the empirical evidence in a direct answer to the research question, delineating what quality claims can, and cannot, do on their own. Second, it communicates the theoretical contributions of the study, situating them in the broader literature on construction claims, cause of dispute and procurement governance in developing countries. Thirdly, it will utilize the results in practical implications and recommendations for the main stakeholders (contractors, consultants, public clients, policy makers). Fourth, it admits the restrictions of the study honestly, and suggests directions for further studies which would extend and confirm the present analysis. The chapter ends with a closing section which reintroduces the public-value perspective of the study.

The discussion in the chapter is in dialogue with the literature reviewed in Chapter 2 and the regulatory framework of Bangladeshi public procurement. The purpose is not only to provide an overview of the results of the investigation but also to communicate the significance of the findings for the academic discourse on EOT and dispute management as well as for public construction in Bangladesh.

5.2 Summary of Key Findings in Relation to the Research Question

The research question formulated in the first chapter is whether and how the quality of EOT claim management affects two different downstream outcomes, namely: dispute avoidance and project delivery. The empirical data gathered in Chapter 4 suggests a two-part response, which is more complex than the literature, as a whole, would suggest. Regarding dispute avoidance, the evidence suggests that the quality of EOT claim management is not enough. But the evidence is more direct and observable when it comes to project delivery. The following is unpacking each part of the answer.

5.2.1 EOT Quality and Dispute Avoidance: A Necessary but Not Sufficient Condition

All nine participants converged on the proposition that the technical attributes of a well-prepared EOT claim, including timely written notice, contemporaneous records and a defensible delay analysis, materially reduce the probability that a delay event will escalate into a formal dispute. This finding is consistent with the established literature, including Kumaraswamy and Yogeswaran (2003), Ali et al. (2020) and the systematic review by Ali et al. (2024), which identifies inadequate documentation as the most frequently cited reason claims fail. It is also consistent with the dispute-causation literature of Cakmak (2022), Silva et al. (2024) and Mirzaee et al. (2024), each of which highlights claim quality as a proximal driver of dispute formation.

What this study contributes, however, is the observation that claim quality, even when high, does not by itself guarantee a non-adversarial outcome in the Bangladeshi public construction setting. Two further conditions must hold. The first is the receptiveness of the institutional environment, particularly the speed and predictability of the public-sector approval chain that runs from the engineer, through the project director, to the secretariat, and ultimately to the cabinet committees for procurement and economic affairs. The second is the cultural and behavioural discipline of communication on the project,

especially the readiness of both parties to commit positions and disagreements to writing during, rather than after, the disputed event.

The interplay of these three elements (claim quality, institutional environment and communication discipline) was most clearly expressed by Int02, senior consultant and arbitration witness, who, in hindsight, explained why technically good claims can sometimes lead to disputes:

> *"A perfectly prepared claim can still be killed by a slow approval chain. And a moderately prepared claim can survive a quick one. The variable that explains the difference is rarely the contractor's file. It is the response time of the system that has to decide on it."*
>
> *— Int02, Senior Consultant*

This observation has direct implications for the Chapter 2 conceptual framework, which posited a five-component analytical chain running from public construction conditions, through EOT claim management quality, through claim-handling outcomes, to dispute avoidance or escalation and finally to project delivery outcomes. The empirical evidence validates the chain as a whole but shows that the relationship between claim quality and dispute avoidance is not deterministic; rather, it is moderated by the institutional and communicative environment within which the claim is processed. This refinement places the present study in conversation with the dispute-causation networks proposed by Wang et al. (2024) and Mirzaee et al. (2024), neither of which captures, in this form, the moderating role of governance speed.

