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Impact Of Liquidated Damages Management on Construction Claims in the National Capital Region

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Abstract- ***This study examined the perceived effects and practical influence of liquidated damages (LD) management on construction claims in the National Capital Region. A descriptive mixed-method design with greater qualitative emphasis was used. Of 50 qualified construction professionals invited, 41 completed the survey and 16 submitted written interview responses. Survey data were analyzed using descriptive statistics, while the written responses were coded into seven themes. Findings showed that respondents generally understood LDs, but clause clarity and shared stakeholder understanding remained uneven. Common issues involved unclear completion requirements, disputed delay responsibility, pending Extension of Time requests, and incomplete records. LDs encouraged recovery efforts and closer monitoring, but uncontrolled acceleration could increase cost, defects, rework, and safety exposure. Transparent administration supported accountability, while premature or one-sided enforcement could weaken stakeholder relationships. The study concluded that effective LD management requires clear contract provisions, timely Extension of Time evaluation, complete documentation, proper delay assessment, and fair risk allocation. It recommends a ten-stage practical process from contract drafting and project alignment through LD assessment, negotiation, and project closeout.***

Keywords: liquidated damages management, construction claims, extension of time, delay analysis, contract management

I. THE PROBLEM AND ITS SETTING

1.1 Introduction

Liquidated damages are a common part of construction contracts. They set an agreed amount that may be charged when a contractor fails to complete the work on time, subject to the contract conditions (Haidar, 2021; Abdel Aziz & Muiruri, 2023). As construction projects become more complex, the proper management of liquidated damages becomes important to owners, contractors, consultants, project managers, and other project stakeholders.

In the construction industry of the National Capital Region (NCR), timely completion is an important measure of project performance. Liquidated damages are intended to discourage avoidable delay and provide the owner with a clear contractual remedy. However, disputes may arise over clause clarity, enforceability, calculation, completion requirements, delay responsibility, Extension of Time entitlement, documentation, and fairness (Abdel Aziz & Muiruri, 2023; Narayan et al., 2024).

Liquidated damages management involves more than stating a daily rate in the contract. It also involves defining the required completion date, evaluating Extension of Time requests, identifying the party responsible for the delay, maintaining supporting records, and determining the period that may properly be charged to the contractor (Haidar, 2021; Azzam et al., 2025). These matters may influence the claims process, contractor behavior, project outcomes, stakeholder relationships, and risk allocation (Narayan et al., 2024; Setijanto et al., 2026).

This study examines the perceived effects and practical influence of liquidated damages management based on the assessments and professional experiences of qualified construction professionals with experience in projects in the National Capital Region. It combines survey results with written interview responses to identify common issues and useful practices in liquidated damages and claims management.

The study specifically examines the profile of the respondents; clause clarity, enforceability, and practical application; the claims process and project outcomes; and stakeholder relationships and risk allocation. It aims to provide practical recommendations for clearer contract drafting, better documentation, timely Extension of Time evaluation,

fair allocation of delay responsibility, and more transparent claims administration.

1.2 Theoretical Framework

The study is guided by two related perspectives: liquidated damages and contractual clarity, and claims management and risk allocation. These perspectives explain how liquidated damages provisions are understood and applied and how their management may be connected with construction claims, project outcomes, and stakeholder relationships.

Liquidated Damages and Contractual Clarity. Liquidated damages are pre-agreed amounts stated in construction contracts to provide a remedy for delayed completion, subject to the contract conditions. Their proper application depends on the clarity of the clause and the supporting contract provisions. A complete liquidated damages clause should clearly state the required completion point, the rate and basis of computation, the maximum amount, the period when liquidated damages begin and end, the treatment of excusable delays, and the Extension of Time procedure. These requirements are consistent with the construction-contract discussions of Abdel Aziz and Muiruri (2023) and Azzam et al. (2025).

Contractual clarity is important because a clearly stated daily rate may still lead to disputes when substantial completion, final completion, testing, turnover, or delay responsibility is not properly defined. This perspective supports the study's examination of clause clarity, enforceability, and practical application.

Claims Management and Risk Allocation. Claims management covers the preparation, documentation, evaluation, negotiation, and resolution of claims arising from construction delays. In liquidated damages management, this includes notices, Extension of Time requests, baseline and updated schedules, instructions, approvals, reports, correspondence, delay analysis, and the final assessment of contractor-responsible delay. Haidar (2021) and Azzam et al. (2025) emphasize the importance of contract administration, records, and delay assessment in construction claims.

Risk allocation concerns the assignment of responsibility for contractor-caused, owner-caused, external, and concurrent delays. Proper claims management and fair risk allocation may support clear decisions and better project coordination. In contrast, weak documentation, delayed Extension of Time decisions, or one-sided enforcement may result in disputes and strained stakeholder relationships. This perspective supports the study's examination of the claims process and project outcomes, as well as stakeholder relationships and risk allocation.

These two perspectives guide the interpretation of the survey and written interview findings. They are used to examine the respondents' assessments and professional experiences and do not establish a statistically tested cause-and-effect relationship.

1.3 Conceptual Framework

The conceptual framework presents the main areas examined in the study. The profile of the respondents provides descriptive information concerning the professionals who participated in the study. It is not treated as a causal variable.

Liquidated damages management includes clause clarity, enforceability, and practical application, together with claims management, Extension of Time, and documentation. Construction claims and project-related outcomes include the claims process and project outcomes, as well as stakeholder relationships and risk allocation.

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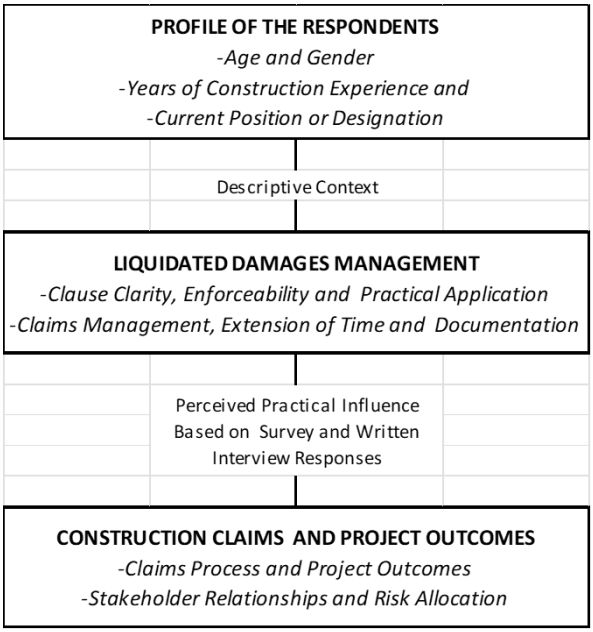

Figure 1. Conceptual Framework of Liquidated Damages Management and Construction Claims in the National Capital Region

The framework shows the areas examined in the study. The profile of the respondents provides descriptive context. The connecting line represents the perceived practical influence examined through the survey and written interview responses and does not represent a statistically tested causal relationship.

The framework reflects Research Problems 1 to 4 only. The profile of the respondents corresponds to the first research problem. Clause clarity, enforceability, and practical application correspond to the second research problem. The claims process and project outcomes correspond to the third research problem. Stakeholder relationships and risk allocation correspond to the fourth research problem. The fifth research problem uses the integrated findings as the basis for the proposed practical liquidated damages management process.

1.4 Statement of the Problem

Timely project completion remains an important indicator of construction performance. Delay may affect project cost, contractual obligations, operations, and stakeholder satisfaction. Liquidated damages are commonly included in construction contracts to provide an agreed financial remedy for delayed completion and to establish the contractor's possible exposure when delay is properly attributable to the contractor.

Although liquidated damages may provide contractual certainty, their practical application may involve questions concerning clause clarity, completion requirements, computation, enforceability, and fairness. A stated daily rate alone may not resolve uncertainty concerning substantial completion, final completion, testing, turnover, Extension of Time, excusable delays, owner-caused delays, or concurrent delay.

Liquidated damages management may also influence the claims process and project outcomes. Notices, schedules, Extension of Time submissions, instructions, approvals, reports, and supporting records may determine whether a claim is accepted, reduced, disputed, or denied. The possible imposition of liquidated damages may influence contractor behavior, schedule recovery, cost, quality, and safety. The implementation of liquidated damages may further influence stakeholder relationships and risk allocation. Fair and transparent administration may support accountability and early resolution, while unclear or premature enforcement may create friction, defensive communication, withheld payments, and formal disputes. These issues support the need to examine the actual assessments and experiences of qualified construction professionals in the National Capital Region.

This study therefore examines the perceived effects and practical influence of liquidated damages management on construction claims in the National Capital Region. Specifically, it seeks to answer the following questions:

1. What is the profile of the respondents in terms of:
a. age;
b. gender;
c. years of construction experience; and
d. current position or designation?
2. How do the respondents assess liquidated damages clauses in terms of clause clarity, enforceability, and practical application?
3. What are the perceived effects of liquidated damages management on the construction claims process and project outcomes?

4. What are the perceived implications of liquidated damages implementation for stakeholder relationships and risk allocation?
5. What practical liquidated damages management process may be proposed based on the findings of the study?

Through these questions, the study aims to provide findings that may support clearer liquidated damages provisions, stronger Extension of Time and documentation procedures, fairer delay allocation, and more transparent claims administration, and the development of a practical liquidated damages management process.

1.5 Hypothesis

The study was guided by the working hypothesis that clear, complete, and properly administered liquidated damages provisions are associated with clearer claims handling, improved schedule discipline, and more balanced allocation of delay responsibility. Liquidated damages management was also expected to influence contractor behavior, project recovery measures, communication, and stakeholder accountability.

Conversely, unclear completion requirements, disputed delay responsibility, delayed Extension of Time decisions, weak documentation, and premature or one-sided enforcement were expected to be associated with more construction claims, acceleration-related cost, quality and safety risks, and strained stakeholder relationships.

This working hypothesis guided the preparation and interpretation of the survey and written interview questions. However, the study used descriptive statistics and thematic analysis and did not conduct an inferential statistical hypothesis test. The findings therefore do not formally prove causation or statistically accept or reject the working hypothesis. They describe the assessments, recurring experiences, and perceived practical influence reported by the participating qualified construction professionals.

1.6 Scope and Limitations of the Study

This study examined the perceived effects and practical influence of liquidated damages management on construction claims in the National Capital Region. It covered the profile of the respondents; clause clarity, enforceability, and practical application; the claims process and project outcomes; and stakeholder relationships and risk allocation.

The study addressed liquidated damages provisions, completion requirements, delay responsibility, Extension of Time administration, notice requirements, documentation, schedule control, claims evaluation, contractor behavior, acceleration, financial implications, quality and safety considerations, stakeholder relationships, and allocation of owner-caused, contractor-caused, external, and concurrent delays.

The participants were qualified construction professionals who had worked on, were working on, or had experience in construction projects in the National Capital Region. No minimum number of years of construction experience was imposed. To qualify, a participant was required to have knowledge or experience concerning liquidated damages and involvement in its negotiation, operations, administration, or implementation. The participating professionals included engineers, project managers, owners, architects, a contracts manager, and other practitioners involved in construction and project delivery.

The original research proposal targeted 10 carefully selected experts. During the proposal defense, the panel advised that 10 respondents were insufficient for the intended study. After consultation with the adviser, the target was expanded to 50 qualified and experienced construction professionals who could provide useful information concerning construction contracts, claims, delays, project management, or construction management. This target was an adviser-approved purposive target and was not obtained through a probability-based sample-size formula.

The participants were recruited through professional contacts, referrals, social-media postings, industry groups, and combinations of these approaches. Data gathering was conducted from February 2025 to June 2026. Fifty professionals were invited to participate. Forty-one completed the structured survey, resulting in a survey response rate of 82.00%. Sixteen of the 41 survey respondents also completed the written semi-structured interview guide containing 18 open-ended questions. Written interview participation represented

39.02% of the survey respondents and 32.00% of all invited professionals.

The survey produced descriptive numerical data concerning the profile and assessments of the 41 survey respondents. The written interview responses provided explanations, examples, and professional observations concerning liquidated damages management. Although all participants had NCR construction-project experience, some written interview answers referred to wider professional experience when explaining a point. Such responses were treated as supporting professional context and were not used to expand the geographic scope of the study beyond the NCR.

The study used purposive sampling. The 50 invited professionals were not treated as the total population of construction professionals in the NCR, and the 41 survey respondents were not selected through random sampling. The findings are therefore descriptive of the participating qualified construction professionals and should not be interpreted as statistically representative of all construction professionals in the NCR.

The depth of the written interview responses varied among participants. Some respondents provided detailed examples of liquidated damages claims or enforcement, while others answered from project observation, general contract knowledge, or limited direct experience. Answers stating that the respondent had no direct experience, no applicable example, or no involvement in a particular process were retained as context but were not treated as direct evidence of actual liquidated damages enforcement or legal proceedings.

The survey and written interview data were self-reported. The responses may have been influenced by the participants' memory, organizational role, contractual position, project experience, and personal interpretation. The study did not independently review confidential construction contracts, complete claim files, legal pleadings, settlement agreements, or court and arbitration records associated with the examples mentioned by the participants.

No live recorded interview, focus-group discussion, or speech-to-text transcription was conducted. The 16 participants submitted written responses through Microsoft Word or PDF. The original wording, grammar, spelling, capitalization, and sentence structure of these written responses were retained in the appendices, subject only to formatting and removal of identifying information.

The quantitative analysis was limited to frequency, percentage, weighted mean, composite mean, verbal interpretation, and ranking. No inferential test of association, difference, prediction, or causation was conducted. The word "impact" in the study title therefore refers to perceived effects and practical influence based on the assessments and professional experiences of the participating qualified construction professionals.

