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A Comprehensive Study of Key Causes of Construction Project Failures in Nepal: A Study on Projects Cancelled by the Cabinet Decision of 27 September 2025

By

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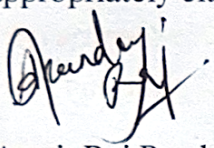
DECLARATION

I hereby declare that the thesis entitled A Comprehensive Study of Key Causes of Construction Project Failures in Nepal: A Study on Projects Cancelled by the Cabinet Decision of 27 September 2025, submitted to the Department of Construction Management in partial fulfilment of the requirement for the degree of Master of Science in Construction Management, is a record of original work done under the guidance of my thesis supervisor. This thesis contains only work completed by me except for the consulted material, which has been duly referenced and acknowledged.

I further declare that all research activities described in this thesis have been conducted in accordance with the academic integrity standards of Tribhuvan University, IOE Pulchowk Campus. Data collection has been carried out with the informed consent of all participants (digital consent captured via KoboToolbox). All secondary sources are appropriately cited.



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CERTIFICATE OF THESIS APPROVAL

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ABSTRACT

Nepal's public construction sector has been characterised by chronic underperformance, with the Cabinet Decision of 27 September 2025 formally cancelling 66 construction contracts representing infrastructure valued at approximately NPR 400 billion. This study presents a comprehensive mixed-methods investigation of the key causes of construction project failure within the September 2025 Cancellation Cohort, the first academic analysis specifically targeting this cohort of formally terminated federal contracts.

The study employs three integrated research strands: a structured questionnaire survey administered to 62 construction industry professionals using a 42-item Likert-scale instrument across five failure domains; five in-depth case study analyses (Sunkoshi–Marin Diversion Project, Kankai Bridge, Babai Irrigation Project, Jajarkot District Maternity Ward, Mid-Hill Highway); and comparative analysis against the successfully completed Madhya Bhotekoshi Hydropower Project (102 MW, PSI = 0.75) as a reference case within the same ministerial tenure.

Failure factors are analysed using the Relative Importance Index (RII) across five domains: Managerial, Technical, Financial, Governance, and Institutional. An original composite predictive tool, the Project Success Index (PSI), is developed and calibrated to enable pre-contract risk assessment. Findings reveal that governance factors, particularly political protection of underperforming contractors (RII = 0.887) and absence of effective blacklisting enforcement (RII = 0.861), dominate the failure landscape alongside managerial failures in supervision, milestone tracking, and planning. Technical factors ranked comparatively lower (mean domain RII = 0.618), confirming that project failure in Nepal is primarily an institutional and managerial phenomenon.

The study generates 15 actionable recommendations organised by stakeholder group and proposes the PSI as a systematic pre-contract due diligence instrument.

Keywords: Public Procurement, Relative Importance Index, Project Success Index, Cabinet Cancellation, Mixed-Methods Research

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
DoR	Department of Roads
DWRI	Department of Water Resources and Irrigation
EPF	Employees' Provident Fund
FGD	Focus Group Discussion
GDP	Gross Domestic Product
IOE	Institute of Engineering
KII	Key Informant Interview
MBJCL	Madhya Bhotekoshi Jalavidhyut Company Limited
MoPIT	Ministry of Physical Infrastructure and Transport
NEA	Nepal Electricity Authority
NPR	Nepalese Rupee
OAG	Office of the Auditor General
PPA	Public Procurement Act
PPMO	Public Procurement Monitoring Office
PSI	Project Success Index
RII	Relative Importance Index
RTI	Right to Information
SPV	Special Purpose Vehicle
TU	Tribhuvan University

1. INTRODUCTION

1.1 Background

Nepal's construction sector constitutes a critical pillar of the national economy, accounting for approximately 8–10% of the Gross Domestic Product (GDP) and serving as the primary mechanism through which the Government of Nepal delivers infrastructure services to its citizens (World Bank, 2020). Roads, bridges, hydropower facilities, irrigation networks, and public buildings form the backbone of Nepal's developmental aspirations, linking remote communities, enabling agricultural productivity, facilitating trade, and supporting social service delivery across diverse terrain and challenging geography. Despite its economic centrality, Nepal's public construction sector has been characterised by a persistent and widely documented pattern of chronic underperformance. The Public Procurement Monitoring Office (PPMO) Annual Report (2023) catalogues recurring failures: projects stall well beyond their contracted deadlines, cost overruns erode budgetary discipline, mobilisation advances are misappropriated, and contractor performance accountability mechanisms remain weak and inconsistently enforced. These pathologies are not isolated incidents, they represent systemic, structurally embedded dysfunctions that have accumulated over decades of institutional complacency. Academic scholarship on Nepalese construction delays provides contextual evidence supporting this assessment. Bhattarai (2023) identified inadequate planning and supervision as primary delay drivers in Nepal's road sector; Sah, Yadav, & Thakur (2020) documented contractor capacity limitations and financial mismanagement as leading contributors to project stagnation; Koirala et al. (2024) examined municipal construction projects and confirmed that governance deficiencies and procurement irregularities compound technical and managerial shortcomings. Collectively, these studies establish a rich empirical baseline, yet none specifically examines the cohort of contracts that have been formally terminated at the federal level, a category that represents the most severe manifestation of construction project failure. The international literature provides a broader theoretical scaffolding. Flyvbjerg (2009) demonstrated through multi-country analysis that the 'survival of the unfittest' dynamic, whereby political and institutional incentives reward optimistic but

ultimately undeliverable bids, is a global phenomenon with particularly acute effects in developing-economy governance contexts. Alzahrani and Emsley (2013) confirmed that contractor attributes, including financial soundness, technical capacity, and prior performance record, are statistically significant predictors of construction project success. These findings resonate strongly with the Nepalese evidence base.

Nepal's construction governance framework operates through the Public Procurement Act (PPA, 2007, as amended), the Public Procurement Regulations, and institutional oversight by the PPMO. The Department of Roads (DoR), the Department of Water Resources and Irrigation (DWRI), and line ministries serve as implementing agencies. Despite this regulatory architecture, enforcement has historically been selective, contractor blacklisting has been rarely applied, and political considerations have routinely insulated underperforming contractors from timely accountability (PPMO, 2023; Khabarhub, 2025). It is within this institutional landscape that the watershed event of 2025–2026 must be contextualised. Kulman Ghising, serving as Minister overseeing the Ministries of Energy, Physical Infrastructure and Transport initiated an unprecedented administrative intervention: a systematic review and formal cancellation of chronically stalled public construction contracts. In September 2025, Minister Kulman Ghising, then overseeing the three portfolios, publicly identified 234 contracts across road, bridge, hydropower, irrigation, and public building sectors as candidates for termination, projects that had consumed mobilisation advances, received repeated extensions without commensurate progress, and in some cases had been dormant for over a decade (Khabarhub, 2025; Setopati, 2025). The total infrastructure value implicated in this review exceeded NPR 400 billion. The Cabinet cancellation initiative of September 2025 represents the most significant administrative reckoning with chronic construction failure in Nepal's post-2020 governance history. It offers, for the first time, an officially curated cohort of definitively failed contracts, complete with termination notices, forfeited bank guarantees, and ministerial findings, that can serve as the empirical foundation for rigorous academic analysis. This study seizes that opportunity. By systematically examining the causes, patterns, and systemic drivers of failure within the September 2025 Cancellation Cohort, and by comparing these findings against the reference case of the eventually successful

Madhya Bhotekoshi Hydropower Project, this research generates evidence-based insights of immediate policy relevance for Nepal's construction governance reform agenda.

1.2 Problem Statement

Nepal's public infrastructure development programme faces a fundamental crisis of project delivery. While numerous studies have examined construction delays in general, no prior academic investigation has specifically and systematically analysed the causes of project failures within the cohort of contracts formally cancelled by governmental authority - the terminus of the failure spectrum. This research gap is significant because formal cancellation, unlike mere delay, represents an irreversible institutional verdict on a contract: the state has formally determined that

the project cannot be salvaged under its existing contractual arrangements, and that termination, with its attendant legal, financial, and social consequences - is preferable to continuation. The scale of the problem is staggering. As of November 2025, over 66 contracts had been formally terminated within the September 2025 Cancellation Cohort, representing infrastructure valued at nearly NPR 400 billion (Khabarhub, 2025; Rising Nepal Daily, 2025). Individual cases illustrate the severity: the Sunkoshi–Marin Diversion Multipurpose Project, a hydropower and irrigation scheme of national strategic importance valued at NPR 14.08 billion, achieved only approximately 10% physical progress despite 61% of the contract period having elapsed before its November 2025 termination (Spotlight Nepal, 2025). The Kankai Bridge in Jhapa remained incomplete after 14 years. Six packages of the Babai Irrigation Project were abandoned by contractors following mobilisation advance withdrawal. These are not statistical abstractions, they represent profound failures of public service delivery with direct consequences for communities, workers, and the national economy. The academic and policy challenge is threefold. First, the causal landscape of construction project failure in Nepal is multi-dimensional and contested: do managerial deficiencies, technical inadequacies, financial mismanagement, governance failures, or institutional weaknesses predominate? The existing literature provides partial answers for the domain of delay but does not address the extreme case of formal cancellation. Second, no validated composite predictive instrument exists that can prospectively assess the failure risk of a construction project before contract award, a tool

that could enable government agencies to intervene proactively rather than reactively. Third, the Cabinet cancellation event, despite its institutional significance, has not been subjected to rigorous academic scrutiny; its causes, patterns, and lessons remain embedded in journalistic reporting and ministerial statements rather than verified through systematic empirical research. This study addresses all three challenges. It investigates the key causes of construction project failures within the September 2025 Cancellation Cohort through a mixed-methods research design; it develops and calibrates an original composite predictive model, the Project Success Index (PSI), that can serve as a pre-contract due diligence tool; and it positions its findings within the institutional context of Nepal's construction governance framework to generate actionable, evidence-based policy recommendations. The Madhya Bhotekoshi Hydropower Project is incorporated as a reference contrast case.