5.2.2 EOT Quality and Project Delivery: A More Direct Relationship

The picture on project delivery is more linear than the picture on dispute avoidance, where it is conditional. Participants from all four delivery contexts (roads, education, power and public–private partnerships) identified tangible and sometimes measurable delivery outcomes arising from poor EOT administration. When there was no notice, or when notice was given but records were inadequate, the usual pattern was for contractors to be charged liquidated damages, lose bonds, and experience cash flow problems, for consultants and clients to delay decision-making and/or reject claims because of

procedural issues, and for project closeout, audit and disbursement to be delayed—often for years. In the power sector, the impact was manifested in deferred capacity payments of tens of millions of dollars; in education, lost teaching time and access for students; and in the road sector, stalled audit and final payment cycles.

The delivery consequences are related to the literature on construction performance and success in public sector projects as summarised by Tabish and Jha (2011), Osei-Asibey et al. (2025) and the Bangladesh specific literature by Hoque et al. (2023), Nafe Assafi et al. (2024) and Sourav et al. (2025). The present study contributes a technically-oriented documentation process account, based on practitioner testimony, that explains how the technical quality of EOT documentation cascades into specific, sectoral specific delivery losses. There is more to it than just poor claims causing project delays, poor claims slow administration settlement and disbursements even if a formal dispute is not raised.

5.2.3 The Escalation Pathway as the Bridge Between the Two Answers

These two strands of the answer are linked together by the five-step escalation pathway that Chapter 4 discussed: a missed notice, thin records, a late and aggregated global claim, a defensive rejection or indefinite deferral, and contractor exposure to liquidated damages and the loss of trust, leading to formal dispute. Eight of nine participants were able to explain all five steps without significant prompting; the underlying logic was captured by the senior consultant in one sentence:

> *"The painful truth is that most disputes are lost or won on the project, not in the arbitration room."*
>
> *— Int02, Senior Consultant*

The pathway's importance is two-fold. First, it finds that disputes arise earlier in the project life cycle than much of the literature suggests, and that, as a result, retrospective research on dispute-resolution that starts to analysed disputes once a notice of claim or notice of dispute has been issued may underestimate the impact of administrative

practice on the months prior to the notice. Second, it offers one mechanism that links the claim-quality variable to both downstream outcomes—the same pathway that leads to a dispute is the one that leads even if no dispute is filed to the delivery losses described in section 5.2.2. The escalation pathway is then used as the link between the two components of the answer.

5.3 Theoretical Implications and Contributions to Knowledge

Based on the literature search conducted in chapter 2, it is found that there are three main gaps in the literature on EOT claims and construction disputes. First, the integrative gap, which refers to the literature's treatment of delay, claim management and dispute causation as three distinct sub-fields rather than as an integrated process. Secondly, the contextual gap; the relative under-specification of the legal and administrative context in Bangladesh compared to the more well-documented contexts of Malaysia, the United Kingdom, the United States and the Gulf states. Third the transferability gap: the unconditionally transfer of frameworks (FIDIC, Society of Construction Law protocols, lean approaches) that assume administrative capacity which is not always found in public projects in Bangladesh. The present study fills each of the above gaps and contributes in five unique ways.

5.3.1 Empirical Validation of the Integrative Analytical Framework

The five-component framework proposed in section 2.6 (running from public construction conditions, through EOT management quality, through claim-handling outcomes, to dispute avoidance or escalation, to project delivery) is validated by the interview data in its general structure but refined in its causal logic. The data confirm that each component is empirically distinguishable, that the components are causally connected and that the chain provides a more parsimonious account of practitioner experience than competing single-variable models. The refinement, as discussed in section 5.2.1, is that the link between claim-handling outcomes and dispute avoidance is moderated by institutional

speed and communicative practice rather than being deterministic. In this respect the study contributes both empirical support for, and a meaningful refinement of, the integrative analytical orientation advocated by Ali et al. (2024) and the process-oriented approach of Cevikbas et al. (2024).