The written interview responses were analyzed through open coding, grouping of similar codes into categories, consolidation into seven recurring themes, mapping to Research Problems 2 to 4, and integration with the survey findings. No formal saturation test was conducted. The coding process produced seven recurring themes that addressed the qualitative research problems, and no major additional theme was identified during the final consolidation.

Despite these limitations, the combination of 41 completed surveys and 16 written interview responses provided useful descriptive evidence concerning how liquidated damages clauses are understood and applied, how liquidated damages management is connected with construction claims and project outcomes, and how implementation may influence stakeholder relationships and risk allocation.

1.7 Significance of the Study

This study may contribute to the understanding and practical administration of liquidated damages in construction projects in the National Capital Region. Its significance is based on the combined survey assessments and written professional experiences of qualified construction professionals.

Owners and Clients. The study may assist owners and clients in preparing clearer liquidated damages provisions and establishing transparent procedures for evaluating contractor delay. The findings may support clearer definitions of completion, timely decisions on

Extension of Time requests, proper recognition of owner-caused and external delays, and computation of liquidated damages only after delay responsibility has been evaluated.

Contractors and Subcontractors. The study may help contractors and subcontractors understand the financial and operational implications of liquidated damages management. It may emphasize the importance of timely notices, Extension of Time submissions, baseline and updated schedules, supporting records, mitigation measures, and careful management of acceleration. It may also help contractors recognize that a valid reason for delay should be supported by timely and complete documentation.

Consultants, Project Managers, and Contract Practitioners. The findings may provide practical guidance for consultants, project managers, planners, quantity surveyors, contracts managers, claims practitioners, and other professionals responsible for administering time and delay provisions. The study may support contract-alignment meetings, schedule monitoring, delay-event recording, Extension of Time evaluation, negotiation, and fair liquidated damages assessment.

Designers and Technical Professionals. Architects, engineers, and designers may benefit from the study's discussion of the effect of information, approvals, design changes, instructions, and coordination on project delay. Their timely actions and records may be important when determining whether delay is attributable to the contractor, the owner, the consultant, an external event, or concurrent causes.

Construction Industry and Government Institutions. The study may provide locally based descriptive evidence that can support industry training, model procedures, contract-administration guidance, and professional discussion concerning liquidated damages and Extension of Time. It may also support clearer practices for documentation, schedule control, due process, and delay allocation. The study does not establish new legal standards but may identify practical areas that require better explanation and administration.

Academic Institutions and Future Researchers. The study may contribute to Philippine construction-management literature by presenting descriptive NCR-based findings and an evidence trail that connects survey assessments with seven recurring interview themes. Future studies may expand the number and distribution of participants, compare public and private projects, examine different contract forms, review actual claim and dispute records, or use inferential methods where an appropriate probability sample is available.

Overall, the study may help construction stakeholders understand that effective liquidated damages management is not limited to stating or imposing a daily financial amount. It is a continuing contract-management process involving clear drafting, shared understanding, schedule control, timely notice, Extension of Time evaluation, complete supporting records, fair delay responsibility, transparent communication, and proper claims resolution.

II. REVIEW OF LITERATURE AND STUDIES

This chapter reviews literature and studies related to liquidated damages management and construction claims. The discussion is organized thematically to support the research problems of the study. It first explains the legal nature and management purpose of liquidated damages, then examines the Philippine legal and regulatory setting, clause clarity and enforceability, Extension of Time administration, claims management, delay analysis, project outcomes, stakeholder relationships, risk allocation, and current digital practices. The chapter ends with a synthesis that identifies the research gap addressed by the study.

The reviewed sources include peer-reviewed journal articles, recent construction-management books, Philippine statutes, procurement rules, and selected Supreme Court decisions. All academic, journal, conference, technical, and industry sources used in this chapter were published from 2021 to 2026. Earlier references were retained only when they are controlling or necessary Philippine legal authorities that cannot be replaced by a recent source without losing the applicable legal basis.

The literature does not treat liquidated damages as an isolated deduction. It generally places liquidated damages within a wider contract-management process involving completion requirements, project schedules, notices, Extension of Time requests, delay responsibility, supporting records, assessment of contractor-responsible delay, and dispute resolution. This wider approach is consistent with the present study, which uses the term liquidated damages management to refer to the practical administration of these connected activities.

2.1 Nature and Purpose of Liquidated Damages

Liquidated damages are amounts agreed by contracting parties before a breach occurs. In construction contracts, they are commonly connected with failure to complete the work within the contract period, including approved time extensions. Their main practical purpose is to establish a predictable financial consequence for contractor-responsible delay without requiring the owner to calculate and prove every item of actual loss after completion. Haidar (2021) explains that agreed damages must be understood together with the contract obligations, notice provisions, time-control procedures, and remedies that support their administration.

Recent construction research continues to describe liquidated damages as both a monetary remedy and a project-control mechanism. Hoa et al. (2026) distinguish liquidated damages from general damages and contractual penalties and explain that the clause is intended to approximate the loss expected from late completion. Abdel Aziz and Muiruri (2023) show that transportation agencies use liquidated damages to address costs connected with delayed availability of infrastructure, disruption to users, and extended administration. These studies indicate that the clause serves certainty, compensation, and schedule discipline, but only when its purpose and method are clearly stated.

The compensatory purpose is important because delay-related loss is often difficult to calculate at the time of contracting. An owner may face extended supervision, temporary facilities, financing costs, lost operations, loss of use, additional rent, road-user costs, or other consequences. The exact amount may depend on the project type and the time at which the delay occurs. A pre-agreed rate gives both parties an early measure of possible exposure and allows the contractor to include the risk in its tender and project controls (Abdel Aziz, 2024; Abdel Aziz & Muiruri, 2023).

Liquidated damages also strengthen the time obligation. The possibility of a daily deduction may encourage contractors to monitor the critical path, recover slippage, improve coordination, and allocate additional resources. Alshboul et al. (2022) treated liquidated damages exposure as a predictable project outcome that can be estimated from project data. Their model illustrates that the financial consequence of delay can be connected with broader project characteristics and performance indicators rather than viewed only as an end-of-project deduction.

However, the existence of a liquidated damages clause does not establish that every day beyond the original completion date is chargeable to the contractor. Azzam et al. (2025) emphasize that delay responsibility must be established through a suitable delay-analysis method and the applicable contract conditions. The period used in the computation must account for approved Extension of Time, excusable delay, owner-caused delay, and other events that affect the completion obligation. Therefore, the clause creates a possible remedy, while contract administration determines whether and to what extent the remedy becomes due.

A liquidated damages provision may also reduce transaction costs. When the rate and trigger are clear, the parties may avoid lengthy evidence on the amount of the owner's actual loss. At the same time, uncertainty can shift from the amount of damages to other questions: whether completion occurred, which milestone controls, whether the contractor was in default, and which delays were excusable. Hoa et al. (2026) note that the practical value of the remedy depends on the relationship between the legal rule and the way the clause is drafted and applied.

The literature therefore supports a management view of liquidated damages. The rate is only one element. A complete system includes the completion standard, original and revised completion dates, notice requirements, Extension of Time procedure, delay

classification, computation basis, cap, certification process, and deduction procedure. This broader understanding provides the basis for examining clause clarity, claims outcomes, project behavior, stakeholder relationships, and risk allocation in the present study.

2.2 Philippine Legal and Regulatory Framework

In the Philippines, the Civil Code provides the basic legal foundation for penalty clauses and liquidated damages. Articles 1226 to 1229 govern obligations with a penal clause, while Articles 2226 to 2228 specifically describe liquidated damages agreed by the parties in case of breach. The Civil Code allows parties to determine the amount in advance, but courts may reduce an amount that is iniquitous or unconscionable, and the agreed measure does not apply when the breach is different from the breach contemplated by the clause (Republic Act No. 386, 1949).

These provisions show that contractual freedom is important but not unlimited. The parties may agree on a daily amount, percentage, cap, and deduction method, provided that the stipulation is not contrary to law, morals, public order, or public policy. The legal rule also requires a connection between the agreed amount and the breach described in the contract. For construction projects, this makes the definition of delayed completion, default, and the applicable completion certificate important to enforceability.

Recent Philippine Supreme Court jurisprudence continues to show that liquidated damages depend on the actual contract wording and the established project facts. In Southstar Construction and Development Corporation v. Philippine Estates Corporation (2022), the Court examined a construction agreement that fixed completion dates, allowed extensions, and imposed a stated daily percentage for delay. The decision shows that liability must be connected with the contractual completion date, any granted extension, and the period of actual noncompletion.

The Southstar decision also illustrates the importance of an express default and deduction provision. Where the contract fixes the completion date and states the consequence of failure to complete, the parties and the decision maker can identify when delay begins and how the monetary consequence is applied. This supports the need to coordinate the LD clause with the completion, extension, acceptance, retention, and payment provisions of the same contract.

The completion standard may also affect entitlement. In Transcept Construction and Management Professionals, Inc. v. Aguilar (2010), the Court affirmed the use of substantial completion principles and denied liquidated damages where the work had reached the substantial-completion threshold applied by the Construction Industry Arbitration Commission. This older decision is retained because it directly addresses substantial completion in a Philippine construction contract. It is relevant to the present study because the interview findings distinguished substantial completion, final completion, testing, turnover, and punch-list completion.

Recent general jurisprudence also confirms that courts may reduce liquidated damages when the amount is iniquitous or unconscionable. In Ruby Shelter Builders and Realty Development Corporation v. Tan (2024), the Court reiterated that reasonableness depends on the purpose of the penalty, the nature of the obligation, the manner and consequences of the breach, the circumstances of the parties, and other relevant conditions. For construction contracts, this supports careful drafting of the rate, cap, computation basis, and breach covered by the clause.

For public infrastructure procurement, the current Implementing Rules and Regulations (IRR) of Republic Act No. 12009, approved by the Government Procurement Policy Board (GPPB), provide a more specific administrative framework. The rules state that when a contractor fails to complete the works within the specified duration, inclusive of duly granted extensions, the contractor may be liable for liquidated damages based on the cost of the unperformed portion for every day of delay. The rules also refer to the usability of the project and provide a maximum level at which termination may be considered (Government Procurement Policy Board [GPPB], 2025).

The reference to duly granted time extensions is significant. It confirms that the enforceable completion date is not always the original date. The procuring entity must first consider approved extensions and the usable or unperformed portion of the works. This approach is consistent with the wider

construction literature, which treats Extension of Time evaluation and completion certification as necessary steps before final liquidated damages computation (Azzam et al., 2025; Elshamy et al., 2024).

The Philippine framework therefore contains both general private-law principles and more detailed public-procurement rules. Private projects depend heavily on the contract and Civil Code, while public projects may also be governed by procurement rules, bidding documents, and agency requirements. The differences in project type and contract form support the need to examine how practicing professionals understand and administer liquidated damages rather than assuming that one uniform procedure is followed throughout the National Capital Region.

2.3 Clause Clarity, Completion Standards, and Enforceability

Contract clarity concerns whether the clause and its related provisions allow the parties to determine what is required, when liability begins, how the amount is computed, and what procedures must be followed. Abdel Aziz and Muiruri (2023) found significant differences in the articulation of liquidated damages across highway standard specifications. Their analysis grouped the differences around characterization, application periods, reference times, and implementation forms. The study demonstrates that clauses serving the same general purpose may create different administrative results because of drafting choices.

The first requirement is a clear completion obligation. Construction contracts may use terms such as substantial completion, practical completion, sectional completion, beneficial use, final completion, commissioning, testing, turnover, or acceptance. These terms are not always interchangeable. A project may be physically usable while minor work remains, or the works may be substantially complete but still unable to pass required testing. When the clause does not identify the controlling event, parties may disagree about the first or last day of LD counting.

The second requirement is a clear trigger. The clause should identify whether liquidated damages begin immediately after the contract completion date, after a grace period, after notice of default, after certification by the consultant, or after another stated event. The Philippine cases reviewed in the previous section show that courts examine the agreed trigger and the fact of delay. A clear trigger supports consistent application and reduces the risk that the deduction is viewed as premature or unrelated to the agreed breach.

The third requirement is a clear computation basis. A percentage rate may be applied to the total contract price, the cost of the unperformed portion, a sectional value, or another stated amount. Different bases can produce materially different results even when the percentage is the same. Abdel Aziz (2024) analyzed relationships between calendar-day LD rates and contract sizes and found significant variation in how agencies structure their schedules. The study supports periodic review of rates and transparent links between the rate and the costs intended to be covered.

A maximum cap is also important. A cap informs the contractor of the maximum exposure and identifies when the owner may consider termination or other remedies. Without a cap, the accumulated amount may become disproportionate to the contract value or the remaining work. Hoa et al. (2026) discuss the difference between compensation, penalties, and liquidated damages in international construction practice and emphasize the importance of a legally supportable remedy rather than a purely punitive amount.

Enforceability also depends on consistency among contract documents. The agreement, general conditions, special conditions, technical specifications, schedule requirements, and payment provisions should use the same completion terms and computation rules. Conflicting documents may result in different interpretations of the date, amount, or responsible party. Haidar (2021) explains that contract administration requires coordinated reading of the complete contract rather than reliance on one isolated clause.

Standard forms can improve consistency, but they do not remove the need for project-specific review. Elshamy et al. (2024) found that entitlement to time extension under standard construction contracts can vary with the governing law and the wording of the applicable provisions. Hoa et al. (2026) likewise

distinguish contractual damages, penalties, and liquidated damages across legal systems. Therefore, copying a standard clause without aligning it with local law, project milestones, contract data, and administrative responsibilities may leave significant gaps.