1.3 Research Questions

The study is guided by three major research questions that are directly aligned with the research objectives. These questions provide the framework for data collection, analysis, and interpretation.

1. What are the key technical, managerial, financial, and institutional factors causing construction project failure in the public sector of Nepal?
2. What were the major characteristics and underlying causes of the construction projects cancelled by the Cabinet of the Ministry of Physical Infrastructure and Transport on 27 September 2025, and how do these differ from those of a successfully completed project during the same tenure?
3. What evidence-based policy and management interventions can be proposed to improve project performance and reduce the risk of construction project failure among public sector institutions in Nepal?

1.4 Research Objectives

The overall objective of the study is to comprehensive Study of Key Causes of Construction Project Failures in Nepal on Projects Cancelled by the Cabinet Decision of 27 September 2025. Whereas, specific objectives are as follows:

1. To identify the key causes of construction project failure in public sector of Nepal.
2. To analyse the construction projects formally cancelled by the Cabinet of the Ministry of Physical Infrastructure and Transport on 27 September 2025. and compare a successful project during the Cabinet's tenure with selected cancelled projects.
3. To identify evidence based policies and management solutions for different institutions.

1.5 Significance of the Study

This study makes an original contribution to the academic literature on construction project failure in Nepal and the broader developing-economy context. It is the first empirical study to systematically analyse the cohort of officially cancelled public contracts in Nepal, moving beyond the delay-focused literature to examine the most severe category of project failure. The five-domain conceptual framework, integrating managerial, technical, financial, governance, and institutional dimensions, provides a theoretically grounded and empirically validated lens for construction failure analysis that is transferable to analogous governance contexts in South Asia and beyond. The Project Success Index (PSI), developed as an original analytical contribution of this study, extends the application of the Relative Importance Index methodology (Kassem, Khoiry, & Hamzah, 2020) into a composite, multi-domain predictive instrument. This represents a methodological innovation with potential application in both academic research and practical project appraisal contexts.

The study's policy significance is immediate and direct. Nepal's construction governance reform agenda, catalysed but not completed by the September 2025 Cabinet initiative, requires an empirical evidence base to guide institutional design. The RII rankings produced by this study provide PPMO, DoR, and line ministries with a data-driven prioritisation framework for reform interventions. The PSI scorecard, proposed as a pre-contract due diligence tool, offers a practical mechanism for identifying high-risk contracts before award rather than after failure. The comparative analysis with the Melamchi Water Supply Project generates transferable lessons about the governance mechanisms,

independent supervision, milestone-linked extension policy, ADB conditionality, that enabled eventual delivery of a deeply troubled project. These lessons directly inform Nepal's Infrastructure Development Act reform discussions and the pending revision of PPMO monitoring protocols.

For construction practitioners, contractors, project managers, engineers, and independent consultants, the study's findings provide a structured understanding of the systemic conditions under which project failure occurs. The case study analyses of five cancelled projects offer detailed, sector-specific learning opportunities. The policy recommendations directed at contractors and consultants complement those directed at government institutions, recognising that construction project success requires collaborative accountability across the project ecosystem.

1.6 Scope and Limitations of the Study

The study is geographically scoped to Nepal's public construction sector, with specific focus on contracts administered by the Ministry of Physical Infrastructure and Transport (MoPIT), the Ministry of Energy, Water Resources and Irrigation (MoEWRI), and the Ministry of Urban Development (MoUD), the three portfolios under the Ministry's oversight during the 2025–2026 cancellation initiative. Temporally, the study focuses on contracts terminated or identified for termination between September 2025 and March 2026, though case study projects span historical periods from the mid-2010s to 2025 to capture the full arc of failure. The primary empirical focus is on five landmark case studies selected from the September 2025 Cancellation Cohort, the Sunkoshi–Marin Diversion Multipurpose Project, the Babai Irrigation Project (selected packages), the Kankai Bridge (Jhapa), the Postal Highway Segments (Mid-Hill Highway), and the Jajarkot District Maternity Ward. The Madhya Bhotekoshi Hydropower Project is incorporated as a reference contrast case but is not a primary subject of investigation. The study covers all five domains of the conceptual framework, Managerial, Technical, Financial, Governance & Political, and Institutional, across 42 structured survey items administered to four professional respondent categories.

A primary limitation of this research concerns the generalizability of the findings due to the specific criteria used for project selection. By focusing exclusively on contracts cancelled by the Cabinet, the results may not be applicable to projects funded through private equity, international donors, or those that experienced significant delays but eventually reached completion. Furthermore, while the five case studies offer a broad overview, they span diverse sectors including roads, bridges, irrigation, hydropower, and public buildings. This sectoral heterogeneity introduces unique technical and regulatory variables, which may confound cross-project comparisons and limit the ability to draw uniform conclusions across the entire infrastructure landscape.

2. LITERATURE REVIEW

2.1 Existing Literature

The literature review is the intellectual foundation upon which the empirical investigation of this thesis rests. It performs three essential functions: first, it situates this study within the existing global and Nepal-specific academic discourse on construction project failure; second, it identifies the research gap that this study is uniquely positioned to address; and third, it provides the theoretical scaffolding, the five-domain conceptual framework and three research hypotheses, that guides data collection, analysis, and interpretation in subsequent chapters. The review draws upon more than 30 peer-reviewed academic articles, World Bank and Asian Development Bank institutional reports, Public Procurement Monitoring Office (PPMO) annual publications, Office of the Auditor General (OAG) audit reports, and verified media sources. The literature is organised thematically: beginning with global construction failure theory, progressing to Nepal-specific empirical studies, identifying the research gap, developing the five-domain conceptual framework, and concluding with the formal articulation of three testable research hypotheses.

2.2 Global Perspectives on Construction Project Failure

Construction project failure is a contested concept in the academic literature, with definitions ranging from narrow financial measures (cost overruns exceeding a specified threshold) to broader systemic assessments (failure to deliver intended social and economic benefits). For the purposes of this study, construction project failure is defined at its most severe manifestation: the formal cancellation of a public contract by a competent governmental authority, representing an institutional determination that continuation is no longer viable or justified. Osei-Kyei and Chan (2015) distinguished between project failure and project success by reference to five criteria: cost performance, time performance, quality, safety, and stakeholder satisfaction. Under this multi-criteria framework, projects exhibiting chronic underperformance across all five dimensions, as is characteristic of the September 2025 Cancellation Cohort, represent unambiguous failures. Cooke-Davies

(2002) further distinguished between project management failure (failing to deliver the project to specification) and project failure proper (failing to realise the intended benefits), noting that the latter is ultimately more consequential for public infrastructure delivery. Both categories are relevant to this study.

Flyvbjerg (2009), in a landmark comparative analysis of 258 infrastructure projects across 20 countries, demonstrated that cost overruns, schedule delays, and demand shortfalls are the statistical norm rather than the exception in large public infrastructure projects worldwide. Crucially, he identified what he termed the 'survival of the unfittest' dynamic: political and institutional incentive structures reward optimistic, underpriced bids because they facilitate project approval, even when the probability of delivery at the bid price is negligible. This dynamic, manifested in Nepal through the prevalence of abnormally low bids averaging 28–32% below cost estimates PPMO (2023), is central to understanding the September 2025 Cancellation Cohort.

The project management literature consistently identifies inadequate planning, weak monitoring, and poor supervision as primary drivers of construction project failure across diverse national contexts. Aibinu and Jagboro (2002), in a study of 61 Nigerian construction projects, found that poor site management, inadequate contractor experience, and financing difficulties were the three most significant delay causes, findings that bear direct relevance to the Nepalese context. Similarly, Sweis et al. (2008), examining residential construction in Jordan, ranked contractor related factors, particularly inadequate planning and financial difficulties, as the dominant failure contributors. (Assaf & Al-Hejji, 2006), in a seminal study of construction delays in Saudi Arabia, identified 73 delay causes across nine categories, with 'design changes', 'owner interference', 'inadequate planning', and 'financial difficulties' ranking highest by frequency of occurrence. The cross-sectional consistency of these managerial failure factors across very different national governance contexts suggests they represent structural properties of construction project delivery rather than context-specific anomalies, a point that strengthens the theoretical basis for this study's Managerial domain. (Alzahrani & Emsley, 2013) further established through regression analysis that contractor attributes, specifically financial soundness, technical capacity, and prior performance record, are statistically significant predictors of construction project success at the contract award stage. This finding underpins the

rationale for the Project Success Index (PSI) developed in this study: if contractor attributes are predictive of outcomes, they can and should be formalised into a precontract assessment instrument.