5.3.2 The Five-Step Escalation Pathway as a Novel Mechanism

The escalation pathway described in section 4.4.1 and section 5.2.3 is a new contribution, as evidenced by the Chapter 2 review. The dispute-causing literature such as Tariq and Shujaa Safdar Gardezi (2023), Mirzaee et al. (2024) and Wang et al (2024) pinpoints variables that influence the occurrence of a dispute and predicts the outcome of a dispute based on variables at the project level, but it is silent on the sequential mechanism between the administrative routine on site and the formation of a formal dispute. This pathway is a mechanism-oriented pathway, meaning that it is a set of discrete decisions and omissions that in combination and in sequence turn a delay event into a dispute. The mechanism can in principle be quantitatively tested against the statistics of disputes at the project level, which is explored again in section 5.6.

5.3.3 The Cultural-Evidentiary Paradox in Communication Practice

A second novel contribution, as outlined in Chapter 4, is the identification of the cultural-evidentiary paradox: that the use of written communication is both the evidentiary basis of EOT claims, required by the clause and strengthened by case law, and yet culturally avoided in Bangladeshi project practice for being face-threatening, adversarial and hierarchical inappropriate. The contractor director of operations (Int06) explained that the teams always take the clients' word over a written instruction and this is why the absence of a contemporaneous record leaves their EOT claims only partially technically defensible. The paradox is one that can be found in the broader body of literature on construction communication (Amoah and Nkosazana, 2023; Silva et al., 2025), but one that has not been specifically stated in the context of Bangladesh. The contribution here is not just

descriptive, however, but contextual, meaning that it is an obstacle to the regular use of the internationally accepted record-keeping practice, which is culturally specific.

5.3.4 Specifying the Bangladesh Institutional Environment

The third contribution addresses the contextual gap identified in Chapter 2. The data offer a granular account of the multi-layered approval chain through which EOT decisions on Bangladeshi public projects must pass. The chain typically extends from the engineer or consultant, through the project director, to the relevant divisional officer, to the secretary of the line ministry, and, for substantial extensions, to the Cabinet Committee on Government Purchase (CCGP) or the Executive Committee of the National Economic Council (ECNEC). Participants described the cumulative delay introduced by this chain as the single most important determinant of EOT outcomes (Int02), exceeding in influence either the technical quality of the underlying claim or the cooperative posture of the parties. This specification of the institutional environment, including the contrast between donor-funded FIDIC projects, on which the chain is partly bypassed by independent engineer decisions, and Public Procurement Rules (PPR) projects, on which the full chain applies, fills a gap in the Bangladesh-specific literature represented by Hoque et al. (2023), Nafe Assafi et al. (2023, 2024) and Sourav et al. (2025), none of which has previously articulated the approval chain as the central explanatory variable for EOT outcomes.

5.3.5 The Limits of Contextual Transferability

The fifth contribution is about the transferability gap. The data show that there are a number of frameworks available that were created for jurisdictions where contract administration is well established, and where it is possible to arrive at interim decisions in a timely manner that are considered binding, such as the FIDIC Red Book mechanism of making decisions by independent engineer, the Survey of Jagannathan et al. (2025) about the Society of Construction Law Delay and Disruption Protocol and the Survey of

Silva et al. (2025) on lean dispute-avoidance toolkits. In the public sector in Bangladesh, the information indicates, such decisions are often postponed, challenged or overturned by the approval process mentioned above. The point is not that international frameworks are not applicable, but that their direct importation is likely to result in disappointment. Transferability is preconditioned by contextual adaptation, which means that any protocol that is imported must be explicitly related to measures to protect the independence of the consultants and to reduce the time for approvals. This contribution enhances Huque's (2021) cautions remarks and corroborates with the evolving literature in the field of procurement in developing countries as expressed by Osei-Asibey et al. (2025).

5.4 Practical Implications and Recommendations

The findings of the study translate into a coherent set of practical recommendations, which are organised below by the four principal stakeholder groups in public construction in Bangladesh: contractors, consultants, public clients and policy makers. The recommendations are presented at the level of practice change rather than at the level of detailed procedure, on the understanding that procedural detail must in any case be adapted to the contracting arrangements and capacities of individual organisations.