The reviewed literature also supports early explanation of the clause. Contract clarity is partly a drafting issue and partly an administration issue. Even a complete clause may be misunderstood when project personnel have not reviewed it or when the schedule, milestones, and notice procedure are not discussed during mobilization. Narayan et al. (2024) identified lack of general and expert contractual knowledge as a major claims-management challenge. Pre-contract review and project kick-off alignment can reduce this knowledge gap.

Overall, enforceability is strengthened when the clause identifies the breach, completion standard, trigger, rate, computation basis, cap, exclusions, time-extension rules, certification authority, and deduction procedure. The literature supports the finding that a clearly stated daily rate is necessary but not sufficient. Complete and coordinated drafting is required to make the clause understandable and practically usable.

2.4 Extension of Time and Delay Classification

Extension of Time is the contractual mechanism used to adjust the completion date when a qualifying delay affects the contractor's ability to complete the work. It protects the contractor from liquidated damages for delay that is excusable under the contract and preserves the owner's right to assess liquidated damages for delay that remains the contractor's responsibility. For this reason, EOT administration is directly connected with the fairness and accuracy of liquidated damages management.

Delay events are commonly grouped as contractor-caused, owner-caused, external, excusable, compensable, noncompensable, or concurrent. The exact terminology and entitlement depend on the contract and governing law. Hansen et al. (2022) developed a practical decision framework for EOT claims arising from force majeure events and emphasized the need to connect the event, contractual relief, evidence, and project effect. Their work shows that an external event does not automatically produce an extension; the claimant must still satisfy the applicable contract requirements.

Owner-caused delay may arise from late access, delayed drawings, slow approvals, changes, suspension, late owner-supplied materials, or delayed decisions. Hatmoko et al. (2023) found that owner actions can cause delay and support contractor claims, contrary to the assumption that all project delay is a contractor failure. Do et al. (2023) similarly identified contract problems and inappropriate owner actions as leading claim causes connected with construction delay.

Contractor-caused delay may include inadequate planning, lack of resources, poor subcontractor management, late procurement, rework, low productivity, or failure to comply with instructions. Liao et al. (2023) found that contractor behavior and external risks can operate as fundamental causes in claim networks, while engineering-related causes may directly trigger claims. This supports a structured review of both immediate delay events and deeper management causes.

External delay may include abnormal weather, government restrictions, utility relocation, right-of-way issues, unforeseen conditions, or other events outside the immediate control of the parties. Pedron et al. (2025) identified regulatory bottlenecks and project-management weaknesses among significant delay concerns in Philippine road projects. Laroza (2025) found that permit acquisition, testing and commissioning, procurement, manpower, and quality-related rework were important delay factors in Philippine cold-storage projects. These local studies show that delay responsibility may be distributed across several parties and systems.

EOT procedures normally require timely notice, a description of the event, identification of affected activities, an explanation of contractual entitlement, supporting records, and an appropriate schedule analysis. Hansen et al. (2022) emphasize a structured decision process for force-majeure-related EOT claims, while Elshamy et al. (2024) explain that entitlement under standard contracts depends on compliance with the relevant clause and governing

legal system. Younis et al. (2024) further show that the selected delay-analysis technique should match the available records and claim conditions.

Late evaluation of EOT requests creates uncertainty. The contractor may not know the revised completion date or possible LD exposure, while the owner may continue to reserve its rights. When several requests remain unresolved until closeout, the parties must reconstruct events and schedules after the work has changed. Ali et al. (2024) identified information and records as major gaps in delay and disruption claims. Their review supports timely assessment rather than postponing all time decisions until project completion. The time-extension decision should therefore be linked with the liquidated damages decision. A fair process first identifies qualifying events, determines critical-path effect, grants or rejects time, and establishes the adjusted completion date. Only the remaining contractor-responsible delay should be used in the final LD computation. This sequence is reflected in the Philippine public-procurement rule referring to completion within the contract duration inclusive of duly granted extensions (GPPB, 2025).

The literature also warns against using broad delay labels without analysis. A project may contain several overlapping events, partial mitigation, changing critical paths, and periods where different parties are responsible. Therefore, EOT administration should not be reduced to a simple comparison between planned and actual completion. It requires contract interpretation, schedule analysis, and evidence of the actual effect of each event.

2.5 Claims Management, Notices, and Documentation
A construction claim is a formal request for time, money, or another contractual remedy. Claims management covers identification, notice, documentation, preparation, evaluation, negotiation, decision, and resolution. Liquidated damages management intersects with each stage because the owner's potential deduction may be challenged by an EOT claim, a delay-responsibility defense, or a dispute over completion and computation.

Recent research describes claims management as a continuing process rather than a document prepared only at the end of the project. Alrasheed et al. (2025) identified factors for effective claims management across project phases, including review of contract requirements, recognition of claimable events, analysis, documentation, and communication. Piyumra et al. (2025) also emphasized the role of professional knowledge, experience, and knowledge transfer in successful claims management.

Narayan et al. (2024) grouped major claims-management challenges into stakeholder predisposition, insufficient resources, lack of an established procedure, poor documentation and information management, and limited contractual knowledge. These themes help explain why technically valid claims may still be delayed or rejected. A party may have a valid event but fail to issue notice, connect the event to the critical path, or maintain evidence of the resulting effect.

Notice is usually the first formal control. It informs the other party that an event may affect time or cost and allows early investigation and mitigation. A useful notice identifies the event, date, affected work, relevant contract clause, possible consequence, and the records that will follow. When notice is delayed until final billing, the owner or consultant may have lost the opportunity to verify site conditions or make a timely decision.

Documentation gives the claim an evidence base. Important records include the approved baseline schedule, regular schedule updates, daily reports, manpower and equipment records, photographs, requests for information, instructions, drawing registers, approval logs, material-delivery records, minutes, testing records, progress measurements, cost records, and correspondence. Haidar (2021) treats these records as central to the preparation and evaluation of time and cost claims.

Scheduling practice is particularly important for delay claims. Abdela et al. (2024) found that the effectiveness of delay analysis depends on scheduling practice and the availability of as-built records. A baseline schedule that is incomplete, overly general, or not logically linked will weaken later analysis. Updated schedules must also reflect actual progress, approved changes, and current logic rather than serving only as payment attachments.

The quality of correspondence also affects claims processing. Ranjan et al. (2025) identified repetitive clarification, inconsistent documents, and manual processes as causes of delay in claim finalization. Their natural-language-processing approach was directed at improving completeness and reducing avoidable correspondence cycles. The study supports the practical value of standardized claim templates, clear evidence indexes, and consistent terminology.

Ghosh and Karmakar (2025) developed a BIM-integrated document-management framework for claims and disputes. They observed that incomplete, fragmented, and manually managed records increase the likelihood of conflicting interpretations and rejected claims. Their work reinforces the need for a centralized and traceable source of project information, particularly where many disciplines, contractors, and approval authorities are involved.

A strong claims procedure should also state who reviews the claim, the period for response, whether additional particulars may be requested, how the determination will be documented, and how disagreement will be escalated. Without an established decision timeline, EOT requests may remain pending while possible LD exposure continues to grow. This creates commercial uncertainty and may shift the project team from problem solving to defensive record building.

The literature therefore supports an integrated claims-management system in which notice, schedules, supporting records, analysis, and decisions are connected. For liquidated damages, the owner should maintain its own evidence of the completion date, extended site costs, certification, and computation, while the contractor should maintain evidence of excusable delay and mitigation. A transparent record allows both sides to test the same facts before the issue develops into a formal dispute.

2.6 Delay Analysis and Concurrent Delay

Delay analysis is used to identify when a delay occurred, whether it affected the critical path, how much time it added to completion, and which party is responsible under the contract. The selection of a method can materially affect EOT and liquidated damages. Azzam et al. (2025) emphasize that method selection should consider project records, schedule quality, contract requirements, legal context, timing of analysis, and the nature of the delay events.

Common delay-analysis approaches include as-planned versus as-built comparison, impacted as-planned, collapsed as-built, time-impact analysis, and windows analysis. Recent studies stress that method selection should fit the contract, available schedules, quality of records, and timing of the analysis (Fan, 2022; Younis et al., 2024; Azzam et al., 2025). Al-Gahtani et al. (2026) further propose a structured activity-level framework for allocating delay and acceleration events and assessing responsibility, including concurrent delay and float considerations.

Younis et al. (2024) developed a decision-support framework for choosing delay-analysis techniques for EOT claims. Their work reflects the practical difficulty of selecting one method for all projects. A simple project with reliable records may be analyzed differently from a complex project with multiple schedule updates, changing logic, and several overlapping delay events.

Fan (2022) examined soft logic in construction schedules. Soft logic allows activities to be performed in more than one sequence and may change when the contractor mitigates delay. The study proposed an algorithm for updating project-wide soft logic and calculating EOT more accurately. This is relevant to LD management because rigid reliance on the original sequence may overstate or understate the actual effect of an event when alternative work sequences were available.

Al-Gahtani et al. (2026) focused on activity-level allocation of delay and the accuracy of claim analysis. Their framework recognizes that the timing and distribution of delay within individual activities affect the overall conclusion. The study supports more detailed analysis than a simple comparison of original and actual finish dates.

Concurrent delay is one of the most disputed areas. It generally involves overlapping delays attributable to different parties that affect the same completion period, but contracts and legal systems do not always define it in the same way. Jagannathan et al. (2025)

observed that many contracts classify delays as though owner and contractor events occur separately, even though actual projects often contain concurrent events. Huynh et al. (2022) applied game theory to the apportionment of concurrent delay liability. Their work sought a transparent allocation among owners, contractors, and subcontractors instead of assuming that one party bears the whole effect. Hajiashrafi et al. (2024) extended cooperative game-theory ideas to delay and liquidated damages allocation and included participant finish dates in the analysis. These approaches are not yet standard contractual methods, but they show continuing efforts to address fairness in overlapping responsibility.

The practical treatment of concurrency may include granting time without cost, apportioning responsibility, suspending LDs for the concurrent period, or following another rule stated in the contract or governing law. Elshamy et al. (2024) demonstrate that entitlement can differ across legal systems even under a standard contract. Therefore, a clause should state how concurrency will be evaluated rather than leaving the issue entirely to a later dispute.

Delay analysis should also consider mitigation. A contractor may resequence work, add resources, or recover some delay, changing the critical path and the final period of exposure. The analysis must distinguish the original event, the contractor's reasonable response, and any independent contractor delay. This prevents the owner from charging a period already recovered and prevents the contractor from using an owner event to excuse unrelated underperformance.

Overall, reliable delay analysis requires a sound baseline, updated schedules, actual-progress data, event records, clear assumptions, and a method suitable for the project. The result should explain the adjusted completion date and the contractor-responsible period in a way that project personnel and decision makers can understand. This provides a defensible basis for EOT decisions and liquidated damages computation.

2.7 Project Outcomes and Contractor Behavior

Liquidated damages are intended to influence timely performance, but their effect on project outcomes is not limited to the completion date. The possibility of LD exposure may affect contractor planning, resource allocation, procurement, cash flow, subcontractor management, and negotiation strategy. The financial consequence can strengthen schedule attention, but it can also encourage short-term recovery measures that create other project risks.

Alshboul et al. (2022) showed that project characteristics and available data can be used to predict liquidated damages exposure. This supports the view that LD risk forms part of project performance management. Contractors may monitor forecast completion and possible deductions together with productivity, cost, and schedule variance. Early prediction can support corrective action before the delay becomes unrecoverable.

Studies on claims show that delay and change events have linked effects on time, cost, and quality. Kikwasi (2023) found that variations, changes in scope, and delayed completion were connected with several claim causes and effects. Liao et al. (2023) identified networks of claim causes rather than isolated events. These findings indicate that LD exposure may be the visible result of a wider combination of design, management, resource, and external problems.

Claims can increase direct and indirect cost. Direct cost may arise from additional labor, equipment, materials, or subcontractor work. Indirect cost may include extended supervision, temporary facilities, financing, bonds, insurance, overhead, and professional fees. The owner may also face extended administration and delayed use. Therefore, the amount of liquidated damages is only one financial element within the wider cost effect of delay.

The possibility of LD assessment commonly leads to acceleration or recovery action. Contractors may add crews, extend shifts, work weekends, procure materials faster, resequence activities, or perform work in parallel. These measures may reduce delay but can also lower productivity when space, supervision, access, and trade coordination are limited. Recovery is most effective when it is based on a realistic schedule and resource plan rather than a general instruction to increase manpower.

Claims also affect quality. Laroza (2025) identified quality-related rework and testing or commissioning problems among significant delay factors in Philippine cold-storage projects. Rework can both cause delay and result from hurried recovery. When work is accelerated without matching inspection, testing, and coordination, the project may gain short-term progress but later lose time through defects and punch-list correction.

Safety may also be affected by uncontrolled acceleration. Longer working hours, night work, additional crews, congested work areas, and compressed sequences can increase exposure if supervision and safety controls do not expand with the work. Although liquidated damages are not designed to reduce safety, the pressure created by possible deductions can influence management decisions. This supports the need for recovery plans that include quality and safety measures, not only planned finish dates.

Pedron et al. (2025) found that Philippine road delay mitigation requires coordinated action on financial management, subcontractor performance, planning, and regulatory constraints. This local evidence supports the study's finding that liquidated damages cannot replace good project management. A penalty may encourage action, but completion still depends on resources, approvals, logistics, design information, and capable supervision.