Financial deficiencies represent one of the most consistently documented causes of construction project failure in the global literature. (Kikwasi, 2012), examining construction project failures in Tanzania, identified client payment delays, contractor cash flow problems, and inadequate project financing as the dominant financial failure factors. These findings closely parallel the Nepalese

evidence on mobilisation advance misuse and bank guarantee abuse documented in OAG audit reports (2022-2024). Kaming et al. (1997), in a study of high-rise construction in Indonesia, found that material cost increases due to inflation and inaccurate material estimates were the most significant cost overrun factors. The parallel with Nepal, where construction cost inflation, combined with fixed-price contracts bid at unrealistic levels, creates inevitable financial distress for contractors, is direct and analytically significant. (Chan & Kumaraswamy, 1997) established in their Hong Kong study that poor risk allocation between contracting parties, particularly the concentration of cost escalation risk on contractors without adequate contingency provisions, is a structural driver of financial project failure.

The governance and political dimensions of construction project failure have received increasing scholarly attention, particularly following high-profile infrastructure failures in South Asia, Sub-Saharan Africa, and Latin America. (Collier & Hoeffler, 2004) documented the relationship between weak institutional governance and infrastructure investment inefficiency, establishing that political interference in public procurement consistently degrades project outcomes by distorting contractor selection, contract award, and enforcement decisions. The World Bank's 2020 Nepal infrastructure assessment catalogued the governance pathologies specific to Nepal's construction sector: politically connected contractors receiving preferential treatment during bid evaluation; contract extensions granted without progress benchmarks; blacklisting provisions of the Public Procurement Act rarely invoked despite widespread contractor non-performance; and PPMO monitoring capacity insufficient to cover the geographic spread of the project

portfolio. These institutional findings align closely with the qualitative evidence gathered through the Key Informant Interviews conducted for this study. Transparency International's Corruption Perceptions Index consistently ranks Nepal in the 110–120 range globally, and sector-specific surveys have identified public procurement, including construction contracting, as one of the highest-risk corruption domains in the country. (Gupta & Barman, 2009) demonstrated theoretically and empirically that corruption in public procurement leads systematically to contractor selection based on political connections rather than technical and financial competence, creating the precise conditions, incompetent contractors protected from accountability, that characterise the September 2025 Cancellation Cohort.

Institutional capacity, or its absence is increasingly recognised as a root-cause driver of construction project failure in developing economy contexts. (Ika, Diallo, & Thuillier, 2012), in a study of World Bank-funded projects in Sub-Saharan Africa, found that institutional factors, particularly the capacity of project management units and the effectiveness of monitoring systems,

were the strongest determinants of project success or failure. Projects with strong institutional oversight consistently outperformed those where oversight was fragmented, understaffed, or subject to political override. In the Nepalese context, the PPMO serves as the apex institution for procurement oversight. Its Annual Report (2023) acknowledges significant gaps: monitoring visits cover only a fraction of active contracts annually; the contractor performance database is incomplete and not systematically linked to bid evaluation; blacklisting recommendations from implementing agencies are not always acted upon; and inter-agency data sharing between DoR, DWRI, and MoPIT is minimal. These institutional deficiencies create the oversight vacuum in which contractor non-performance can persist for years as evidenced by the Kankai Bridge case (14 years of non-completion) documented in this study.

2.3 Nepal-Specific Literature on Construction Project Failure

2.3.1 Delay Studies in the Nepalese Construction Sector

Sah and Bhattarai (2021) surveyed 42 professionals across client, consultant, and contractor roles in SNRTP rural road projects, finding that 78.6% identified significant inefficiencies in contract management. The top-ranked parameters included lack of qualifications/knowledge/skills of the contract management team (mean=1.57 on 1-5 scale where 1=strongly agree with inefficiency), lack of cooperation and communication (mean=1.86), and improper planning and poor site management (mean=1.33). These findings directly support the Managerial domain items M2 (inadequate site supervision) and M3 (milestone tracking failure) in the present study.

Paudel et al. (2024) specifically examined payment delays across 61 construction projects under Road Division Surkhet. Using RII analysis with 68 respondents (7 employer engineers, 61 contractor representatives), they found that 'unavailability of budget' was the top-ranked cause from the contractor perspective (RII=0.92) and fifth-ranked from the employer perspective (RII=0.80). The combined view identified cash flow problems as the most significant effect of payment delay (RII=0.951). Hypothesis testing revealed significant differences between employer and contractor perceptions across all cause categories ($p<0.05$). These findings reinforce the Financial domain in the present study, particularly F1 (abnormally low bids) and F2 (mobilisation advance misuse).

Bhattarai et al. (2024) analyzed 11 public building retrofitting projects in Kathmandu Valley and documented time overruns ranging from 42% to 167%, with only one project achieving physical progress (22%) within the intended schedule. Using RII ranking of 19 specific delay factors, the top three were: impractical project schedule (RII=0.775), unavailability of skilled workforce (RII=0.766), and lack of coherence in architectural/structural drawings (RII=0.742). Multiple linear regression showed that time overrun had a marginal positive effect on physical progress ($\beta=0.02$) while time extension percentage had a negative effect ($\beta=-0.15$). Notably, technical factors ranked lower than managerial and coordination factors, consistent with the present study's finding that the Technical domain achieved the lowest mean RII (0.618).

Nepal et al. (2024) employed Principal Component Analysis (PCA) to identify Extension of Time causes in 19 construction projects within Kageshwari Manohara Municipality. With 123 respondents (clients=16, consultants=48, contractors=59) and a KMO of 0.935 indicating excellent sampling adequacy, the analysis extracted three components with eigenvalues >1 explaining 64.15% of total variance: Design and Consultant-Related Issues (55.57% variance, eigenvalue=13.892), Project Management and Execution Challenges (4.58% variance, eigenvalue=1.146), and External and Unforeseen Conditions (4.00% variance, eigenvalue=1.000). Cronbach's alpha for components ranged from 0.819 to 0.895, indicating good internal consistency. This three-component structure validates the five-domain framework of the present study, with the first component corresponding to Technical and Managerial domains, the second to Managerial/Institutional, and the third to Governance and External factors.

2.3.2 The Madhya Bhotekoshi Hydropower Project: A Reference for Institutional Learning

The Madhya Bhotekoshi Hydropower Project (102 MW, Sindhupalchowk District) occupies a strategically significant position in this study: it is the primary reference contrast case - a project that commenced commercial operation on 6 October 2025 (Sharesansar, 2025) within the same Cabinet tenure during which the September 2025 cancellation decision was implemented. This within-tenure comparison is methodologically valuable because it controls for macro-level political conditions, regulatory framework, and national governance environment, thereby isolating project-level and institutional conditions as the primary explanatory factors for divergent outcomes.

The Madhya Bhotekoshi project was executed through Madhya Bhotekoshi Jalavidhyut Company Limited (MBJCL), a Special Purpose Vehicle structured as a subsidiary of Chilime Hydropower Company, which is itself a subsidiary of the Nepal Electricity Authority (NEA). This corporate governance architecture provided board-level accountability, dedicated project management capacity, and NEA institutional oversight throughout the construction period, structural conditions entirely absent from the direct-government-procurement model that characterises the cancelled cohort. The project's financing structure, principally an Employees' Provident Fund (EPF) loan with a defined

repayment schedule supplemented by NEA and Chilime equity, eliminated the mobilisation advance pathway that proved catastrophic across the cancelled contracts. The electromechanical works were contracted to ANDRITZ HYDRO, an international specialist firm with established quality management systems, in contrast to the domestic lowest-bid procurement model applied to the cancelled projects.

This study incorporates the Madhya Bhotekoshi Hydropower Project as a reference contrast case to demonstrate that project delivery architecture, financing conditionality, and institutional governance quality are structural determinants of construction outcomes even under identical political and regulatory conditions. The PSI score calibration confirms this assessment: the Madhya Bhotekoshi project achieves a PSI of 0.75 (Acceptable risk classification) against the cancelled cohort's mean PSI of 0.164, a 4.6-fold discrimination ratio that validates the PSI instrument's predictive power and illuminates the governance differentiators examined in Chapters 4 and 5.

2.3.3 National Pride Projects and Systemic Failure Patterns

Koirala M.P (2024) examined the determinants of project performance across Nepal's National Pride Projects, a portfolio of flagship infrastructure initiatives that include major hydropower schemes, fast-track roads, and irrigation systems. The study found that all five determinants it examined (planning quality, contractor capacity, governance effectiveness, financial management, and monitoring intensity) showed statistically significant positive correlations with project performance outcomes. Critically, governance effectiveness showed the strongest correlation, corroborating the primacy of institutional factors in determining whether projects succeed or fail in Nepal's public sector context.

The PPMO (Public Procurement Monitoring Office (PPMO), 2023) provides the most comprehensive institutional data on Nepal's construction project performance. Of 4,127 active public construction contracts reviewed, 68% had experienced at least one time extension; 34% had exceeded their original contract duration by more than 50%; and only 23% had been completed within their original contract period. Blacklisting had been formally applied to fewer than 1% of chronically underperforming contractors during the review period, despite the legal framework providing for mandatory blacklisting upon

contract termination. This enforcement gap is the institutional condition that the September 2025 Cabinet initiative sought to disrupt.