5.4.1 Recommendations for Contractors

Contractors face the most direct delivery and financial consequences of weak EOT administration, and most of the corrective levers are within their control. The first recommendation is the disciplined issuance of written notice within the contractual time bar, regardless of the apparent triviality of the event or the perceived strength of the relationship with the engineer or client. Several participants reported that contractors routinely refrain from issuing notice in the early stages of a project for fear of damaging the working relationship; the data suggest that this reluctance is almost always retrospectively regretted. The second recommendation is the institution of contemporaneous daily diaries, weekly delay logs and monthly schedule updates as standard site routines,

rather than as exceptional measures activated only when a claim is anticipated. The third recommendation is the maintenance of a Primavera (or equivalent) baseline programme, agreed with the engineer at the outset of the project, against which subsequent windows analysis can be performed; the absence of an agreed baseline was identified by several participants, notably Int03 and Int06, as the single most common technical weakness of contractor claims. The fourth recommendation is investment in a dedicated claims function within the contractor's organisation, staffed by personnel trained in delay analysis methods of the kind surveyed by Arditi and Pattanakitchamroon (2006), Kao and Yang (2009) and Vo et al. (2025), so that claims are prepared at the technical level required for the dispute that may eventually follow.

5.4.2 Recommendations for Consultants

Consultants occupy an institutionally fragile position in Bangladeshi public construction, dependent on the same client for current and future appointments. The data suggest that the consequence is a structural reluctance to issue determinations adverse to the client, even when the technical merits of the contractor's claim are strong. Two recommendations follow. The first is the institutional protection of consultant independence through explicit contractual safeguards, including provisions for the engineer's decisions to be issued in writing within fixed periods, for those decisions to be subject only to formal dispute review (not to administrative override) and for the consultant's remuneration to be unaffected by the substantive direction of those decisions. The second recommendation is the routine use of interim determinations on substantial EOT claims, in preference to the deferral of all decisions to project completion; the FIDIC engineer experience reported by participants demonstrates that interim determinations are feasible in the Bangladeshi context and materially reduce both the rate of escalation and the eventual scale of disputed sums.

A third, complementary recommendation is the institutionalisation of weekly claim-coordination meetings between contractor, consultant and client representatives, closed and signed. The closed progress meeting was identified by every participant as the single

highest-leverage routine for preventing disputes, on the grounds that it forces positions to be stated and recorded contemporaneously and creates a documentary trail that subsequent claim analysis can rely on. This recommendation is consistent with the lean dispute-avoidance literature surveyed by Jagannathan et al. (2025) and with the pre-contract toolkit developed by Silva et al. (2025), although it represents a more modest and culturally feasible adaptation than either.

5.4.3 Recommendations for Public Clients and Implementing Agencies

The most consequential opportunities for improvement, on the evidence of this study, lie at the public-client level. The first recommendation is the imposition of statutory or administrative service-level standards on each step of the EOT approval chain, with the engineer required to issue an initial determination within a fixed number of days of receipt of a claim, the project director required to forward it within a similarly fixed period, and so forth, up to and including the cabinet committees for the largest extensions. The data indicate that the indeterminate length of these intervals, rather than any single excessive interval, is the principal driver of contractor frustration and downstream dispute. The second recommendation is the empowerment of project-level Engineers to make interim determinations of EOT claims when under a certain value threshold (but not required to refer them up to higher administrative levels). This would substantially shorten the approval process for most claims, where ministerial/cabinet involvement is not really warranted.

The third recommendation is the institution of a centralised digital claims register, maintained at the implementing-agency or ministry level, in which the status of each EOT claim, including the date of receipt, the steps completed and the decision date, is recorded and visible to authorised users. A register of this kind would address two distinct weaknesses identified by participants: the loss of institutional memory when project teams change, and the absence of a basis on which to identify and benchmark approval-chain bottlenecks. The fourth recommendation is the explicit reform of the Revised Development Project Proposal (RDPP) and ECNEC pathways through which substantial cost

or time extensions are presently routed, with a view to separating routine EOT decisions, which do not require national-level economic review, from the genuinely strategic extensions that do. Participants suggested that a large proportion of presently routed RDPP/ECNEC submissions could be handled at the ministry level under properly drafted delegated authority.