The literature therefore presents a balanced view. Liquidated damages may improve schedule discipline and motivate recovery, but they do not guarantee on-time completion. Their effectiveness depends on whether the contractor can control the delay and whether the project team can remove constraints. When applied without proper analysis, the clause may add financial pressure without addressing the actual cause of delay.

For this reason, project outcomes should be assessed in several dimensions: time, cost, quality, safety, claims, and stakeholder coordination. The present study follows this broader approach by examining the perceived influence of liquidated damages on claims and project-related outcomes rather than treating delayed completion as the only result.

2.8 Stakeholder Relationships, Fairness, and Risk Allocation

Construction projects depend on continuing relationships among owners, contractors, consultants, designers, project managers, subcontractors, suppliers, and government authorities. Liquidated damages are administered within these relationships. The same clause may support accountability when it is clearly explained and fairly applied, or create mistrust when it is imposed without transparent delay evaluation.

Risk allocation determines which party bears the time and financial effect of a delay event. A balanced contract allocates a risk to the party best able to control, price, insure, or manage it. Haidar (2021) explains that unclear or one-sided allocation can produce claims and disputes because the parties may interpret the same event differently. The EOT and LD clauses must therefore work together.

Owner-caused and external delays are central fairness issues. Hatmoko et al. (2023) show that owner actions can produce contractor claims, while Pedron et al. (2025) and Laroza (2025) show that regulatory, permitting, testing, procurement, and other project-system factors contribute to delay in the Philippine setting. Charging the contractor for periods caused by these events can create a perception that the contract is being used only as a deduction mechanism.

Contract enforcement and relational factors are not mutually exclusive. Zhang et al. (2021) found that fairness perception and trust influence satisfaction with construction dispute resolution. Clear enforcement can be accepted when parties view the procedure as fair and supported by evidence. In contrast, flexible or inconsistent treatment may reduce confidence when the parties do not understand how decisions are reached.

Gao et al. (2025) reviewed trust-building mechanisms in construction projects and identified relational behavior, cultural similarity, and contract completeness as important mechanisms. For liquidated damages, contract completeness supports certainty, while relational behavior supports open discussion, timely notice, and problem solving. The two mechanisms can complement each other: a clear clause provides the rule, and collaborative

administration helps apply it without unnecessary conflict.

Kurukulasooriya et al. (2024) identified collaboration challenges and solutions in relationships between local and foreign contractors. Although their context differs from the present study, the results show that shared procedures, communication, capability, and alignment are necessary in complex contractual relationships. These factors are also relevant when several contractors and consultants must coordinate completion and delay information.

Setijanto et al. (2026) found that trust and satisfaction can support contractor-developer loyalty and reduce the likelihood of disputes. The study reinforces the practical importance of transparent treatment and value cocreation. In an LD context, stakeholders are more likely to accept an adverse decision when the process is documented, the calculation is understandable, and both owner and contractor delays have been evaluated.

Risk allocation becomes especially difficult when responsibility is mixed. Concurrent delay, changes, late information, and contractor underperformance may occur in the same period. Jagannathan et al. (2025) argue that contracts should address concurrent conditions rather than assume that delays are mutually exclusive. Fair administration may require separating periods, granting time without cost, apportioning responsibility, or applying the specific contract rule.

The method of deduction can also affect relationships. A surprise deduction from final payment or retention may lead to immediate dispute, particularly when EOT requests remain unresolved. Earlier notice of possible exposure allows the contractor to submit records and the parties to discuss mitigation. This supports the study's recommendation that LD assessment should follow notice, EOT decision, delay allocation, computation review, and an opportunity for response.
The literature therefore shows that liquidated damages can create accountability or a blame-focused environment. The difference is not the clause alone. It depends on clarity, timing, evidence, communication, due process, and balanced treatment of delay responsibility. These factors directly support the present study's examination of stakeholder relationships and risk allocation.

2.9 Dispute Prevention and Digital Claims Administration

Construction claims do not always become formal disputes. Many issues can be resolved through timely project-level review when the facts, contract provisions, and records are available. Dispute prevention therefore begins before the disagreement becomes fixed. It includes clear drafting, early notice, current schedules, regular EOT decisions, transparent computations, and meetings focused on resolution rather than only on reservation of rights.

Shojaat et al. (2025) used a DEMATEL and Bayesian-network approach to examine the complexity of dispute management. Their work reflects the interdependence of dispute causes and the need to identify influential factors early. Macherla and Vilventhan (2025) likewise analyzed dispute causes and resolution mechanisms in metro-rail projects and emphasized collaborative action because unresolved disputes can affect time, cost, relationships, and future cooperation.

Silva et al. (2025) analyzed attributes of construction legal cases and demonstrated the value of systematic review of dispute information. Tabbara et al. (2025) examined the interaction between law and contract in construction disputes. Together, these studies show that claims cannot be managed through technical analysis alone; the contract, governing law, evidence, and decision strategy must be considered together.

Digital technologies can improve the availability, organization, traceability, and review of claims evidence. Ali et al. (2024) identified information and record gaps as a major research area in delay and disruption claims. Zeberga et al. (2024) reviewed the use of BIM, blockchain, artificial intelligence, and other digital technologies for preventing and resolving contractual disagreements. More recent studies have proposed BIM-integrated document systems, natural-language-processing support for claim correspondence, and blockchain-based EOT workflows (Ghosh & Karmakar, 2025; Ranjan et al., 2025; Mubashir et al., 2026).

Zeberga et al. (2024) systematically reviewed digital technologies for preventing, mitigating, and resolving contractual disagreements in the architecture, engineering, and construction industry. Their review identified the potential of BIM, blockchain, artificial intelligence, natural-language processing, and other systems to improve information access, transparency, and decision support. The review also recognizes that technology must be supported by proper processes and reliable data.

Ghosh and Karmakar (2025) proposed a digitalized document-management system integrated with BIM. Ranjan et al. (2025) used natural-language-processing concepts to address repetitive and inconsistent claim correspondence. These studies are relevant to liquidated damages because the final assessment may depend on hundreds of records from schedules, progress reports, instructions, notices, and approvals.
Blockchain has also been examined for EOT claims. Mubashir et al. (2026) developed a prototype interface for blockchain-based management of time-extension claims. The approach seeks to improve traceability and reduce disputes arising from inefficient traditional systems. Blockchain does not decide entitlement by itself, but an immutable record of notices, submissions, responses, and approvals can strengthen the audit trail.

Digital systems can also support early warning. Alshboul et al. (2022) used ensemble machine learning to predict liquidated damages in highway projects. Predictive tools may help identify projects at risk of delayed completion and allow earlier management action. However, model outputs remain dependent on data quality and should not replace contractual assessment of entitlement and responsibility.

The value of digital claims administration is therefore practical rather than automatic. A system can improve storage, retrieval, linkage, version control, and communication, but it cannot correct an unclear clause or missing baseline schedule. The organization must first define its claims procedure, responsible persons, required records, and decision authority. Technology should support these controls rather than create a second uncoordinated record system.

For projects in the National Capital Region, digital records may be especially useful because of multiple stakeholders, dense approval processes, specialist trades, and overlapping project activities. Centralized logs for notices, EOT requests, approvals, design changes, schedule updates, and LD exposure can support faster evaluation and reduce dependence on individual email files or personal memory.

2.10 Contract Administration Controls for Liquidated Damages Assessment

The literature indicates that effective liquidated damages management should begin before a delay occurs. Contract drafting, schedule preparation, document-control planning, and designation of decision authority establish the controls that will later support or weaken an LD assessment. Haidar (2021) treats these activities as connected parts of contract administration. The practical implication is that the owner should not wait until project closeout to determine how completion, delay, Extension of Time, and liquidated damages will be administered.

The first control is an agreed completion-management system. The contract completion date, sectional milestones, testing requirements, turnover conditions, and certification procedures should be reflected in the approved baseline schedule. Abdela et al. (2024) found that schedule reliability, accurate updates, timely communication, and documented as-built records materially affect delay-claim analysis. Younis et al. (2024) and Azzam et al. (2025) likewise show that time entitlement and delay responsibility must be connected with the available programme information and the selected analysis method. When the schedule uses milestones that do not match the contract, the project team may monitor one completion basis while the LD clause applies another.

A second control is an early-warning and notice procedure. Notice should identify the event, date, affected work, possible consequence, relevant clause, and records that will follow. Early notice gives the receiving party an opportunity to inspect the condition, issue instructions, reduce the effect, or dispute the stated cause while evidence is still available. Alrasheed et al. (2025) and Piyumra et al. (2025) emphasize claim recognition and communication across the project life cycle. Their findings support a

procedure in which possible LD exposure is communicated before final billing rather than introduced as a surprise deduction.

A third control is an Extension of Time register. The register should record the notice date, event, claimed period, documents received, responsible reviewer, status, request for additional information, recommendation, and decision. Younis et al. (2024) show that EOT assessment requires structured selection of the analysis approach, while Elshamy et al. (2024) emphasize compliance with the governing contract and law. A register does not decide entitlement, but it prevents requests from being lost and helps management identify decisions that are becoming overdue.

Schedule monitoring is another necessary control. Updated schedules should show actual progress, approved changes, revised logic, mitigation, and forecast completion. They should not be prepared only to support a payment application. Abdela et al. (2024) found that scheduling practice affects the effectiveness of delay-claim analysis. A reliable series of updates allows the parties to identify when slippage began, whether the critical path changed, and whether recovery measures reduced the final contractor-responsible delay.

Recovery planning should be reviewed as a management decision rather than treated only as a contractor obligation. A recovery plan should identify added resources, extended hours, resequencing, procurement acceleration, temporary works, supervision, inspection, testing, safety controls, and expected productivity. The literature on project outcomes shows that acceleration may reduce delay but may also increase rework, cost, and coordination risk. Review of the recovery plan helps the project team distinguish reasonable mitigation from actions that create new project problems.

A delay-responsibility matrix can support transparent assessment when several events overlap. The matrix may identify each event, responsible party, affected activities, notice status, EOT status, critical-path effect, mitigation, and period of responsibility. Jagannathan et al. (2025), Huynh et al. (2022), and Hajiashrafi et al. (2024) show that concurrent-delay allocation involves more than assigning the whole period to one party. A responsibility matrix does not replace technical analysis, but it makes assumptions and unresolved matters visible to the parties.

The LD computation itself should be subject to verification. The reviewer should confirm the applicable rate, computation basis, revised completion date, actual or certified completion date, contractor-responsible period, exclusions, maximum cap, and prior deductions. Abdel Aziz and Muiruri (2023) demonstrate that agencies use different implementation forms and bases, while Abdel Aziz (2024) shows that rates may vary according to project and cost characteristics. A transparent computation sheet allows the contractor and owner to review the same data and reduces arithmetic or interpretation errors.

The timing of deduction is also important. Deduction from progress payments, retention, or final accounts before EOT and responsibility are resolved may increase conflict and cash-flow pressure. The Philippine public-procurement rules provide specific procedures for deductions and securities, while private contracts depend more heavily on their negotiated terms. In either setting, notice of the proposed assessment, access to the computation, and an opportunity to submit supporting records strengthen procedural fairness.

Dispute avoidance should be included in the control system. A staged process may begin with project-level review, continue to authorized management negotiation, and then proceed to the dispute-resolution method stated in the contract. Shojaat et al. (2025), Macherla and Vilventhan (2025), and Silva et al. (2025) show that disputes are affected by interacting technical, contractual, legal, and relational factors. Early review is more effective when the decision makers have authority, the relevant records are available, and the meeting is directed toward resolving defined issues.

Organizational capability supports all of these controls. Claims-management studies repeatedly identify contractual knowledge, experienced personnel, information management, and knowledge transfer as important factors (Narayan et al., 2024;

Piyumra et al., 2025). A well-written procedure may still fail when project personnel do not understand notice requirements, schedule logic, delay categories, or the authority needed for an EOT decision. Training should therefore include both contract provisions and the actual forms, registers, schedules, and approval routes used on the project.

Digital systems can make the controls easier to maintain but should follow the agreed process. Ghosh and Karmakar (2025), Ranjan et al. (2025), and Zeberga et al. (2024) show the value of centralized records, structured correspondence, information retrieval, and digital decision support. The system should connect the contract clause, notice, schedule update, EOT request, supporting records, decision, responsibility assessment, and LD computation. When these records remain in separate personal files, the final assessment becomes slower and more dependent on incomplete reconstruction.

Taken together, the reviewed controls support a continuous LD management process: define the obligation, align the schedule, identify and notify delay events, maintain current records, evaluate EOT entitlement, assess responsibility, review mitigation, verify the computation, and attempt early resolution. This process is consistent with the practical management recommendation developed from the present study. It also explains why liquidated damages cannot be evaluated only from the daily rate or the difference between the original and actual completion dates.

2.11 Philippine Construction Context and Local Research

The Philippine construction industry includes public infrastructure, private buildings, industrial facilities, residential developments, and specialized projects. Each project type may use different contract forms, completion standards, and administrative practices. This variety makes it difficult to assume that liquidated damages are understood and applied in the same manner across all projects.

Public projects are governed by procurement laws, implementing rules, bidding documents, and agency procedures. The current IRR of Republic Act No. 12009 links liquidated damages with the unperformed portion, usability, duly granted time extensions, deductions, securities, and possible termination. These detailed rules provide a more standardized public-sector approach, although actual administration still depends on timely certification, EOT decisions, and project records. (GPPB, 2025)

Private projects rely more heavily on negotiated contracts and the Civil Code. Philippine jurisprudence shows recurring issues concerning proof of delay, substantial completion, the contractual completion date, default, and the agreed computation. Southstar Construction and Development Corporation v. Philippine Estates Corporation (2022) provides a recent construction example, while Transcept Construction and Management Professionals, Inc. v. Aguilar (2010) is retained as a necessary older authority on substantial completion. Together with the Civil Code, these authorities show that practical entitlement depends on both the contract and the established project facts.