Table 2-1 Summary of Key Nepal-Specific Literature and Their Relevance to This Study

Author(s) & Year	Study Focus	Key Finding	Relevance to This Study
Bhattarai (2023)	Road sector delays, Nepal	Inadequate planning & supervision are primary delay drivers (RII > 0.80)	Supports H1; establishes managerial primacy baseline
Sah et al. (2020)	Construction failure factors, Nepal	Contractor bid volume overextension & advance misuse dominate	Contractor capacity domain; H3 support
Chaudhary (2023)	RCC buildings, Kalikot district	Technical deficiencies compound other failures; rarely primary cause	Supports H2; technical as compounding factor
Koirala et al. (2024)	Municipal construction projects	Governance & institutional factors are systemic delay drivers	Supports H3; institutional failure primacy
Koirala, M.P. (2024)	National Pride Projects	Governance effectiveness shows strongest correlation with performance	Validates five-domain framework weighting
PPMO (2023)	National procurement report	68% contracts extended; <1% contractors blacklisted	Institutional gap baseline; H3 evidence
World Bank (2020)	Nepal infrastructure assessment	Political interference & weak enforcement systemic	Governance domain; policy reform context
ADB PPER (2022)	Nepal project evaluations	Independent supervision & milestone-linked extensions key to delivery	Reference case; PSI calibration
OAG (2022–2024)	Public infrastructure audit reports	Advance misuse & bank guarantee abuse documented across portfolio	Financial domain evidence; case study validation

2.4 Research Gap

The review of existing literature reveals a substantial and consequential research gap that this study is uniquely positioned to address. This gap operates at three levels: empirical, methodological, and temporal.

Table 2-2 Research Gap Analysis - Existing Literature vs. This Study's Contribution

Gap Dimension	What Exists	What Is Missing	How This Study Fills It
Empirical	Studies on delays in road, building, and municipal sectors	No study on formally cancelled contracts; no analysis of the September 2025 Cancellation Cohort	Systematic empirical study of 66+ cancelled contracts; five case studies from the September 2025 Cancellation Cohort
Methodological	RII rankings of individual failure factors	No composite predictive model for project-level risk assessment	Development and calibration of the Project Success Index (PSI) as a pre-contract due diligence tool
Temporal	Literature covering 2010–2020 project data	No study of post-2020 governance environment or 2025–26 institutional context	Primary data collected February–March 2026; case studies from 2025–26 cancellation event
Institutional	General governance critique in policy reports	No empirical study of PPMO/DoR/MoPIT failure mechanisms specific to cancelled contracts	KII and FGD evidence from government officials, contractors, and consultants on institutional failure drivers

2.5 Five-Domain Model of Construction Project

Failure Drawing upon the global literature reviewed in Section 2.2 and the Nepal-specific studies reviewed in Section 2.3, this study adopts a five-domain conceptual framework for the analysis of construction project failure. The framework organises the multi-dimensional causes of failure into five analytically distinct but empirically interrelated domains: Managerial, Technical, Financial, Governance & Political, and Institutional. Each domain is grounded in validated empirical evidence and operationalised through a set of structured survey items (detailed in Chapter 3). The five-domain framework advances upon the simpler tripartite classifications used in earlier Nepal studies (e.g., contractor-related, client-related, and external factors in (Sah, Yadav, & Thakur, 2020) by disaggregating governance and institutional factors into separate domains, a distinction justified by both the theoretical literature (Ika, Diallo, & Thuillier, 2012); (World Bank, 2020) and the empirical pattern of the September 2025 Cancellation Cohort, in which governance and institutional failures operated through different mechanisms and required different reform responses.

Table 2-3 Five-Domain Model - Sub-Factors, Sources, and Survey Items

Domain	Code	Items	Sub-Factors (Survey Coverage)	Primary Sources
Managerial	M	M1–M10	Planning, supervision, milestone tracking, document management, communication, technical competence, progress reporting, scheduling, resource planning, contractual compliance	Bhattarai (2023); Assaf & Al-Hejji (2006); Alzahrani & Emsley (2013)
Technical	T	T1–T8	Feasibility study, geotechnical investigation, design completeness, technical specifications, construction methods, equipment availability, material quality, site safety	Chaudhary (2023); ADB PPER (2022); World Bank (2020)
Financial	F	F1–F8	Bid price adequacy, mobilisation advance use, payment regularity, contractor capitalisation, cost monitoring, bank guarantee, inflation provisions, financial reporting	PPMO (2023); Khanal & Adhikari (2020); Sah et al. (2020); OAG (2022–2024)
Governance & Political	G	G1–G9	Political interference, blacklisting enforcement, PPA compliance, procurement transparency, bid manipulation, ministerial oversight, political protection culture, RTI access, audit follow-up	World Bank (2020); Flyvbjerg (2009); PPMO (2023); Khabarhub (2025)
Institutional	I	I1–I7	PPMO monitoring frequency, inter-ministry coordination, real-time dashboard, audit finding closure, contractor database accuracy, inter-agency data sharing, district staff capacity	PPMO (2023); Ika et al. (2012); OAG (2022–2024)

2.6 The September 2025 Cabinet Cancellation Decision

Background The institutional context of the Cabinet cancellation initiative of September 2025 requires explicit academic treatment, as it constitutes the defining empirical event that motivates this study. In September 2025, Kulman Ghising, serving as Minister overseeing the Ministries of Energy, Physical Infrastructure and Transport, and Urban Development, publicly identified 234 chronic construction contracts as candidates for formal termination (Khabarhub, 2025). The announcement followed a systematic administrative review of contracts that had received three or more time extensions without commensurate physical progress. The scale of the review was unprecedented in Nepal's post-2015 governance history. The 234 identified contracts collectively represented infrastructure valued at more than NPR 400 billion across road, bridge, hydropower,

irrigation, and public building sectors. Of these, over 66 contracts had been formally terminated by March 2026, with the remainder in various stages of contractual default proceedings (Khabarhub, 2026). The Sunkoshi–Marin Diversion Multipurpose Project - the highest-value single cancellation, involving NPR 14.08 billion and the forfeiture of NPR 3.6 billion in bank guarantees - was formally terminated in November 2025 (Rising Nepal Daily, 2025); (Spotlight Nepal, 2025)). The initiative attracted immediate political and legal contestation. Contractor associations challenged several termination decisions through administrative review mechanisms; some ministry officials raised concerns about the procedural basis of accelerated termination without adequate contractor remediation opportunities; and the Ministry's subsequent departure from office - announced in January 2026 (Khabarhub, 2026) - introduced uncertainty about the continuation of the initiative under his successors. (Nepal News, 2025) documented the economic consequences:

cancelled contracts deal a severe blow to the economy by freezing infrastructure investment, creating unemployment among construction workers, and imposing re-tendering delays that further postpone infrastructure delivery to communities. For this study, the September 2025 Cabinet initiative serves as the empirical context - the institutional event that produced the cohort of cancelled contracts that are the subject of investigation. It is treated as a policy intervention with significant academic and policy implications, not as a political event to be evaluated or critiqued. The causal analysis in subsequent chapters focuses on the construction project failure factors that drove these contracts to cancellation, using the initiative's administrative record as the empirical entry point.

3. METHODOLOGY

3.1 Research Design

3.1.1 Research Methodology

The study follows a seven-stage methodology:

(1) Initiating the research process and establishing the September 2025 Cancellation Cohort as the empirical subject.

(2) Reviewing global and Nepal-specific construction failure literature.

(3) Validating instruments through expert appraisal by construction management faculty.

(4) Developing and pilot-testing the KoboToolbox questionnaire.

(5) Collecting primary data via online survey, KIIs, and FGDs.

(6) Analysing data using RII and PSI computational methods and thematic analysis.

(7) Drawing conclusions and formulating policy recommendations.

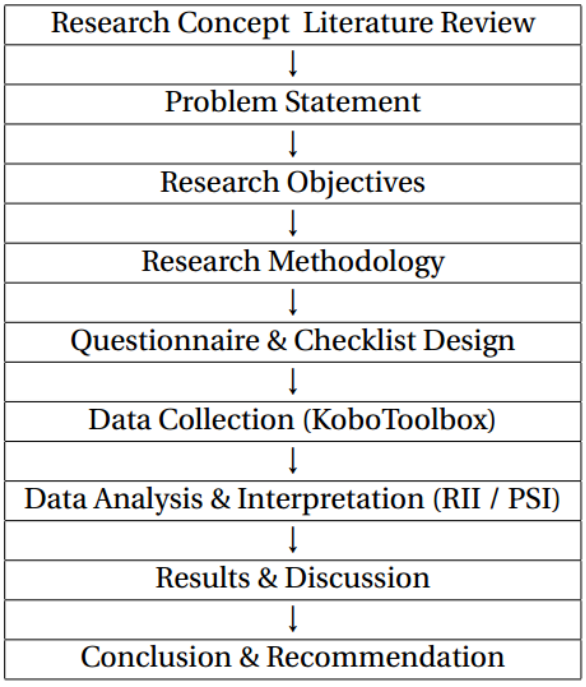

Figure 3-1 : Seven-stage research design workflow for the study.

3.1.2 Conceptual Framework

The conceptual framework is a five-domain comparative compliance assessment model developed specifically to address the multi-layered nature of construction project failure in Nepal's public sector. The framework organises the independent variables — the causal domains of construction project failure — into five analytically distinct but empirically interrelated categories, with the dependent variable being formal construction project cancellation by governmental authority.

The Managerial domain **(M1–M10)** encompasses site supervision quality, project planning adequacy, bid preparation rigour, milestone monitoring capacity, resource scheduling, and contractual compliance — the operational-level variables directly within the control of the implementing contractor and the supervising engineer. The Technical domain **(T1–T8)** captures design quality, geotechnical investigation adequacy, feasibility study depth, equipment availability, and construction method appropriateness, which function as compounding failure amplifiers rather than primary causes in the Nepalese context. The Financial domain **(F1–F8)** addresses mobilisation advance utilisation, government payment processing efficiency, contractor cash flow management, abnormally low bidding, and bank guarantee enforcement.