5.4.4 Recommendations for Policy Makers and the Regulatory Framework

At the policy level, four recommendations emerge from the data. The first is the standardisation of EOT clauses across the public-procurement contract suite issued under the Public Procurement Rules 2008, in such a way that notice provisions, particulars requirements, time bars and the methodology for delay analysis are consistent across road, building, education, power and PPP contracts. The present heterogeneity, in which different agencies use different clauses with different time bars and evidentiary requirements, was identified by participants as a source of avoidable confusion and procedural disputes. The second recommendation is the mandatory inclusion in all public construction contracts above a defined threshold of a requirement for a Primavera-format baseline programme, agreed by both parties within a fixed period after contract award, as a precondition for the contractor's entitlement to subsequent EOT. This would address the most common technical weakness of contractor claims, namely the absence of an agreed baseline against which subsequent analysis can be conducted.

The third recommendation is to set up a national claims-management training programme, jointly funded by the Central Procurement Technical Unit and the major implementing agencies, and available to contractor and consultant staff and to public-client staff. The data indicate that there is not a uniform capacity for delay analysis on all three sides, the costs of upskilling are relatively low, and the lack of common language and method is a cause of conflict. The fourth recommendation is to include in the Public Procurement Act and Rules statutory time limits for each step of the EOT approval chain and to provide default consequences (e.g., deemed approval) to steps not completed within the prescribed time limits, of the type described in section 5.4.3. This is the more

ambitious of the reforms, and will take careful drafting to avoid perverse incentives, but it directly targets what the data point to as the single most important driver of EOT results.

5.5 Limitations of the Study

The findings reported above are subject to a number of limitations, which are noted here in the interest of transparency and to inform the interpretation of the conclusions drawn. First, the empirical evidence rests on nine semi-structured interviews. While the participants were unusually senior and collectively represent extensive coverage of the principal delivery sectors and stakeholder roles, the sample is small in absolute terms and does not permit statistical generalisation. The study therefore offers interpretive transferability, in the sense developed by Lincoln and Guba (1985), rather than statistical generalisability; readers must judge the applicability of the findings to their own contexts on the basis of the thick description provided.

Second, all interviews were conducted online, via Microsoft Teams, Zoom or, in one case, WhatsApp video. While the online format permitted access to senior practitioners who would have been logistically inaccessible for in-person interviews, it also constrained the rapport-building, the ability to observe non-verbal cues and the opportunity to extend conversations informally beyond the scheduled window. In addition, one of the originally targeted participant profiles, a senior arbitrator or legal expert specialising in construction disputes, could not be recruited within the available time frame, with the consequence that the legal-procedural perspective on EOT outcomes is represented only indirectly through the testimony of the senior consultant and the FIDIC engineer.

Third, the researcher is a Bangladeshi national with prior professional exposure to the public construction sector in Bangladesh. This positionality offered substantial benefits in terms of access, rapport and contextual understanding, but it also creates a risk of confirmation bias. The risk was mitigated by the maintenance of a reflexive research journal, by member checking with three participants and by the deliberate inclusion of

perspectives, notably from the contractor director of operations and the active project director, that might be expected to challenge a researcher's prior assumptions, but it cannot be eliminated.

Fourth, the study relies on practitioner recollection rather than on the contemporaneous documentary record. EOT claim files, engineer determinations, ministerial decisions and ECNEC minutes were not analysed. This is a substantive limitation, particularly in respect of the escalation pathway proposed in section 5.2.3, which would benefit from documentary triangulation. Practitioner recollection is well suited to identifying mechanisms and articulating tacit knowledge, but it is less well suited to establishing the frequency with which particular events occur or the magnitude of their effects.

Fifth, the study is qualitative throughout. Neither the escalation pathway nor the relative weight of the four themes has been quantitatively validated. A quantitative follow-up study, drawing on project-level data from the principal implementing agencies, would be required to test propositions that are presently advanced on the basis of qualitative evidence alone.