Recent local delay studies provide important context even when they do not focus directly on liquidated damages. Laroza (2025) identified inadequate manpower, concrete-slab delays, permit issues, rework, testing and commissioning problems, and late procurement in Philippine cold-storage projects. Pedron et al. (2025) identified financial management, subcontractor performance, planning, and regulatory concerns in Philippine road construction. These factors can later affect EOT requests and possible LD exposure.

The National Capital Region has characteristics that may increase claims complexity. Projects commonly involve limited access, traffic restrictions, multiple utilities, neighboring properties, strict building operations, several permit and approval authorities, and complex subcontracting. These conditions can create overlapping owner, contractor, external, and third-party delays. They also increase the need for current schedules, clear communication, and documented instructions.

The local legal framework recognizes agreed damages, but published empirical studies on how Philippine construction professionals administer the complete LD process remain limited. Existing cases

show disputes after they have escalated, while local delay studies identify causes of late completion. There is less evidence on day-to-day professional understanding of completion triggers, EOT processing, documentation, contractor behavior, and stakeholder relationships.

Another local concern is the use of standard percentage clauses without detailed supporting provisions. Public contracts may state a prescribed rate and basis, while private contracts may use a percentage of the contract amount or another agreed daily sum. The respondent evidence in the present study showed differences in computation basis and completion interpretation, supporting the need to examine actual professional practice rather than only the legal text.

The literature also indicates that industry capability affects claims outcomes. Narayan et al. (2024) and Piyumra et al. (2025) identified contractual knowledge, resources, experience, and knowledge transfer as important to claims management. In the Philippine setting, project engineers, planners, quantity surveyors, architects, owners, project managers, and contracts personnel may have different levels of access to contract information and delay-analysis training.

This context supports practical guidance that can be used by both public and private project stakeholders. Clear LD clauses, common understanding, defined EOT procedures, centralized records, controlled recovery plans, and fair delay allocation are applicable across different project forms. However, the procedure must remain consistent with the specific contract and governing legal requirements.

The present study contributes local evidence by combining survey assessments from 41 qualified construction professionals with written professional experiences from 16 participants who had worked on NCR projects. It does not replace case analysis or contract review, but it adds a field-based view of how liquidated damages management is understood and experienced in practice.

2.12 Synthesis of the Reviewed Literature and Studies

The reviewed literature consistently shows that liquidated damages are pre-agreed contractual amounts intended to address delayed completion, provide financial certainty, and strengthen the time obligation. Their practical value lies in avoiding a full calculation of actual loss after delay. However, the remedy becomes effective only when the contract identifies the relevant breach and the project records establish that the contractor failed to complete within the applicable contract period.

The legal and regulatory sources show that liquidated damages are based on agreement and proof of the contemplated breach. Philippine law permits parties to stipulate the amount but allows reduction of unconscionable damages and requires the clause to match the actual breach. Public-procurement rules further connect liquidated damages with duly granted time extensions, the unperformed or usable portion of the works, deductions, securities, and termination thresholds. Philippine cases emphasize express contract wording, proof of delay, default, and the meaning of substantial completion.

The literature on clause clarity identifies several necessary components: completion definition, trigger, rate, computation basis, cap, exclusions, EOT rules, certification, and deduction procedure. Clear wording must also be coordinated across the agreement, general conditions, special conditions, specifications, schedule requirements, and payment provisions. A clear daily rate alone does not resolve disputes when the start and end of counting or the controlling completion event remain uncertain.

The reviewed EOT and delay literature shows that liquidated damages should be assessed only after qualifying delay events and time entitlement have been evaluated. Contractor-caused, owner-caused, external, excusable, compensable, and concurrent delay require different treatment. The adjusted completion date, not automatically the original date, is the proper reference for final assessment. Late EOT decisions increase uncertainty and make closeout disputes more likely.

Claims-management studies agree that timely notice, complete supporting records, current schedules, clear

procedures, contractual knowledge, and responsible decision makers are necessary. Poor information management, delayed correspondence, limited resources, and lack of established procedures weaken both claims and defenses. Digital technologies can improve traceability and access, but they cannot replace clear contracts, sound schedules, and disciplined project administration.

Delay-analysis studies show that the choice of method must fit the project, records, and contract. Soft logic, changing critical paths, mitigation, and concurrent delay can materially affect the result. New analytical and game-theory approaches seek fairer allocation, but no single method is suitable for every project. The analysis must remain understandable, evidence-based, and consistent with the governing contract and law.

Research on project outcomes indicates that LD exposure influences contractor behavior and financial decisions. Contractors may increase resources, extend work hours, and resequence activities. These actions may support recovery, but they may also increase cost, reduce productivity, create rework, affect quality, and increase safety exposure when not properly controlled. Liquidated damages therefore encourage schedule attention but do not guarantee timely completion.

Stakeholder and trust studies show that contract enforcement is more acceptable when the process is viewed as fair, transparent, and supported by evidence. Clear provisions and collaborative behavior can operate together. In contrast, unresolved EOT requests, surprise deductions, incomplete records, and one-sided delay allocation can create defensive communication and blame-focused relationships.

The main international research is extensive in the areas of legal interpretation, highway LD schedules, EOT claims, delay analysis, documentation, claims systems, risk allocation, digital technology, and stakeholder relationships. Philippine sources provide the Civil Code, public-procurement rules, court decisions, and recent studies on construction delay causes. However, limited published research directly combines these areas to examine how qualified construction professionals in the National Capital Region understand and administer liquidated damages in actual project practice.

The identified gap supports the present study. The study does not attempt to prove that liquidated damages directly cause a specific project outcome. Instead, it examines perceived effects and practical influence through respondent assessments and written professional experiences. It focuses on four connected areas: respondent profile; clause clarity, enforceability, and practical application; the claims process and project outcomes; and stakeholder relationships and risk allocation. The mixed evidence provides a local practice-based complement to the legal, contractual, and technical literature reviewed in this chapter.

III. METHODOLOGY

3.1 Research Design

The study used a descriptive mixed-method research design with greater qualitative emphasis. The structured survey was used to summarize the assessments of qualified construction professionals through numerical results. The written semi-structured interview responses were used to explain the professional experiences, reasons, and project conditions behind the survey results.

The study was descriptive because it examined the existing assessments and experiences of the participating professionals without changing project conditions or testing an intervention. It identified common views, contrasting experiences, and recurring issues concerning liquidated damages management.

Research Problem 1 was answered through the survey profile data only. Research Problems 2 to 4 were answered through both the survey and written interview responses. Research Problem 5 was answered by integrating the major findings from Research Problems 2 to 4 as the basis for the proposed practical liquidated damages management process. The survey showed the general level or frequency of the respondents' assessments, while the written interview responses explained how the issues occurred in construction practice.

The study did not conduct an inferential statistical test to prove that one factor directly caused another. The word "impact" in the study title refers to the perceived effects and practical influence of liquidated damages

management based on the assessments and professional experiences of the participating qualified construction professionals.

3.2 Respondents and Sampling Procedure

The study used purposive sampling to select construction professionals who could provide informed assessments and experiences concerning liquidated damages management. Purposive sampling was appropriate because the study required participants with relevant knowledge or involvement in construction contracts, delays, claims, project management, or construction management.

The original research proposal targeted 10 carefully selected experts. During the proposal defense, the panel recommended increasing the number because 10 respondents were considered too few for the intended study. After consultation with the adviser, the target was expanded to 50 qualified and experienced construction professionals.

The target of 50 was an adviser-approved purposive target established in response to the proposal-defense recommendation. It was not calculated using a probability-based sample-size formula. The 50 invited professionals were also not treated as the total population of construction professionals in the National Capital Region.

Fifty professionals were invited to participate. Forty-one completed the structured survey, resulting in a response rate of 82.00%. Among the 41 survey respondents, 16 also completed the written semi-structured interview guide. Written interview participation represented 39.02% of the survey respondents and 32.00% of all invited professionals.

The findings are descriptive of the 41 participating qualified construction professionals. Because purposive sampling was used, the results should not be interpreted as statistically representative of all construction professionals, organizations, or projects in the National Capital Region.

3.3 Qualifications and Recruitment of Respondents

No minimum number of years of construction experience was imposed as a qualification. However, the participants were required to have worked on, be working on, or have experience in construction projects in the National Capital Region.

The participants were also required to have knowledge or experience concerning liquidated damages and involvement in one or more of the following areas:

- negotiation of liquidated damages or related contract provisions;
- project operations affected by liquidated damages;
- contract or claims administration; or
- implementation of liquidated damages provisions.

The participating professionals included engineers, project managers, owners, architects, a contracts manager, and other construction practitioners involved in project implementation, supervision, coordination, contracts, and claims. Their detailed profile is presented in Chapter 4.

The respondents were recruited through professional contacts, referrals, social-media postings, industry groups, and combinations of these approaches. The recruitment process was intended to reach professionals who met the study qualifications and was not intended to produce a random or probability-based sample.

The 16 written interview participants were identified only through the numbers assigned to their response files: Respondents 01, 02, 03, 04, 05, 06, 07, 08, 09, 12, 13, 15, 16, 23, 24, and 50. These numbers served only as identification codes and did not indicate ranking, importance, or continuous sequence of participation.

All participants had experience in NCR construction projects. However, some written interview participants referred to their wider professional experience when explaining their answers. These responses were treated as supporting professional context and did not change the geographic focus of the study.

3.4 Research Instruments

The study used two research instruments: a structured survey questionnaire and a written semi-structured interview guide. Both instruments were submitted to and reviewed by the adviser before distribution. The

study does not claim that the instruments underwent statistical validation, pilot testing, or review by a separate panel of experts.

Structured Survey Questionnaire. The first instrument was administered through Google Forms. It contained four respondent-profile questions covering age, gender, years of construction experience, and current position or designation.

The survey also contained 20 rated items arranged under the following five original areas:

1. Understanding and Awareness of Liquidated Damages;
2. Effectiveness and Fairness of Liquidated Damages;
3. Claims Management and Legal Implications;
4. Impact on Project Outcomes and Stakeholder Dynamics; and
5. Opportunities for Improvement and Recommendations.

Each survey item used a five-point response scale. The meaning of the scale depended on the wording of the question and measured familiarity, clarity, understanding, confidence, effectiveness, fairness, frequency, influence, importance, or likelihood.

The original survey wording, sequence, five areas, and response scales were retained in Appendix 1 because these reflect the instrument actually answered by the 41 survey respondents. The original five-area computation is also retained in Appendix 5.

For the final results and discussion, the individual survey items were mapped to the four approved research problems. This mapping reorganized the presentation of the results but did not change the original questions or the respondents' ratings.

Written Semi-Structured Interview Guide. The second instrument contained 18 open-ended questions arranged under the same five general areas as the survey. The questions asked the participants to explain actual experiences or professional observations concerning:

- unclear or clearly written liquidated damages clauses;
- conflicting interpretations;
- Extension of Time requests;
- delay responsibility;
- construction claims and legal disputes;
- contractor behavior;
- financial, schedule, quality, and safety implications;
- stakeholder relationships;
- alternative risk-allocation methods; and
- recommended improvements.

The participants were allowed to answer the interview questions in their own words and could state when a question did not apply to their experience. Because the responses were submitted in writing, the participants could complete them at their own time.

The written semi-structured interview guide is presented in Appendix 2. The complete word-for-word written responses are presented in Appendix 3.

3.5 Data-Gathering Procedure

Data gathering was conducted from February 2025 to June 2026.

The researcher first distributed the Google Forms survey electronically to qualified construction professionals. Invitations were sent through professional contacts, referrals, social-media postings, industry groups, and combinations of these methods.

The survey invitation and form explained the purpose of the study, the voluntary nature of participation, the intended academic use of the information, and the confidentiality of the responses. The participants could decide whether to complete the survey without penalty.

Completed survey responses were collected through Google Forms. The responses were later exported into a data file and reviewed for completeness before computation and analysis.

The written semi-structured interview guide was also distributed electronically to qualified survey respondents. The participants were allowed to answer by typing directly into the provided document or by submitting a separate Microsoft Word or PDF file.

Sixteen completed written interview files were received. The written interview responses were not

obtained through live recorded sessions. No audio recording, speech-to-text transcription, or focus-group discussion was conducted.

The researcher reviewed the submitted survey and written interview files for completeness. The written interview files were organized using assigned respondent numbers. Survey usernames, email addresses, or other account information were used only when necessary to verify response completeness and were excluded from the reported findings.

Names, signatures, contact information, curriculum vitae, employer details, and other identifying materials were not treated as research findings and were excluded from the reported results and final respondent-response section.

3.6 Data Analysis

Survey Analysis. Frequency and percentage distributions were used to summarize the profile of the 41 survey respondents according to age, gender, years of construction experience, and current position or designation.

For each of the 20 survey items, the weighted mean was computed by adding the ratings submitted by the 41 respondents and dividing the total by 41. The weighted means were used to determine the general level of the respondents' assessments for each item.

The four item means within each of the five original survey areas were averaged to obtain the composite mean for that area. The original five survey areas were also ranked according to their composite means. The complete item and composite computations based on the survey as administered are presented in Appendix 5.

The composite mean was used to summarize the overall assessment of each of the five original survey areas. It was computed by averaging the weighted means of the four survey items under each area. The composite means were then ranked to identify which survey areas received the highest and lowest overall assessments.