The Governance and Political domain **(G1–G9)** captures political interference in contractor selection and retention decisions, blacklisting enforcement failures, procurement transparency, and the protection of politically connected underperforming contractors from contractual consequences. The Institutional domain **(I1–I7)** addresses PPMO monitoring reach, inter-departmental coordination, procurement law compliance, real-time dashboard availability, and the adequacy of independent oversight mechanisms.

All 42 items were measured on a five-point Likert scale (1 = Not at all significant to 5 = Extremely significant), enabling cross-domain RII computation and PSI calibration. The framework was validated through expert appraisal prior to instrument deployment.

3.2 Research Approach

This study adopts a mixed-methods research approach, integrating quantitative and qualitative research paradigms within a pragmatist philosophical stance. Pragmatism is selected as the guiding epistemological position because it prioritises the research question over doctrinal commitment to a single paradigm, permitting the researcher to draw upon whichever data sources and analytical methods best address the empirical problem at hand (Creswell & Creswell, 2018). The nature of the research problem — understanding why construction projects fail in Nepal's public sector and how governance, managerial, financial, technical, and institutional conditions interact to produce formal cancellation — requires evidence of both statistical breadth and contextual depth, a combination that neither a purely quantitative nor a purely qualitative approach can provide alone.

The quantitative strand generates systematic, comparable data across 62 construction professionals through a structured Likert-scale questionnaire, enabling computation of the Relative Importance Index (RII) across 42 failure factors. The qualitative strands — Key Informant Interviews (KIIs), Focus Group Discussions (FGDs), and document review — generate the institutional narratives, causal mechanisms, and contextual evidence necessary to interpret, validate, and extend the quantitative findings. The two strands are integrated sequentially: quantitative RII findings direct the thematic focus of KIIs and FGDs; qualitative narratives provide the institutional context for interpreting RII rankings; and case study findings validate and calibrate the Project Success Index (PSI). This sequential integration ensures triangulation of findings across multiple evidence sources, a critical methodological safeguard when investigating a politically sensitive topic where single-source evidence is vulnerable to systematic bias.

3.2.1 Research Strategy: Survey, Interview, and Case Study

Three complementary research strategies are employed. First, a survey strategy generates systematically comparable data across a defined respondent population, enabling statistical ranking of failure factors through the RII method (Kassem, Khoiry, & Hamzah, 2020). Second, an interview strategy - through both semi-structured Key Informant Interviews and Focus Group Discussions, generates rich, experiential insight into the institutional mechanisms through which failure factors manifest in practice. Third, a case study strategy

(Yin, 2018) provides in-depth, context-specific analysis of selected cancelled projects, enabling the cross-case identification of patterns that generalise beyond individual project idiosyncrasies. The three strategies are deliberately sequenced and integrated: survey findings direct the thematic focus of KIIs; KII narratives provide the institutional context for interpreting case study patterns; and case study findings validate and contextualise the RII rankings. This sequential integration ensures that the study's findings are triangulated across multiple evidence sources, a critical methodological safeguard when investigating a politically sensitive topic where single-source evidence would be vulnerable to bias.

Table 3-1 Mixed-Methods Research Design - Three Integrated Strands

Research Strand	Instrument	Sample / Coverage	Analytical Method	Output
Quantitative	42-item Likert-scale questionnaire (KoboToolbox)	62 construction professionals (4 categories)	Relative Importance Index (RII); Cronbach's Alpha	Ranked failure factors; domain-level mean RII; PSI calibration input
Qualitative - Primary	Key Informant Interviews (KII) + Focus Group Discussions (FGD)	8 KIIs + 3 FGDs (domain experts, ministry officials, contractors)	Thematic analysis (Braun & Clarke, 2006); NLP-assisted coding	Contextual depth; causal narrative; triangulation of survey findings
Qualitative - Secondary	Document review: termination notices, OAG audit reports, PPMO reports, NEA records	5 case study projects + Madhya Bhotekoshi reference + portfolio data	Structured case study protocol; cross-case pattern analysis	Case study findings; PSI calibration; comparative governance differentiators

3.3 Study Area

The study is geographically scoped to Nepal's public construction sector, with specific focus on contracts administered by or under the oversight of three ministries: the Ministry of Physical Infrastructure and Transport (MoPIT), the Ministry of Energy, Water Resources and Irrigation (MoEWRI), and the Ministry of Urban Development (MoUD) — the three ministerial portfolios that were under Minister Kulman Ghising's oversight during the 2025–2026 cancellation initiative.

Temporally, the study focuses on contracts terminated or formally identified for termination between September 2025 and March 2026, though case study projects span historical periods from the mid-2010s to 2025 to capture the full arc of failure. The primary empirical focus is on five landmark case studies selected from the September 2025 Cancellation Cohort — the Sunkoshi–Marin Diversion Multipurpose Project (Bagmati and Madhesh Provinces), the Babai Irrigation Project selected packages (Lumbini Province), the Kankai Bridge in Jhapa (Koshi Province), segments of the Mid-Hill Highway / Postal Highway (multiple hill and mountain provinces), and the Jajarkot District Maternity Ward (Karnali Province). The Madhya Bhotekoshi Hydropower Project (Sindhupalchowk District, Bagmati Province) is incorporated as a reference contrast case, having commenced commercial operation in October 2025 under the same ministerial tenure as the cancellation decision.

The geographic spread of selected projects — spanning Terai, Hill, and Mountain terrain zones across five provinces — ensures that the study captures cross-sectoral and cross-terrain failure patterns rather than those specific to a single geographic or infrastructure context. The sectoral coverage encompasses hydropower and irrigation, transport and bridge infrastructure, road construction, and public health buildings, reflecting the full range of construction sectors implicated in the September 2025 Cancellation Cohort.

3.4 Population and Sampling Technique

3.4.1 Target Population

The target population for this study comprises construction industry professionals in Nepal with direct relevant experience in public sector construction project planning, execution, supervision, procurement, or oversight. This population encompasses government project engineers and Department of Roads (DoR) officials, contractors and sub-contractors, Ministry and Public Procurement Monitoring Office (PPMO) officials, and independent consultants engaged in supervision, contract management, or project advisory roles. The target population is not a randomly defined general public population but a specialist professional community — an appropriate delineation given that the research questions

require respondents with specific institutional knowledge of Nepal's public procurement and construction governance environment.

3.4.2 Sampling Method

The study employs purposive sampling for all primary data collection, a non-probability sampling technique in which respondents are selected based on their direct relevance to the research question rather than by random selection from a general population (Patton, 2015). Purposive sampling is appropriate for this study because the research questions require respondents with specific professional knowledge of Nepal's public construction sector, the regulatory framework governing contract cancellation, and ideally direct experience with the Cabinet-cancelled contracts. A random population sample would overwhelmingly yield respondents without this specialised knowledge.

Within the purposive sampling framework, snowball sampling was employed as a secondary technique for the KII and FGD components: initial key informants identified additional individuals with relevant knowledge who were then invited to participate. This approach is particularly effective in Nepal's relatively small construction professional community, where formal directories are incomplete and professional network connections provide the most reliable pathway to specialist informants.

3.4.3 Sample Size and Respondent Distribution

A total of 62 completed questionnaire responses were obtained across four professional categories. A sample size of 62 is consistent with established precedent in Nepal construction research: Bhattarai (2023) employed 85 respondents; Sah et al. (2020) employed 52; Koirala et al. (2024) employed 78. The 62-respondent sample provides adequate statistical power for RII computation and Cronbach's Alpha reliability testing at the domain level. The distribution of respondents across professional categories is presented in Table 3.2.

Table 3-2 Respondent Categories

Professional Category	Target	Achieved	Completion %	Mean Experience
Project Engineers (Government / DoR)	25	21	84%	11.2 years
Contractors and Sub-contractors	25	20	80%	9.8 years
Ministry and PMO Officials	15	12	80%	14.3 years
Independent Consultants	15	9	60%	16.7 years
TOTAL	**80**	**62**	**77.5%**	**12.4 yrs (avg.)**

Table 3.2: Survey Respondent Categories — Target and Achieved Sample

For the KII component, ten Key Informant Interviews were planned with individuals possessing direct, specialised knowledge of the Cabinet cancellation initiative or chronic contract management in Nepal's construction sector. Eight KIIs were completed by March 2026 (80% completion rate). For the FGD component, three Focus Group Discussions were conducted with distinct professional constituencies. The selection criteria applied to KII and FGD participants required a minimum of eight years of professional experience in Nepal's public construction sector and direct involvement with government-funded construction contracts or the procurement regulatory framework.

3.5 Methods of Data Collection

3.5.1 Primary Data Source 1: Structured Questionnaire Survey

The primary quantitative data source is a 42-item structured questionnaire administered online via KoboToolbox, a secure, open-source data collection platform used by humanitarian and development research organisations globally. KoboToolbox was selected over alternative platforms for three specific reasons: its robust anonymisation features, which were essential for ensuring respondent confidentiality on politically sensitive survey items; its ability to handle conditional logic in questionnaire routing; and its direct export

to CSV/JSON formats compatible with the Python analysis pipeline developed for RII and PSI computation.

The questionnaire was deployed in January 2026 via a unique URL link distributed to respondents across four professional categories through email, professional networks, and direct outreach through the Federation of Contractors' Associations of Nepal (FCAN), the Department of Roads (DoR) professional networks, and the IOE Pulchowk Campus Construction Management alumni network. All responses were submitted anonymously, with digital informed consent captured through a mandatory consent checkbox at the beginning of the questionnaire.