Sixth, while the participants covered roads, buildings, education, power and PPP infrastructure, certain sectors of growing importance to Bangladeshi public construction, including transport mega-projects, water and sanitation and climate-resilient infrastructure, were not represented in the sample. The findings may apply to those sectors with adaptations that the present study cannot specify in advance. Finally, the analysis is anchored in the regulatory environment as it stood at the time of fieldwork; subsequent changes to the Public Procurement Rules, to FIDIC editions or to the contract suites of the principal implementing agencies may modify the applicability of specific recommendations.

5.6 Recommendations for Future Research

The above limitations indicate a research program. Six possibilities are proposed.

The first is a quantitative validation of the five-step escalation pathway through the systematic analysis of project-level dispute statistics drawn from the principal implementing agencies. A study of this kind would test the proposition that the pathway accounts for a substantial share of formal disputes and would estimate the relative weight of each step. The data infrastructure required is considerable but is, in principle, available within the major public-sector clients.

The second is a longitudinal pilot study of the reform package proposed in section 5.4. A controlled introduction of statutory approval-step time limits, mandatory baseline programmes and a centralised digital claims register on a selected portfolio of projects within, for example, the Roads and Highways Department or the Education Engineering Department would permit causal estimation of the effects of the reform package on dispute incidence and project delivery outcomes. Such a study would also clarify the implementation challenges that the present, predominantly normative, analysis cannot fully anticipate.

The third is a comparative study with other South Asian and developing-country public construction systems. The institutional features identified here as decisive for EOT outcomes in Bangladesh, including a multi-layered approval chain and structurally fragile consultant independence, are not unique to Bangladesh. A comparative analysis with, for example, the Pakistani, Sri Lankan, Nepali or Tanzanian public sectors would illuminate which findings are nationally specific and which generalise across developing-country procurement systems.

The fourth is a document-based study of historical EOT claim files, engineer determinations and ministerial decisions, designed to triangulate the practitioner accounts presented here against the contemporaneous record. A study of this kind would address the methodological limitation identified in section 5.5 and would also permit quantitative analysis of approval-chain duration in a way that interview data cannot.

The fifth is a study of the safeguards for consultant independence for the various procurement modalities, such as donor-funded FIDIC contracts, public–private partnerships and conventional PPR contracts. The evidence collected here indicate that there is a

systematic difference in consultant independence depending on procurement mode, and that this difference has a causal effect on EOT outcomes, in ways that are not fully explored in the present study.

The sixth is a sector-specific deep dive on PPP EOT decision lag. Participants associated with the PPP sector reported that EOT decisions on PPP projects are subject to a distinctive set of approvals running through the PPP Authority and the relevant line ministry, and that the resulting decision lag has substantial consequences for the financial viability of the special-purpose vehicles involved. The PPP sector is small but growing, and the EOT regime appropriate to PPP procurement is under-theorised even in the wider literature.

5.7 Conclusion

The starting point for this thesis was the assumption that disputes on Bangladeshi public construction projects are commonplace and that EOT claims are perceived as a routine process, not as a management tool and that the technical knowledge and sophistication of international claim management practice has not, overall, improved the situation in the Bangladeshi public sector. The empirical investigation reported in Chapters 3 and 4 and discussed in the present chapter is more optimistic.

The quality of EOT claim management matters. It does not, on its own, prevent disputes, and it does not, on its own, guarantee timely delivery; but its absence reliably produces both. The technical practices that constitute good EOT management, timely notice, contemporaneous records, defensible delay analysis and closed communication, are well understood, internationally well documented and locally feasible. What is required for their consistent application in the Bangladeshi public sector is not principally technological investment, nor an additional layer of international consultancy advice, but a set of governance adjustments: the protection of consultant independence, the compression and standardisation of the EOT approval chain, the standardisation of EOT clauses across

the public procurement contract suite and a modest but sustained investment in training. As one of the retired Chief Engineers put it during interview, the problem is not that the system lacks knowledge of what to do; the problem is that the system lacks the institutional discipline to do it.