The weighted and composite means were interpreted as follows: 4.21 to 5.00, Very High; 3.41 to 4.20, High; 2.61 to 3.40, Moderate; 1.81 to 2.60, Low; and 1.00 to 1.80, Very Low. The terms Very High, High, Moderate, Low, and Very Low refer to the level of the specific indicator measured by each survey item, such as familiarity, clarity, effectiveness, frequency, influence, fairness, or importance.

These values describe the level of the respondents' assessments and were not used as statistical proof of association or causation.

The original five-area composite results are retained as overall survey context and supporting computations. However, the 20 individual survey items are presented in Chapter 4 according to Research Problems 2 to 4. No new composite means were created for the revised research-problem groupings.

Written Interview Analysis. The researcher read each written interview response and applied open coding to important statements. Open coding involved identifying and assigning initial codes to statements concerning liquidated damages clauses, claims, delays, project outcomes, stakeholder relationships, and risk allocation.

Similar initial codes were then grouped into broader categories. The repeated categories were consolidated into the following seven recurring themes:

1. LD rate may be clear while trigger and delay rules are unclear;
2. communication and contract alignment are part of clause clarity;
3. documentation and EOT administration determine claims outcomes;
4. LDs influence contractor behavior but do not guarantee completion;
5. acceleration can transfer delay risk to cost, quality, and safety;
6. LDs can create accountability or a blame-focused environment; and
7. fair risk allocation requires treatment of owner-caused, external, and concurrent delays.

Themes 1 and 2 were mapped to Research Problem 2 on clause clarity, enforceability, and practical application.

Themes 3, 4, and 5 were mapped to Research Problem 3 on the claims process and project outcomes.

Themes 6 and 7 were mapped to Research Problem 4 on stakeholder relationships and risk allocation.

No interview theme was assigned to Research Problem 1 because the respondent profile was answered directly through the survey.

The coding process produced seven recurring themes that addressed the qualitative research problems. No formal saturation test was conducted. However, no major additional theme was identified during the final grouping and consolidation of the codes.

Integration of Survey and Written Interview Findings. Research Problem 1 was answered through survey profile data only. Research Problems 2 to 4 were answered through the combined survey and written interview findings.

The primary instrument alignment was applied as follows:

- Research Problem 2 used Survey Items 1.1, 1.2, 1.3, 1.4, 3.2, 3.4, and 5.1, together with Interview Questions 1, 2, 3, 9, 15, and 17.
- Research Problem 3 used Survey Items 2.1, 3.1, 3.3, 4.1, 4.2, 4.3, and 5.4, together with Interview Questions 4, 8, 10, 11, 12, and 13.
- Research Problem 4 used Survey Items 2.2, 2.3, 2.4, 4.4, 5.2, and 5.3, together with Interview Questions 5, 6, 7, 14, 16, and 18.

The survey results showed the general level or frequency of respondent assessments. The written interview responses explained the experiences and practical conditions behind those assessments.

Agreements between the survey and written responses were identified, but contrasting professional experiences were also retained. Answers based on limited direct experience, general observation, or no applicable experience were considered when interpreting the strength and limits of the qualitative evidence.

After integrating the findings for Research Problems 2 to 4, the recurring issues and recommended practices were grouped into practical management stages. These formed the basis for the proposed ten-step liquidated damages management process presented in Chapter 5. The process was developed as a practical recommendation from the findings and was not statistically tested as a separate model.

Verification of Written Interview Evidence. Appendix 3 contains the original word-for-word written interview responses. Appendix 4 contains the thematic coding and evidence matrix linking the respondent number, interview-question reference, supporting evidence, initial code, category, and final theme.

The revised Appendix 4 serves as the main coding and evidence audit trail. It also distinguishes respondent statements that supported more than one issue and identifies the primary research-problem assignment of each theme.

3.7 Ethical Considerations

Informed Participation. The invited professionals were informed of the purpose of the study, the voluntary nature of participation, and the intended academic use of their answers. They were free to skip a question or stop participating without penalty.

The participants were also allowed to state when an interview question did not apply to their experience. No participant was required to provide an answer concerning a project, claim, or dispute that the participant had not directly experienced.

Confidentiality and Anonymity. The identities of the respondents were protected throughout the data gathering, analysis, and reporting. Survey findings were presented in grouped form, while written interview evidence was identified only through respondent numbers.

Names, employers, signatures, contact information, email addresses, curriculum vitae, license information, and other identifying details were not disclosed in Chapters 4 and 5 or in the verbatim-response section of the appendices.

The respondent numbers were used only to connect the written responses with the thematic coding and evidence matrix. They were not used to identify the participants publicly.

Data Protection. The survey data and written interview documents were maintained for research use only. Access was limited to the researcher and persons authorized to review the thesis.

Identifying information was separated from the reported findings as far as practicable. Results were presented through grouped survey data, anonymized evidence summaries, or respondent-number references to reduce the possibility of identifying individual participants.

Accurate Use of Responses. The researcher retained the meaning of the respondents' written answers when summarizing or interpreting them in Chapter 4.

Appendix 3 preserves the interview answers word-for-word, including the original grammar, spelling, capitalization, wording, and sentence structure. Only formatting, spacing, page layout, respondent numbering, and removal of identifying information were allowed.

Answers stating that the respondent had no direct experience, no involvement, or no applicable example were retained as part of the verbatim record. However, these statements were not presented as direct evidence of actual liquidated damages enforcement, formal claims, legal disputes, or project outcomes.

The thematic coding and evidence matrix in Appendix 4 was used to check that respondent numbers and interview-question references were properly connected with the findings reported in Chapter 4.

IV. RESULTS AND DISCUSSION

This chapter presents and discusses the results for Research Problems 1 to 4. Research Problem 5 is addressed in Chapter 5 through the proposed practical liquidated damages management process developed from the integrated findings. Fifty construction professionals were invited to participate. Forty-one completed the structured survey, while 16 of the 41 survey respondents also submitted written answers to the semi-structured interview guide.

The written interview participants completed the questions at their own time through Microsoft Word or PDF. No live recorded interview was conducted. To protect confidentiality, they were identified only as Respondents 01, 02, 03, 04, 05, 06, 07, 08, 09, 12, 13, 15, 16, 23, 24, and 50.

Research Problem 1 was answered through the survey profile data only. Research Problems 2 to 4 were answered through both the survey and written interview findings. The survey results were summarized through frequency, percentage, weighted mean, composite mean, verbal interpretation, and ranking. The written interview responses were analyzed through open coding, grouping of similar codes, consolidation into seven recurring themes, and integration with the survey findings.

The weighted and composite means were interpreted as follows: 4.21 to 5.00, Very High; 3.41 to 4.20, High; 2.61 to 3.40, Moderate; 1.81 to 2.60, Low; and 1.00 to 1.80, Very Low. These values describe the assessments of the participating qualified construction professionals and do not prove that one factor directly caused another.

As general survey context, all five original questionnaire areas received a High composite assessment. The composite means ranged from 3.543 to 4.098, with Opportunities for Improvement and Recommendations receiving the highest composite mean of 4.098. The complete computations based on the original questionnaire groupings are presented in Appendix 5. The individual survey items are reorganized in this chapter according to Research Problems 2 to 4.

4.1 Profile of the Respondents

Table 1 presents the participation of the invited professionals in the survey and written interview portions of the study.

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Table 1
Participation of the Respondents

Participation Stage	Frequency	Percentage
Professionals invited	50	100.00%
Completed the survey	41	82.00%
Submitted written interview answers	16	32.00% of invitees
Written interview participants among survey respondents	16 of 41	39.02%

Of the 50 invited professionals, 41 completed the survey, resulting in an 82.00% survey response rate. Sixteen participants completed the written interview guide, representing 39.02% of the survey respondents and 32.00% of all invited professionals.

Table 2 presents the age, gender, years of construction experience, and current position or designation of the 41 survey respondents.

Table 2
Demographic and Professional Profile of the Survey Respondents

Profile Variable	Category	Frequency	Percentage
Age	25 and below	1	2.44%
	26–35 years old	28	68.29%
	36–45 years old	9	21.95%
	46–55 years old	2	4.88%
	56 and above	1	2.44%
Gender	Male	26	63.41%
	Female	14	34.15%
	Prefer not to say	1	2.44%
Years of Construction Experience	5 years and below	4	9.76%
	6–15 years	27	65.85%
	16–25 years	9	21.95%
	26–35 years	1	2.44%
Current Position or Designation	Engineer	18	43.90%
	Project Manager	10	24.39%
	Other positions	6	14.63%
	Owner	4	9.76%
	Architect	2	4.88%
	Contracts Manager	1	2.44%

Most survey respondents were 26 to 35 years old, accounting for 68.29% of the participants. This was followed by the 36-to-45-year-old group at 21.95%. The other age groups had smaller representation.

Male respondents accounted for 63.41%, while female respondents accounted for 34.15%. One respondent, representing 2.44%, preferred not to state a gender.

Most respondents had 6 to 15 years of construction experience, accounting for 65.85%. Respondents with 16 to 25 years of experience accounted for 21.95%, while those with five years and below accounted for 9.76%. One respondent had 26 to 35 years of experience.

Engineers formed the largest professional group at 43.90%, followed by project managers at 24.39%. Other positions accounted for 14.63%, owners for 9.76%, architects for 4.88%, and contracts managers for 2.44%.

The profile indicates that the results mainly reflect the assessments of practicing professionals involved in construction-project implementation, supervision, coordination, management, ownership, and contract administration. Most participants were within the 26-to-35-year-old group and had 6 to 15 years of construction experience. However, because purposive sampling was used, the profile and the succeeding findings should not be interpreted as statistically representative of all construction professionals in the National Capital Region.

In answer to Research Problem 1, the survey respondents were mainly 26 to 35 years old, male, had 6 to 15 years of construction experience, and were working as engineers or project managers. The remaining respondents represented other construction roles that provided additional professional perspectives.

4.2 Clause Clarity, Enforceability, and Practical Application

Table 3 presents the seven survey items assigned to Research Problem 2.

Table 3
Survey Results on Clause Clarity, Enforceability, and Practical Application

Item	Indicator	Weighted Mean	Interpretation
1.1	Familiarity with the role of LD clauses	3.951	High
1.2	Clarity of LD clauses in Philippine construction contracts	3.317	Moderate
1.3	Understanding of the financial implications of LDs	4.024	High
1.4	Confidence that stakeholders understand their LD rights and obligations	3.244	Moderate
3.2	Importance of LD clause language to the frequency and outcome of claims	4.244	Very High
3.4	Effectiveness of the Philippine legal framework in resolving LD disputes	3.122	Moderate
5.1	Need for clearer LD language and guidelines	4.366	Very High

The perceived need for clearer LD language and guidelines was Very High at 4.366. The perceived importance of LD clause language to the frequency and outcome of construction claims was also Very High at 4.244.

The respondents had a High level of understanding of the financial implications of LDs at 4.024 and a High level of familiarity with the role of LD clauses at 3.951. These results indicate that the participating professionals generally understood the purpose and possible financial consequences of liquidated damages.

The perceived clarity of LD clauses in Philippine construction contracts was Moderate at 3.317. The respondents' confidence that stakeholders fully

understand their rights and obligations was also Moderate at 3.244. The perceived effectiveness of the Philippine legal framework in resolving LD disputes was Moderate at 3.122.

The results show a difference between general professional awareness and actual contract clarity. Respondents generally understood liquidated damages, but they were less confident that the clause, related procedures, and stakeholder obligations were clearly explained and consistently understood in practice.

LD Rate May Be Clear While Trigger and Delay Rules Are Unclear. The first recurring theme showed that a stated LD rate does not by itself make the complete provision clear.

Respondent 08, Questions 1 and 2, described a high-rise residential contract that did not adequately define substantial completion and the agreed completion date. The unclear completion requirement resulted in conflicting views on when LDs should apply, withheld payments, formal disputes, and late settlement of accounts.

Respondent 16, Question 1, similarly described a contract that stated the daily penalty but did not clearly identify whether completion meant substantial completion or full turnover, including punch-list work. Respondent 23, Question 1, described a project where the daily rate was clear, but the trigger point was unclear between Practical Completion and Final Testing.

Respondent 02, Question 1, identified other possible gaps involving design changes, weather conditions, supply issues, the maximum LD cap, and concurrent delay. These responses indicate that a complete LD provision must explain not only the rate but also the completion requirement, trigger point, applicable exceptions, Extension of Time status, delay categories, computation basis, and maximum amount.

Contrasting experiences were also reported. Respondent 01, Question 1, stated that clearly written and well-defined LD provisions guided contract administration and helped reduce disputes. Respondent 07, Question 1, also reported that the LD clauses in the projects handled were generally clear and understood by the parties.

Respondents 12 and 13, Question 1, both described contracts with a stated rate of one-tenth of one percent for each day of delay. However, Respondent 12 referred to the uncompleted balance of work, while Respondent 13 referred to the total contract price. These different examples show why the basis of computation must be written clearly and should not be assumed merely from the percentage stated.

Communication and Contract Alignment Are Part of Clause Clarity. The second recurring theme showed that written wording must be supported by proper explanation and continuing communication.

Respondent 02, Question 17, recommended a joint line-by-line review of definitions, triggers, calculations, and exceptions. Respondent 05, Questions 15 and 17, stated that LD provisions should be discussed before contract signing, particularly between the general contractor and subcontractor.