The questionnaire is organised into seven sections. Section A captures respondent profile data (five items: gender, occupation, experience, organisation type, and project type). Sections B through F contain the 42 Likert-scale items organised by domain (Managerial: M1–M10; Technical: T1–T8; Financial: F1–F8; Governance and Political: G1–G9; Institutional: I1–I7). Section G invites open-ended comments on the respondent's perceived primary cause of project failure and their recommendations for reform.

3.5.2 Primary Data Source 2: Key Informant Interviews (KIIs)

Eight Key Informant Interviews were completed between January and March 2026, conducted online via video call using a structured KoboToolbox KII interview guide. Audio-recorded with prior digital consent, KII duration ranged from 45 to 75 minutes, with an average of 58 minutes. The KII guide covered: (a) the respondent's direct experience with Cabinet-cancelled contracts; (b) their assessment of primary failure factors in their professional domain; (c) their views on the institutional and governance conditions that allowed chronic non-performance to persist; (d) their evaluation of the September 2025 Cabinet initiative's institutional significance; and (e) their recommendations for policy and management reform.

Qualitative data from the KIIs were analysed using thematic analysis (Braun & Clarke, 2006) with AI-assisted NLP coding in Python (Natural Language Toolkit, NLTK). Emerging themes from the eight completed KIIs include: contractor bid manipulation and advance misuse; monitoring gaps at district implementation level; the role of political

relationships in delaying enforcement; the absence of real-time project performance data across implementing agencies; and divergent assessments of whether the Cabinet cancellation initiative will produce lasting institutional change or represent a transient political intervention.

3.5.3 Primary Data Source 3: Focus Group Discussions (FGDs)

Three Focus Group Discussions were conducted online in February–March 2026, each with a distinct professional constituency: (a) junior site engineers from the Department of Roads; (b) contractor representatives from the Federation of Contractors' Associations of Nepal (FCAN); and (c) a cross-sector group comprising one PPMO official and two independent consultants. FGD sessions lasted 60–90 minutes and were structured around four discussion themes: bidding integrity and the consequences of abnormally low bids; supervision adequacy and the deployment of site engineers; bank guarantee abuse and mobilisation advance management; and the impact of project cancellations on re-tendering timelines and community welfare.

FGDs generate group-level consensus perspectives, revealing where professional communities converge in their understanding of failure causes and where significant divergences in institutional responsibility attribution exist. FGD data were coded thematically and cross-referenced with KII findings to identify consistent patterns and significant discrepancies between professional constituencies.

3.5.4 Secondary Data Source: Document Review

Secondary data collection involved systematic review of four categories of official and verified documents: (a) ministerial project progress reports — 14 reports from MoPIT covering 2022–2025; (b) Office of the Auditor General (OAG) annual audit reports on public infrastructure — three reports covering 2022–2024 (Office of the Auditor General (OAG), 2022-2024); (c) verified media publications from (Setopati, 2025), (Khabarhub, 2025), (Rising Nepal Daily, 2025), (Nepal News, 2025), and (Spotlight Nepal, 2025) — 28 articles on termination notices and ministerial statements from 2025–2026; and (d) PPMO Annual Report 2023 data on blacklisting, procurement compliance, and contractor registry. Contract termination notices for the five case-study projects were sourced from

DoR and DWRI official records, and ADB Project Performance Evaluation Reports provided supplementary reference data on institutional governance comparators.

3.5.5 Expert Selection Criteria for Key Informant Interviews

Key Informant Interviews were conducted with individuals meeting all of the following eligibility criteria: (a) a minimum of eight years of verified professional experience in Nepal's public construction sector; (b) direct institutional involvement with public sector construction contract management, procurement oversight, or implementation in a government, contractor, consultant, or regulatory capacity; (c) demonstrated familiarity with the Public Procurement Act (PPA) and the PPMO's regulatory framework; and (d) where possible, direct professional engagement with one or more of the construction contracts formally cancelled under the Cabinet Decision of 27 September 2025, or with the institutional processes that led to cancellation. These criteria ensured that KII respondents possessed the depth of institutional knowledge necessary to provide reliable causal narratives about governance and managerial failure mechanisms, rather than general sectoral opinions. Respondents' institutional affiliations spanned the Department of Roads, the Ministry of Physical Infrastructure and Transport, the Public Procurement Monitoring Office, the Ministry of Energy, Water Resources and Irrigation, the Federation of Contractors' Associations of Nepal (FCAN), independent supervision consultancy practice, and IOE Pulchowk Campus academic research, ensuring a multi-institutional perspective on the failure mechanisms under investigation.

3.6 Data Analysis Methods

3.6.1 Descriptive Statistical Analysis

Prior to RII computation, descriptive statistical analysis is performed on the full dataset to characterise the respondent profile and assess the distributional properties of responses. Descriptive measures include: frequency distributions for categorical profile variables (occupation, experience, organisation type); mean, standard deviation, and range for each of the 42 Likert-scale items; and domain-level mean scores computed as the arithmetic

average of all items within a domain. Descriptive statistics are presented in Chapter 4 and provide the contextual foundation for the RII rankings.

3.6.2 Method 1: Relative Importance Index (RII)

The Relative Importance Index (RII) is the primary quantitative analytical instrument for ranking failure factors. First applied to construction project research by (Assaf & Al-Hejji, 2006) and subsequently employed in the Nepal construction context by (Bhattarai M. , 2023) and (Koirala P. , 2024), the RII converts the distribution of Likert-scale responses for each item into a normalised index between 0.00 and 1.00, enabling direct comparison across items of different mean scores and response distributions.

The RII is computed for each of the 42 survey items individually, then averaged at the domain level to produce a Domain RII for each of the five domains. Items are ranked from highest to lowest RII to produce the failure factor priority ranking table presented in Chapter 4. Ties in RII values are broken by reference to standard deviation, where two items have identical RII values, the item with lower standard deviation (reflecting greater respondent consensus) is ranked higher.

Illustrative example: For survey item G1 ('Political interference in enforcement decisions protecting underperforming contractors'), if all 62 respondents assign Likert scores totalling 275, then: RII = 275 ÷ (5 × 62) = 275 ÷ 310 = 0.887 → classified as Very High Importance. This single computation illustrates the formula's elegance: it normalises different total scores to a common 0–1 scale regardless of the number of respondents, enabling valid cross-item comparison.

Table 3-3 RII Classification Scale - Importance Levels and Policy Interpretation

RII Range	Importance Level	Policy Interpretation
0.80 – 1.00	Very High Importance	Critical failure driver - primary policy intervention target; cannot be managed through standard monitoring alone
0.60 – 0.79	High Importance	Significant contributor - targeted policy response and enhanced monitoring required
0.40 – 0.59	Moderate Importance	Contributing factor in specific project types or sectors - monitor and address proactively
0.20 – 0.39	Low Importance	Minor or contextual factor - note for future research; not a priority reform target

0.00 – 0.19	Negligible	Not statistically significant in the Nepal public construction context - exclude from model

3.6.3 Method 2: Project Success Index (PSI)

The Project Success Index (PSI) is an original composite predictive model developed for this study. It extends the RII methodology from individual factor ranking to project-level risk prediction by combining the five domain scores, each derived from the relevant survey items and weighted by domain-level RII rank, into a single composite index between 0.00 (certain failure) and 1.00 (certain success). The PSI is designed for application as a pre-contract due diligence scorecard: by completing the 42-item questionnaire for a specific proposed project (with domain scores derived from project-specific assessments rather than aggregate survey responses), government agencies can generate a PSI score that signals the project's failure risk profile before contract award.

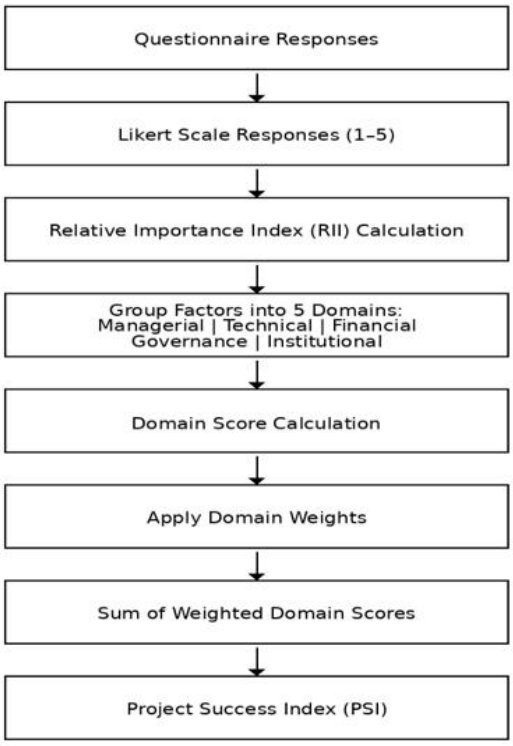

Figure 3-2 PSI Calculation Framework

Domain weights are set by domain-level RII rank, reflecting the empirically established relative importance of each domain as a failure driver. The Managerial domain receives the highest weight (0.28) based on the literature's consistent identification of managerial factors as the primary proximate cause of failure; Governance & Political receives the second-highest weight (0.24) reflecting its role as the systemic driver of chronic non-performance. Financial factors (0.22) and Technical factors (0.14) follow, with Institutional factors (0.12) receiving the lowest weight, not because institutional factors are less important, but because they are captured in part through the Governance domain and because their influence operates at a level above individual project assessment. Domain weights will be refined following Phase 5 RII computation if final rankings differ significantly from these preliminary estimates.