The wider public- value lesson is that while there is an important place for improving the management of EOT claims, it is not the technical concern of a niche group of construction lawyers and quantity surveyors. They are an instrument of public expenditure efficiency. Every dispute avoided is a management time and legal cost saved that can be used toward delivery. A tonne of asphalt laid earlier, a classroom filled earlier, a megawatt delivered on schedule is a compressed approval cycle. The benefits of disciplined EOT administration are not "marginal," but in aggregate form a significant benefit in a context of limited public resources and significant infrastructure ambitions. In the present study, the intention has been to describe the barriers to this discipline and to find the levers by which it can be realised. It is made available with the hope that it will be helpful to those who, both within the offices of contractors and consultancy firms, in the public-sector agencies and policy units are tasked with the job of improving Bangladeshi public construction work.

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Appendix A - Interview Question Guide for Participants

Thesis title

Extension of Time Claim Management and Dispute Avoidance in Public Construction Projects in Bangladesh: A Literature Review and Interview Study

Purpose of the interview

This interview aims to collect professional insights into how extension of time claims are managed in Bangladeshi public construction projects. The discussion will explore practical challenges, documentation, delay analysis, communication, decision-making, dispute risks, and possible improvements.

The interview is not intended to judge any individual, organisation, or project. You do not need to disclose confidential project names, financial information, or sensitive organisational details.

Key term

In this interview, **extension of time claim**, or **EOT claim**, means a formal request for additional time to complete a construction project when delay occurs due to reasons that may be excusable under the contract.

Interview questions

A. Background and experience

1. Could you briefly describe your professional role and your experience with public construction projects in Bangladesh?
2. What types of public construction projects have you been involved in?
3. How have you been involved in extension of time claims?
   Examples may include preparing, reviewing, approving, advising, or managing delay-related claims.

B. Understanding EOT claims and their purpose

4. In your view, what is the main purpose of an extension of time claim in a public construction project?
5. Based on your experience, what does a well-managed EOT claim process look like?

6. What are the common signs that an EOT claim has not been managed properly?

C. EOT claim process and challenges

7. Could you describe the usual steps followed when an EOT claim is prepared, submitted, reviewed, and decided in a Bangladeshi public construction project?
8. What procedural problems commonly affect the handling of EOT claims?
   For example, notice requirements, submission format, approval steps, contract clauses, or submission deadlines.
9. What managerial problems commonly affect the handling of EOT claims?
   For example, coordination problems, weak monitoring, lack of records, slow decisions, or unclear responsibility.
10. How do public-sector approval procedures affect EOT claim decisions?
11. How do the client, contractor, consultant, and approving authority influence the EOT claim process?

D. Documentation, delay analysis, and decision-making

12. How does the quality of project records and documentation affect EOT claim decisions?
13. How does delay analysis affect the acceptance or rejection of an EOT claim?
14. What usually happens when project parties disagree about the cause of delay or entitlement to EOT?

E. Dispute avoidance and project delivery

15. In your experience, how can the way an EOT claim is handled help prevent disputes?
16. How can poor EOT claim handling increase the risk of disputes?
17. How do late or unresolved EOT decisions affect project delivery?
18. How does communication between project parties affect whether an EOT issue is resolved or becomes a dispute?

F. Improvement opportunities

19. What practical changes could improve EOT claim management in Bangladeshi public construction projects?
20. What should contractors do to prepare stronger and more credible EOT claims?
21. What should consultants do to review EOT claims more effectively and fairly?
22. What should public clients or government agencies do to improve EOT claim decision-making?
23. What training, tools, or guidelines would help improve EOT claim management in Bangladesh?
24. Based on your experience, what is the most important change needed to reduce EOT-related disputes in public construction projects?

Closing question

25. Is there anything else you would like to add about EOT claim management, dispute avoidance, or project delivery in Bangladeshi public construction projects?