Respondent 04, Question 17, observed that managers were responsible for ensuring that the project team understood the LD provisions from the start. Respondent 01, Question 17, identified pre-construction meetings, defined terms, agreed interpretation procedures, schedule alignment, and continuing communication as practices that support common understanding.

Respondents 12, 15, 24, and 50 also recommended early and continuing discussion of LD computation, completion milestones, excusable delays, EOT requirements, documentation, responsibilities, and dispute procedures.

These findings indicate that clause clarity has two parts. The first is written clarity, which concerns what the contract states. The second is administrative clarity, which concerns how the parties explain, understand, document, and apply the provision during project implementation.

The results are consistent with recent construction-contract literature, which emphasizes clear completion requirements, specific LD triggers, defined

computation methods, and consistent contract administration (Abdel Aziz & Muiruri, 2023; Azzam et al., 2025; Haidar, 2021).

In answer to Research Problem 2, the respondents generally understood the role and financial implications of liquidated damages. However, clause clarity, shared understanding, and dispute-resolution effectiveness were assessed less strongly. Practical enforceability therefore depends not only on a stated daily rate but also on clear completion definitions, LD trigger points, EOT procedures, delay classifications, computation rules, caps, and continuing contract alignment.

4.3 Claims Process and Project Outcomes

Table 4 presents the seven survey items assigned to Research Problem 3.

Table 4
Survey Results on the Claims Process and Project Outcomes

Item	Indicator	Weighted Mean	Interpretation
2.1	Effectiveness of LDs in promoting timely completion	3.610	High
3.1	Frequency of LD-related construction claims	3.610	High
3.3	Frequency of LD claims resulting in legal disputes or litigation	3.195	Moderate
4.1	Influence of LDs on the financial outcome of a project	4.195	High
4.2	Effect of LDs on project timelines and contractor behavior	4.220	Very High
4.3	Frequency with which LDs contribute to on-time completion	3.659	High
5.4	Effectiveness of LDs without harming quality or collaboration	3.780	High

The perceived effect of LDs on project timelines and contractor behavior was Very High at 4.220. The perceived influence of LDs on project financial outcomes was High at 4.195.

The perceived effectiveness of LDs without harming quality or collaboration was High at 3.780. The frequency with which LDs contribute to on-time completion was High at 3.659. The perceived effectiveness of LDs in promoting timely completion was High at 3.610, while the frequency of LD-related construction claims was also High at 3.610.

The frequency of LD claims resulting in legal disputes or litigation was Moderate at 3.195. This suggests that LD-related issues and claims may arise at the project level without always developing into formal litigation. The survey results indicate that liquidated damages have a strong perceived influence on contractor behavior and project decisions. However, the lower result for on-time completion compared with contractor behavior suggests that increased pressure or recovery action does not automatically guarantee timely completion.

Documentation and EOT Administration Determine Claims Outcomes. The third recurring theme showed that the result of an LD-related claim depends on the quality and timing of the documents and procedures used by the parties.

Respondent 08, Questions 4, 6, and 8, described unclear milestones, unprocessed EOT requests, weak documentation, delayed owner decisions, and poor contract administration. These conditions contributed to claims and an unresolved principals' meeting.

Respondent 09, Questions 8 and 10, explained that the parties reviewed delay causes, evaluated EOT claims, and negotiated responsibility before deciding the possible LD exposure. Respondent 16, Questions 8 and 10, described how progress reports, RFIs, correspondence, revised schedules, and EOT documents supported a partial time extension and reduced the LD amount.

Respondent 23, Questions 9 and 10, identified vague notice requirements and deductions from final payment or retention as common sources of dispute. These responses show that a valid delay explanation must also be supported by timely notices, updated schedules, instructions, approvals, correspondence, and formal EOT documents.

Documentation therefore performs two functions. First, it records what happened and when it happened. Second, it provides the evidence needed to evaluate entitlement, critical-path effect, delay responsibility, and the final period that may properly be charged to the contractor.

LDs Influence Contractor Behavior but Do Not Guarantee Completion. The fourth recurring theme showed that contractors commonly respond to possible LD exposure by increasing resources and recovery efforts.

Respondent 03, Questions 4 and 12, reported that the contractor added manpower and equipment and worked overtime after LD concerns were raised. Respondent 07, Question 4, described a project with an LD rate of PHP 100,000 per day, which strengthened early planning and close coordination.

Respondent 09, Questions 12 and 13, observed overtime, night shifts, and added resources to reduce delay, although these measures did not always guarantee completion on schedule. Respondents 12, 13, 15, 16, 24, and 50, Question 12, likewise described schedule crashing, additional manpower, longer working hours, parallel crews, closer monitoring, accelerated deliveries, and other recovery measures.

Respondent 23, Question 12, reported twenty-four-hour shifting to protect the schedule. These experiences support the survey result showing a Very High effect of LDs on project timelines and contractor behavior.

However, the responses also indicate that LDs are only one part of schedule control. Their effectiveness still depends on planning, procurement, access, approvals, resource availability, coordination, and whether the delay is within the contractor's control.

Acceleration Can Transfer Delay Risk to Cost, Quality, and Safety. The fifth recurring theme showed that recovery measures may improve progress but may also create other project risks.

Respondent 04, Question 12, observed that rushed work may skip quality-assurance steps and make quality secondary. Respondent 09, Question 12, stated that overtime and additional resources may help the schedule but require continued quality checks.

Respondent 16, Question 12, described parallel crews and fast-tracked work that increased punch-list items, rework, and coordination gaps. Respondent 23, Question 12, reported quality shortcuts in cable termination and conduit tagging during twenty-four-hour shifting, which later required rectification.

Respondent 24, Question 12, observed that additional hours and rushed work caused minor defects that required correction. Respondents 50, 15, and 01, Question 12, stressed that acceleration requires stronger supervision, quality control, and safety measures.

These findings show that the pressure to avoid liquidated damages may shift part of the schedule risk into additional cost, reduced productivity, rework, defects, coordination problems, and safety exposure. Recovery measures should therefore be planned and monitored rather than applied only through uncontrolled increases in manpower or working hours. The findings support recent literature on construction claims and project controls, which emphasizes timely notices, complete records, EOT evaluation, schedule analysis, and controlled recovery planning (Abdela et al., 2024; Ali et al., 2024; Azzam et al., 2025; Narayan et al., 2024; Younis et al., 2024). Recent studies also identify planning, resource, procurement, rework, and delay-control problems as important concerns in

project recovery (Kikwasi, 2023; Laroza, 2025; Pedron et al., 2025).

In answer to Research Problem 3, liquidated damages management has a strong perceived influence on contractor behavior, financial decisions, claims strategy, and schedule recovery. However, claims outcomes depend on timely notices, proper EOT submissions, schedule analysis, and complete supporting records. Liquidated damages may encourage recovery but do not guarantee timely completion and may create additional cost, quality, rework, coordination, and safety risks when acceleration is not properly controlled.

4.4 Stakeholder Relationships and Risk Allocation

Table 5 presents the six survey items assigned to Research Problem 4.

Table 5
Survey Results on Stakeholder Relationships and Risk Allocation

Item	Indicator	Weighted Mean	Interpretation
2.2	Fairness of LDs for delays outside the contractor's control	3.000	Moderate
2.3	Frequency of disputes or adversarial relationships	3.707	High
2.4	Contribution of LDs to stakeholder collaboration and project success	3.927	High
4.4	Frequency with which LDs strain stakeholder relationships	3.707	High
5.2	Possible effectiveness of alternative risk-allocation methods	3.683	High
5.3	Importance of shared stakeholder understanding	4.561	Very High

The perceived importance of a shared understanding of liquidated damages among owners, contractors, and consultants was Very High at 4.561. This was the highest individual weighted mean in the entire survey. The perceived contribution of LDs to stakeholder collaboration and project success was High at 3.927. The frequency of disputes or adversarial relationships was High at 3.707, and the frequency of strained stakeholder relationships was likewise High at 3.707. The perceived effectiveness of alternative risk-allocation methods was High at 3.683. However, the perceived fairness of LDs for delays outside the contractor's control was Moderate at 3.000.

The results show that liquidated damages may have both positive and negative implications for stakeholder relationships. They may support shared accountability and coordination, but they may also create conflict when delay responsibility is unclear or when the contractor believes that the delay was outside its control.

LDs Can Create Accountability or a Blame-Focused Environment. The sixth recurring theme showed that the effect of LDs on relationships depends on how they are administered.

Respondent 01, Question 4, described how formal notice, due process, and the contractor's recovery plan helped the parties reach an amicable resolution. In Questions 6 and 18, the same respondent identified early issue resolution, informal negotiation, clear communication, and collaborative contract administration as practices that help preserve cooperation.

Respondents 03 and 04, Question 7, observed that LDs could improve collaboration when the parties and affected trades worked toward the same completion target. Respondent 08, Question 7, stated that fairly structured and properly managed LDs can improve alignment and accountability.

Negative experiences were also reported. Respondent 02, Question 7, stated that vague or unfair LDs create mistrust and cause the parties to focus on assigning blame. Respondent 08, Question 6, described a tense principals' meeting involving several contractors that ended without a clear resolution because of weak records and conflicting interpretations.

Respondent 09, Questions 6 and 7, described tension involving client-caused and contractor-caused delays. Respondent 16, Question 14, stated that meetings became defensive, communication shifted from solving project problems to protecting claims, and trust weakened.

Respondent 23, Question 7, described LD pressure as creating a blame-focused environment after the critical path was affected. Respondent 24, Question 7, also observed greater friction when penalties became the main focus.

These contrasting experiences show that LDs do not automatically improve or damage relationships. Clear notice, due process, open communication, and early resolution may support accountability. Premature deductions, incomplete records, and one-sided interpretation may create defensive behavior and mistrust.

Fair Risk Allocation Requires Treatment of Owner-Caused, External, and Concurrent Delays. The seventh recurring theme showed that the fairness of LD implementation depends on proper delay attribution.

Respondent 08, Questions 4 to 6, described owner design changes, late finishes information, delayed access, weather effects, and EOT requests that were not properly processed. Respondent 09, Question 5, described delayed geotechnical testing that later required redesign, together with separate contractor delays.

Respondent 16, Question 5, reported late IFC drawings and delayed owner material approvals that affected critical-path work. Respondent 24, Question 5, described late design approvals and client changes that resulted in the review and reduction of the LD amount.

Respondent 23, Question 8, described concurrent delay involving contractor-delayed cabling and owner-delayed transformer delivery. The mixed responsibility weakened or neutralized the LD claim.

Respondent 16, Question 15, recommended that contracts should clearly state whether LDs are suspended, apportioned, shared, or maintained during concurrent delay. Respondent 50, Questions 2 and 5, stressed that weather, utility relocation, and right-of-way delays require proper documentation and approved time extensions before exemption from LDs.

These findings show that LDs should not be assessed only by comparing the original completion date with the actual completion date. The parties must first identify the delay event, determine its critical-path effect, evaluate the contractor's time entitlement, and separate contractor-responsible delay from owner-caused, external, or concurrent delay.

The findings support recent literature on contractual risk allocation and stakeholder relationships, which emphasizes balanced responsibility, documented decision-making, trust, and fair treatment of delay events (Gao et al., 2025; Kurukulasooriya et al., 2024; Setijanto et al., 2026; Zhang et al., 2021). The treatment of concurrent delay should also be supported by clear contract rules and a method that separates overlapping responsibility (Hajiashrafi et al., 2024; Huynh et al., 2022; Jagannathan et al., 2025).

In answer to Research Problem 4, liquidated damages implementation may support accountability and collaboration when the parties share the same understanding and the process is transparent. However, it may also create friction, blame, and mistrust when LDs are imposed without timely EOT decisions, sufficient records, or fair evaluation of owner-caused, external, and concurrent delays.

Table 6 summarizes the integration of the survey results and the seven recurring interview themes for Research Problems 2 to 4.

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Table 6
Integrated Survey and Written Interview Findings for Research Problems 2 to 4

Research Problem	Interview Theme	Main Supporting Survey Finding	Integrated Interpretation
Research Problem 2	Theme 1: LD rate may be clear while trigger and delay rules are unclear	Clause clarity was Moderate at 3.317, while the importance of wording to claim outcomes was Very High at 4.244	A complete LD clause must define completion, trigger points, EOT status, delay classifications, computation basis, rate, and cap
Research Problem 2	Theme 2: Communication and contract alignment are part of clause clarity	Familiarity was High at 3.951, but confidence in shared understanding of rights and obligations was Moderate at 3.244; the need for clearer guidelines was Very High at 4.366	Written clarity must be supported by pre-contract review, kick-off discussion, schedule alignment, and continuing communication
Research Problem 3	Theme 3: Documentation and EOT administration determine claims outcomes	LD-related claims were rated High at 3.610, while claims reaching litigation were Moderate at 3.195	Claims outcomes depend on notices, EOT submissions, schedules, correspondence, delay analysis, and supporting records
Research Problem 3	Theme 4: LDs influence contractor behavior but do not guarantee completion	The effect on project timelines and contractor behavior was Very High at 4.220, while contribution to on-time completion was High at 3.659	LDs encourage recovery measures and schedule attention, but they cannot remove delays outside the contractor's control or replace effective project management
Research Problem 3	Theme 5: Acceleration can transfer delay risk to cost, quality, and safety	Financial influence was High at 4.195, while effectiveness without harming quality or collaboration was High at 3.780	Recovery measures may improve progress but can introduce added cost, defects, rework, coordination gaps, and safety exposure
Research Problem 4	Theme 6: LDs can create accountability or a blame-focused environment	Shared understanding was Very High at 4.561; collaboration was High at 3.927; relationship strain and disputes were both High at 3.707	Fair and transparent administration may support accountability, while unclear or punitive administration may produce defensive behavior, blame, and mistrust
Research Problem 4	Theme 7: Fair risk allocation requires treatment of owner-caused, external, and concurrent delays	Fairness for delays outside contractor control was Moderate at 3.000, while alternative risk-allocation methods were High at 3.683	LD assessment should follow proper delay attribution and clear treatment of owner-caused, external, excusable, and concurrent delay

Overall, the integrated findings show that liquidated damages management is not limited to the application of a daily financial amount. It is a continuing contract-management process involving clause clarity, shared understanding, notices, EOT administration, schedule and delay assessment, supporting records, recovery planning, communication, and fair allocation of delay responsibility.