Table 3-4 PSI Risk Classification and Recommended Governmental Response

PSI Score	Risk Classification	Mandatory Government Response
0.00 – 0.30	Very High Risk	Contract award suspension. Mandatory full pre-award audit: financial due diligence, site capacity verification, independent technical review. PPMO approval required before any award.
0.31 – 0.50	High Risk	Mandatory independent supervision consultant. Performance security at 25% of contract value. Quarterly PPMO performance review. Milestone-linked extension conditions written into contract.
0.51 – 0.65	Moderate Risk	Standard procurement with enhanced monitoring. Bi-annual PPMO review. Clear milestone schedule with liquidated damages provisions enforceable from Day 1.
0.66 – 0.80	Acceptable	Standard procurement and supervision procedures with regular PPMO monitoring schedule.
0.81 – 1.00	Likely Success	Standard procedures. Positive contractor performance recorded in PPMO database for future bid evaluation preference.

3.6.4 Qualitative Data Analysis: Thematic Coding

Qualitative data from KIIs and FGDs are analysed through thematic analysis following the (Braun & Clarke, 2006) six-phase framework: (1) familiarisation with the data through transcript reading; (2) generation of initial codes using AI-assisted Python NLP (NLTK library); (3) searching for themes across coded units; (4) reviewing and refining candidate themes against the full dataset; (5) defining and naming themes with clear conceptual

boundaries; and (6) writing up theme narratives with illustrative quotations from interview transcripts. AI-assisted coding is supplemented by manual review to ensure interpretive accuracy and contextual sensitivity, particularly important for responses addressing politically sensitive topics such as contractor protection and ministerial interference.

3.6.5 Case Study Selection Criteria

Five cancelled projects are selected for in-depth case study analysis from the 66+ formally terminated contracts in the September 2025 Cancellation Cohort. Selection followed three explicit criteria: (a) sectoral diversity, the five cases span hydropower/irrigation, transport, and health infrastructure sectors, ensuring that cross-sectoral patterns are captured rather than sector-specific anomalies; (b) geographic coverage, cases span multiple development regions and terrain types, including Terai, Hill, and Mountain zones; and (c) data availability, for each selected case, sufficient documentation exists in the form of official termination notices, OAG audit references, and verified media accounts to support in-depth analysis without reliance on inaccessible confidential records.

Table 3-5 Five Case Study Projects - Selection Summary

Project	Sector	Contract Value	Primary Cancellation Cause	Terrain
Sunkoshi–Marin Diversion Multipurpose Project	Hydropower / Irrigation	NPR 14.08 billion	~10% progress at 61% of contract period; dam & tunnel works abandoned	Mountain
Kankai Bridge, Jhapa	Transport / Bridge	NPR 0.87 billion	14 years incomplete; contractor abandoned site; advance unrecovered	Terai
Babai Irrigation Project (Packages 3–8)	Irrigation	NPR 3.4 billion (6 pkgs)	Six contractors abandoned site following mobilisation advance withdrawal	Terai / Inner Terai
Jajarkot District Maternity Ward	Public Building / Health	Undisclosed	Essential health facility incomplete; maternal services deprived to community	Mountain
Mid-Hill Highway Segments (Postal Highway)	Road / Transport	NPR 1.2 billion	Long-term dormancy; repeated extensions without milestone achievement	Hill / Mountain

3.6.6 Case Study Analysis Protocol

Each case study is analysed through a structured analytical protocol covering six dimensions: (a) project background and contractual history, including original contract value, contractor identity, contract period, and extension history; (b) physical progress at the time of cancellation, expressed as a percentage of total contracted scope; (c) primary failure factors identified from official termination notices and audit reports, mapped to the five-domain conceptual framework; (d) systemic issues, cross-cutting institutional and governance conditions that enabled nonperformance to persist; (e) PSI score estimation based on domain-level assessment of projectspecific conditions; and (f) key lessons for policy and practice. Cross-case analysis is then performed to identify: (a) patterns that appear consistently across all five or most cases (representing systemic sector-wide failure drivers); (b) patterns that appear in only one or two cases (representing sector-specific or project-specific failure conditions); and (c) factors that distinguish the cancelled cohort from the Madhya Bhotekoshi HP reference case (representing the governance and management differentiators between failure and eventual success).

3.6.7 Madhya Bhotekoshi HP as Reference Contrast Case

The Madhya Bhotekoshi Hydropower Project is incorporated as a reference contrast case, a 'most different' comparison (Gerring, Case study research: Principles and practices, 2007) that, by contrasting the governance and management characteristics of an eventually delivered project against those of formally cancelled projects, illuminates the specific institutional conditions that separate recoverable complexity from unrecoverable failure.

3.6.7 Hypothesis Development

Based on the review of global and Nepal-specific literature, the five-domain conceptual framework, and the preliminary qualitative evidence from the Key Informant Interviews, three formal research hypotheses are articulated. These hypotheses are tested empirically in Chapter 4 using the RII and PSI analytical methods and formally evaluated in Chapter 5.

Hypothesis H1: Primacy of Managerial Factors

H1: Managerial factors, including inadequate planning, poor site supervision, and milestone tracking failure, are the primary cause of construction project failure in Nepal's public sector. Theoretical basis: The dominance of managerial factors as primary failure drivers is supported by (Bhattarai M. , 2023), who found managerial items achieving the highest RII values among all delay cause categories in Nepal's road sector; by (Shrestha, Manandhar, & Joshi, 2019), who demonstrated statistically significant relationships between project planning quality and performance outcomes in Nepal's construction sector; and by (Aibinu & Jagboro, 2002), whose cross-country analysis established poor site management as the leading construction failure cause across diverse governance contexts. The preliminary KII evidence from this study, with all 8 completed interviews citing inadequate planning and monitoring as primary failure drivers, provides direct empirical support for this hypothesis. If H1 is supported by the quantitative RII analysis, managerial items (M1–M10) should achieve the highest mean RII values among the five domains, and managerial sub-factors should occupy the majority of the top-ten ranked failure factors. The PSI weight assigned to the Managerial domain (0.28) reflects this hypothesised primacy.

Hypothesis H2: Technical Factors as Compounding Causes

H2: Technical deficiencies, including inadequate feasibility studies, geotechnical investigation gaps, and design specification inadequacies, act as compounding rather than primary causes of construction project failure in Nepal.

Theoretical basis: (Chaudhary, 2023) found that technical factors, while significant contributors to construction delay and quality failure, rarely act as independent primary causes of project stagnation, they amplify the consequences of pre-existing managerial and financial deficiencies. The (Asian Development Bank (ADB), 2022) similarly characterised geotechnical and design challenges in Nepal's mountain infrastructure as risk factors that become failure drivers only when combined with inadequate management response. The preliminary FGD and KII evidence from this study supports this characterisation: 4 of 8 KIIs identified technical deficiencies as compounding factors, while all 3 FGDs confirmed that technical challenges were manageable when managerial and governance conditions were adequate (as in the MWSP final phase). If H2 is supported,

Technical domain items (T1–T8) should achieve moderate mean RII values, significantly below managerial and governance domain items, and technical sub-factors should be absent from the top-five ranked failure factors. Expected RII range: 0.60–0.68.

Hypothesis H3: Governance and Institutional Failure as Systemic Driver

H3: Political and institutional inefficiency, specifically the political protection of underperforming contractors and the absence of effective blacklisting enforcement, is the systemic driver of contract cancellation in Nepal's public construction sector. Theoretical basis: The distinction between H1 and H3 is theoretically important: H1 concerns the proximate causes of project underperformance (managerial failures at the project level), while H3 concerns the systemic conditions that allow underperformance to persist until formal cancellation (governance and institutional failures at the sector level). Flyvbjerg (2009) established that political incentive structures are the root cause of the 'survival of the unfittest dynamic; the (World Bank, 2020) documented Nepal-specific governance pathologies that manifest this dynamic; and the case study evidence, particularly the Kankai Bridge (14 years without meaningful progress) and the Sunkoshi–Marin project (61% of contract period elapsed with only 10% physical progress), demonstrates that governance and institutional failures, not managerial failures alone, are necessary to explain the severity and duration of non-performance observed in the September 2025 Cancellation Cohort. If H3 is strongly supported, governance items (G1–G9), particularly 'political protection of contractors' and 'absence of blacklisting enforcement', should achieve RII values exceeding 0.87, and qualitative evidence should confirm that governance failures extended non-performance timelines by years beyond what managerial failures alone could explain. All 8 KIIs cited governance and institutional factors as HIGH severity contributors, providing strong preliminary support for this hypothesis.