The central finding is that liquidated damages may support schedule discipline and accountability when they are clearly written and fairly administered. However, unclear completion requirements, weak

documentation, delayed EOT decisions, uncontrolled acceleration, and one-sided delay allocation may increase claims, project risks, and stakeholder conflict. These integrated findings also provide the basis for the proposed practical liquidated damages management process presented in Chapter 5 in response to Research Problem 5.

V. SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Summary of Findings

This study examined the perceived effects and practical influence of liquidated damages management on construction claims in the National Capital Region. It used a descriptive mixed-method research design with greater qualitative emphasis. Fifty qualified construction professionals were invited to participate, 41 completed the structured survey, and 16 of the survey respondents also submitted written answers to the semi-structured interview guide. The survey findings were summarized using descriptive measures, while the written interview responses were coded and consolidated into seven recurring themes.

The first finding concerns the profile of the respondents. Most survey respondents were 26 to 35 years old, representing 68.29% of the participants. Male respondents accounted for 63.41%, while female respondents accounted for 34.15%, and one respondent preferred not to state a gender. Most respondents had 6 to 15 years of construction experience, representing 65.85%. Engineers formed the largest professional group at 43.90%, followed by project managers at 24.39%. Other participants included owners, architects, a contracts manager, and professionals under other construction positions. These results provide the professional context of the participating respondents but are not statistically representative of all construction professionals in the National Capital Region.

The second finding concerns clause clarity, enforceability, and practical application. Respondents reported a High level of familiarity with the role of liquidated damages clauses, with a weighted mean of 3.951, and a High level of understanding of their financial implications, with a weighted mean of 4.024. However, perceived clause clarity in Philippine construction contracts was Moderate at 3.317. Confidence in shared stakeholder understanding of rights and obligations was Moderate at 3.244. The perceived importance of clause language to the frequency and outcome of claims was Very High at 4.244, while the perceived need for clearer language and guidelines was Very High at 4.366. The written interview findings showed that a clearly stated LD rate may still result in disputes when substantial completion, final completion, testing, turnover, the start and end of LD counting, the computation basis, the maximum cap, delay responsibility, and Extension of Time procedures are unclear. The findings also showed that written clarity must be supported by pre-contract review, project kick-off discussions, schedule alignment, and continuing communication among the parties.

The third finding concerns the claims process and project outcomes..The perceived effect of liquidated damages on project timelines and contractor behavior was Very High at 4.220. Their perceived influence on project financial outcomes was High at 4.195. The perceived effectiveness of liquidated damages in promoting timely completion was High at 3.610, while the frequency of LD-related construction claims was also High at 3.610. However, the frequency of LD claims resulting in legal disputes or litigation was Moderate at 3.195. The written interview findings showed that claim outcomes depend on timely notices, proper Extension of Time submissions, baseline and updated schedules, progress reports, requests for information, instructions, approvals, correspondence, and delay analysis. Possible LD exposure commonly encouraged contractors to add manpower, equipment, working hours, parallel crews, and recovery measures. These actions may improve progress, but uncontrolled acceleration may also increase cost, rework, punch-list items, coordination problems, quality concerns, and safety exposure. Liquidated damages therefore influence contractor behavior but do not guarantee completion within the required period.

The fourth finding concerns stakeholder relationships and risk allocation..The perceived importance of shared stakeholder understanding of liquidated damages was Very High at 4.561, which was the highest individual result in the survey..The perceived

contribution of liquidated damages to stakeholder collaboration and project success was High at 3.927..However, the frequency of disputes or adversarial relationships and strained stakeholder relationships was High at 3.707..The perceived fairness of liquidated damages for delays outside the contractor's control was Moderate at 3.000. The written interview findings showed that fair and transparent administration may improve accountability and coordination. In contrast, premature deductions, unresolved Extension of Time requests, incomplete supporting records, and one-sided allocation of delay may create defensive communication, blame, mistrust, and withheld payments. Fair risk allocation requires separate evaluation of contractor-caused, owner-caused, external, excusable, and concurrent delays before liquidated damages are assessed.

The fifth finding concerns the proposed practical liquidated damages management process. Based on the integrated findings of Research Problems 2 to 4, the study identified the need for a structured process covering contract drafting, pre-construction alignment, schedule confirmation, delay notice and documentation, mitigation and recovery, Extension of Time evaluation, delay-responsibility assessment, LD computation, negotiation, and project closeout

5.2 Conclusions

The profile of the respondents provided suitable professional context for the descriptive purpose of the study. The participants represented different construction roles and levels of experience associated with project implementation, supervision, management, ownership, contracts, and claims. However, because purposive sampling was used, the results describe the assessments and professional experiences of the participating qualified construction professionals and cannot be statistically generalized to the entire construction industry of the National Capital Region.

Liquidated damages clauses are more likely to be understood, enforced, and applied consistently when their complete requirements are clearly defined. A stated daily rate alone is insufficient. The contract should also clearly state the required completion point, commencement and end of LD counting, computation basis, maximum cap, Extension of Time procedure, excusable delays, delay classifications, and treatment of concurrent delay. Practical application also depends on whether these provisions are jointly reviewed and consistently explained to the project stakeholders.

Liquidated damages management has a strong perceived influence on contractor behavior, claims strategy, schedule recovery, and project financial decisions. However, the outcome of an LD-related claim depends on timely notices, proper Extension of Time submissions, schedule and delay assessment, and complete supporting records. Liquidated damages may encourage closer monitoring and recovery measures, but they do not replace proper planning, procurement, coordination, and contract administration. They also do not automatically guarantee timely completion. When acceleration is not properly planned and controlled, schedule pressure may be transferred into added cost, defects, rework, coordination problems, quality concerns, and safety exposure.

Liquidated damages may support stakeholder accountability and project coordination when the parties share the same understanding and the process is transparent, documented, and fair. They may also weaken stakeholder relationships when imposed before Extension of Time requests and delay responsibility are properly evaluated. Overall, effective liquidated damages management is not limited to imposing a financial amount. It is a continuing contract-management process involving clear drafting, schedule control, timely notices, Extension of Time evaluation, complete records, controlled recovery planning, communication, and fair allocation of contractor-caused, owner-caused, external, and concurrent delays.

The integrated findings support the use of a structured liquidated damages management process from contract drafting to project closeout. The process emphasizes clear contract provisions, timely Extension of Time evaluation, proper delay assessment, complete documentation, transparent LD computation, and fair resolution of delay responsibility.

5.3 Recommendations

Based on the findings and conclusions of the study, the following recommendations are presented:

1. Improve the structure of liquidated damages clauses. Contracts should clearly define substantial completion, final completion, sectional completion when applicable, the LD trigger date, the rate, the basis of computation, the maximum cap, and the point when LD counting ends. The clause should also state the treatment of excusable, compensable, non-excusable, owner-caused, external, and concurrent delays.

2. Conduct pre-contract and pre-construction alignment. Owners, consultants, contractors, planners, quantity surveyors, contracts personnel, and key subcontractors should jointly review the liquidated damages provisions before project implementation. The review should cover completion milestones, Extension of Time procedures, notice periods, approval responsibilities, supporting documents, and possible delay examples.

3. Establish a clear Extension of Time and delay-claims procedure. The contract should identify the required notice period, submission requirements, responsible reviewing authority, method of showing critical-path effect, and period for issuing a written decision. Pending Extension of Time requests should be evaluated before the final liquidated damages assessment.

4. Strengthen schedule control and supporting records. Projects should maintain an approved baseline schedule, regular schedule updates, a delay-event register, progress reports, notices, requests for information, instructions, approvals, variation records, correspondence, and Extension of Time documents. The parties should receive early notice of possible LD exposure rather than learning of the deduction only during final billing or project closeout.

5. Use controlled recovery planning. Before increasing manpower, shifts, equipment, or parallel activities, the contractor should prepare a recovery plan for review by the project team. The plan should consider productivity, procurement, access, trade coordination, cost, quality-control inspections, testing, safety requirements, and the possible increase in rework or punch-list items.

6. Apply liquidated damages through a fair and transparent procedure. The contractor should receive notice of the possible assessment and a reasonable opportunity to provide records, explain the delay, and perform mitigation. Liquidated damages should be computed only after valid Extension of Time entitlement and delay responsibility have been evaluated.

7. Improve stakeholder communication and early issue resolution. Project meetings, documented negotiations, and other contract-allowed early dispute-resolution methods should be used before the issue develops into withheld payments, formal claims, arbitration, or litigation. The computation method and supporting delay assessment should be made understandable to the concerned parties.

8. Apply balanced risk allocation and study supporting mechanisms. Contractor-caused delay should be separated from owner-caused, external, excusable, and concurrent delay. Performance bonds, incentives, milestone-based liquidated damages, or actual loss-based recovery may be considered as supporting mechanisms where appropriate, but their purposes and procedures should be clearly distinguished from liquidated damages.

9. Support professional training and industry guidance. Construction organizations, government agencies, industry groups, and academic institutions may develop model provisions, practical guidelines, and training on liquidated damages, Extension of Time administration, schedule analysis, supporting records, and fair delay assessment.

10. Conduct further research. Future studies may include more respondents, other Philippine regions, different project types, public and private projects, and different standard forms of contract. Researchers may also review actual contract documents, Extension of Time records, delay analyses, claims files, settlements, arbitration decisions, or court cases when access and confidentiality requirements allow.

In response to Research Problem 5, the study proposes the practical liquidated damages management process shown in Table 7.. The process treats liquidated damages management as a continuing activity from contract drafting to project closeout rather than as a deduction applied only after delayed completion.

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Table 7
Proposed Practical Liquidated Damages Management Process

Stage	Main Responsible Parties	Key Documents or Records	Expected Control Action	Expected Output
1. Contract Drafting and Clause Review	Owner, designer, consultant, legal or contracts personnel	Draft contract, conditions of contract, completion requirements, LD schedule	Define completion, LD trigger, rate, computation basis, cap, exceptions, delay classifications, EOT procedure, and concurrent-delay treatment	Clear and complete LD provision
2. Pre-Construction Alignment	Owner, consultant, contractor, planner, quantity surveyor, key subcontractors	Signed contract, project schedule requirements, notice procedure, document-control procedure	Jointly review LD, EOT, notice, schedule, approval, documentation, and dispute procedures	Shared stakeholder understanding
3. Schedule and Milestone Confirmation	Contractor, consultant, owner, planning team	Approved baseline CPM schedule, milestone schedule, calendar, work breakdown structure	Confirm contractual completion dates, sectional milestones, critical activities, and progress-measurement basis	Common schedule and completion basis
4. Delay-Event Notice and Documentation	Affected party, contractor, consultant, owner	Delay notice, daily reports, photographs, RFIs, instructions, correspondence, delay register	Give timely notice, identify the event and affected work, and maintain supporting records	Recorded and traceable delay event
5. Mitigation and Recovery Planning	Contractor, consultant, owner, project controls team	Mitigation plan, recovery schedule, resource plan, procurement plan, safety and quality controls	Review reasonable mitigation and recovery measures together with cost, quality, safety, and coordination risks	Controlled project recovery action
6. EOT Submission and Evaluation	Contractor, consultant, owner, planner or claims personnel	EOT request, updated schedules, time-impact analysis, notices, supporting records	Evaluate entitlement, critical-path effect, compliance with notice requirements, and completeness of documents	Written EOT recommendation or decision
7. Delay-Responsibility Assessment	Owner, consultant, contractor, claims or planning personnel	Approved and rejected EOT decisions, delay analysis, responsibility matrix, concurrent-delay assessment	Separate contractor-caused, owner-caused, external, excusable, and concurrent delay	Fair allocation of delay responsibility

Stage	Main Responsible Parties	Key Documents or Records	Expected Control Action	Expected Output
8. LD Computation and Verification	Owner, consultant, quantity surveyor, contracts personnel, contractor	Contract LD formula, revised completion date, completion certificate, delay assessment, payment records	Compute only the contractor-responsible delay using the correct rate, basis, period, and cap	Transparent and verifiable LD amount
9. Negotiation and Issue Resolution	Owner, consultant, contractor, authorized representatives	LD notice, contractor response, meeting minutes, computation sheets, settlement proposals	Allow explanation, correction, negotiation, and contract-allowed early dispute resolution before escalation	Resolved or clearly defined disputed amount
10. Final Decision, Deduction, and Closeout	Owner, consultant, contractor, contracts and finance personnel	Final decision, payment certificate, deduction record, settlement agreement, closeout report	Record the final decision, reconcile deductions, preserve the audit trail, and document lessons learned	Orderly financial and contractual closeout

The proposed process is based on the combined survey and written interview findings. It is presented as a practical management recommendation and not as a mandatory legal procedure or a statistically tested model. Its main principle is that liquidated damages should be assessed only after the completion obligation has been defined, the delay event has been documented, the Extension of Time entitlement has been decided, and the period properly attributable to the contractor has been identified.

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