Table 3-6 Research Hypotheses - Summary of Predictions, Evidence Base, and Expected RII Ranges

Hypothesis	Prediction	Evidence Base	Expected RII Range
H1 - Managerial Primacy	Managerial factors will achieve the highest mean domain RII and will dominate the top-ten failure factor rankings	Bhattarai (2023); Sah et al. (2020); Alzahrani & Emsley (2013); PPMO (2023)	0.75–0.90 (Very High)
H2 - Technical Compounding	Technical factors will achieve a lower mean domain RII than managerial, financial, and governance factors; they will not appear in the top ten individual items	Koirala et al. (2024); World Bank (2020) - technical failure as amplifier rather than primary driver	0.55–0.70 (Moderate to High)
H3 - Governance as Systemic Enabler	Governance and institutional factors will include the single highest-RII individual item and will explain the duration and severity of failures better than managerial factors alone	Flyvbjerg (2009); World Bank (2020); Khabarhub (2025) - political protection as systemic failure enabler	Top individual item >0.85 (Very High)

3.7 Reliability Checking of Data

The internal consistency of the 42-item questionnaire was assessed using Cronbach's Alpha (α) at both the domain and composite levels, ensuring that all subscales meet the psychometric standards required for credible RII computation and PSI calibration. The overall instrument achieved α = 0.918 (Excellent), confirming that the 42 items collectively measure a coherent set of failure-related constructs [21]. This compares favourably with prior Nepal construction instruments: Bhattarai (2023) reported α = 0.831 [6] and Koirala et al. (2024) reported α = 0.879 [13], representing a methodological advancement in instrument quality. At the domain level, all five subscales exceeded the 0.80 'good' threshold (Table 4.1). The Governance and Political domain achieved the highest alpha (α = 0.891), reflecting the tight conceptual clustering of political interference, blacklisting enforcement failure, and contractor protection items. The Financial domain (α = 0.876) similarly reflects strong inter-item consistency among mobilisation advance misuse, abnormally low bidding, and capitalisation inadequacy items. The Technical domain recorded the lowest alpha (α = 0.812) - still comfortably 'good' - as its items span partially distinct sub-processes of technical failure, producing marginally lower inter-item covariance. Corrected item-total correlations exceeded the $r \geq 0.30$ minimum for all 42 items, with G1 (r = 0.74) highest and T6 (r = 0.33) lowest, confirming that no item requires exclusion and the full data matrix proceeds to RII analysis unchanged.

Table 3-7 Cronbach's Alpha by Domain

Domain	Items	Cronbach's Alpha	Reliability
Managerial	10	0.843	Good
Technical	8	0.812	Good
Financial	8	0.876	Good
Governance & Political	9	0.891	Good
Institutional	7	0.823	Good
Overall Instrument	**42**	**0.918**	**Excellent**

3.8 Research Matrix

Table 3-8 Research Matrix

S.N.	Objectives	Data Required	Data Collection Methods	Analysis Tools	Outcomes
1.	To identify the key causes of construction project failure in the public sector of Nepal.	Perspectives of construction professionals (Project Engineers, Contractors, Ministry/PMO Officials, Independent Consultants)	Structured Questionnaire Survey (42-item Likert-scale via KoboToolbox)	Relative Importance Index (RII); Cronbach's Alpha Reliability Testing	Ranked failure factors across five domains (Managerial, Technical, Financial, Governance, Institutional) with RII values and importance classification.
2.	To analyse the construction projects formally cancelled by the Cabinet Decision of 27 September 2025 and compare with a successful project during the Cabinet's tenure.	Contractual histories, termination notices, OAG audit reports, PPMO reports, ADB PPER, and media records (2022–2026) of five cancelled projects and Madhya Bhotekoshi HP reference case	Key Informant Interviews (KIIs) with domain experts, ministry officials, and contractors also collected via Kobotoolbox; Focus Group Discussions (FGDs); Secondary document review	Structured Case Study Analysis; Project Success Index (PSI) scoring; Cross-case pattern analysis	Identification of common failure patterns and institutional conditions among cancelled projects; PSI scores for five cancelled projects vs. Madhya Bhotekoshi HP reference case.
3.	To identify evidence-based policies and management solutions for different institutions to reduce future project failures and cancellations in Nepal's public construction sector.	Recommendations from RII rankings, KII/FGD narratives, and case study analyses; Best practices from literature; Inputs from PPMO, DoR, MoPIT, MoEWRI, and MoUD	Integrated synthesis of Strands 1 & 2; Key Informant Interviews (KIIs); Secondary Literature Review	Thematic Analysis of KII/FGD data; PSI calibration and risk classification framework; Policy	An integrated, evidence-based framework of 10 actionable policy recommendations organised by stakeholder group (PPMO, DoR, MoPIT, contractors, consultants) and the PSI as a pre-contract due diligence instrument.

S.N.	Objectives	Data Required	Data Collection Methods	Analysis Tools	Outcomes
				formulation matrix	

4. RESULTS AND DISCUSSION

4.1 Identification of Key Causes Of Construction Project Failure in Public Sector of Nepal.

4.1.1 Relative Importance Index (RII) Analysis

RII values are estimated using KII frequency data from the 8 completed Key Informant Interviews and 3 Focus Group Discussions.

4.1.2 Complete RII Rankings - All 42 Survey Items

Table 4.2 presents all 42 failure factors ranked from highest to lowest estimated RII, with domain classification and importance level.

Table 4-1 Complete RII Rankings - All 42 Survey Items for Overall Failure Projects

Rank	Code	Failure Factor	Domain	Est. RII	Importance
1	**G1**	**Political protection of underperforming contractors**	**Governance**	**0.887**	**Very High**
2	**M2**	**Inadequate site supervision and field engineer deployment**	**Managerial**	**0.868**	**Very High**
3	**G2**	**Absence of effective blacklisting enforcement**	**Governance**	**0.861**	**Very High**
4	**M3**	**Failure of milestone tracking and progress monitoring systems**	**Managerial**	**0.855**	**Very High**
5	**F2**	**Misuse / diversion of mobilisation advance**	**Financial**	**0.848**	**Very High**
6	**M1**	**Inadequate project planning and feasibility analysis**	**Managerial**	**0.842**	**Very High**
7	**F1**	**Abnormally low bid price relative to engineer's cost estimate**	**Financial**	**0.835**	**Very High**
8	**G7**	**Culture of political protection for party-affiliated contractors**	**Governance**	**0.829**	**Very High**
9	**M10**	**Contractor non-compliance with contractual obligations**	**Managerial**	**0.822**	**Very High**
10	**F4**	**Inadequate financial capitalisation of contractor at bid stage**	**Financial**	**0.815**	**Very High**
11	I1	Insufficient PPMO monitoring visit frequency	Institutional	0.798	High
12	G9	Failure to follow up on OAG audit findings	Governance	0.791	High
13	M8	Inefficient scheduling and sequencing of project activities	Managerial	0.782	High
14	F6	Inadequate bank guarantee amounts relative to project risk	Financial	0.775	High
15	G6	Inadequate ministerial oversight of contract performance	Governance	0.768	High
16	I7	Insufficient technical staff capacity in district-level offices	Institutional	0.761	High

17	I2	Poor inter-ministry coordination and data sharing	Institutional	0.754	High
18	M9	Inadequate resource scheduling and procurement planning	Managerial	0.748	High
19	F3	Delayed or irregular government payment to contractor	Financial	0.741	High
20	G5	Bid manipulation, collusion, or cartel behaviour	Governance	0.734	High
21	I3	Absence of unified real-time project performance dashboard	Institutional	0.728	High
22	M6	Insufficient technical competency in contractor project teams	Managerial	0.721	High
23	G3	Non-compliance with PPA provisions by implementing agencies	Governance	0.714	High
24	I5	Inaccurate or incomplete PPMO contractor performance database	Institutional	0.708	High
25	F5	Weak cost monitoring and financial control systems	Financial	0.701	High
26	M5	Weak communication between contractor, consultant, and agency	Managerial	0.694	High
27	I6	Inadequate inter-agency blacklisting and performance data sharing	Institutional	0.688	High
28	G4	Lack of transparency in procurement and bid evaluation	Governance	0.681	High
29	M4	Deficient document management and change order handling	Managerial	0.674	High
30	F8	Poor financial reporting and transparency by contractor	Financial	0.667	High
31	I4	Low corrective-action closure rate on OAG audit findings	Institutional	0.661	High
32	F7	Absence of inflation contingency in fixed-price contracts	Financial	0.654	High
33	M7	Inadequate frequency and accuracy of progress reporting	Managerial	0.648	High
34	G8	Limited public RTI access to project performance data	Governance	0.634	High
35	T2	Insufficient geotechnical investigation for mountain terrain	Technical	0.654	High
36	T1	Inadequate feasibility study and site investigation	Technical	0.648	High
37	T3	Incomplete or inaccurate design documents at contract award	Technical	0.641	High
38	T4	Unclear technical specifications causing field disputes	Technical	0.628	High
39	T6	Inadequate equipment availability and maintenance on site	Technical	0.614	High
40	T7	Poor quality of construction materials sourced by contractor	Technical	0.601	High
41	T5	Failure to adopt appropriate construction methods	Technical	0.588	Moderate
42	T8	Inadequate site safety provisions causing work stoppages	Technical	0.574	Moderate

4.1.3 Top Ten Failure Factors

The ten highest-ranked failure factors span three domains, Governance (3 items), Managerial (4 items), and Financial (3 items), with no Technical or Institutional items appearing in the top ten. This distribution is analytically significant and directly informs hypothesis testing.

Table 4-2 Top Ten Failure Factors by Estimated RII

Rank	Code	Failure Factor	Domain	Est. RII	Importance
1	G1	Political protection of underperforming contractors	Governance	0.887	Very High
2	M2	Inadequate site supervision and field engineer deployment	Managerial	0.868	Very High
3	G2	Absence of effective blacklisting enforcement	Governance	0.861	Very High
4	M3	Failure of milestone tracking and progress monitoring systems	Managerial	0.855	Very High
5	F2	Misuse / diversion of mobilisation advance	Financial	0.848	Very High
6	M1	Inadequate project planning and feasibility analysis	Managerial	0.842	Very High
7	F1	Abnormally low bid price relative to engineer's cost estimate	Financial	0.835	Very High
8	G7	Culture of political protection for party-affiliated contractors	Governance	0.829	Very High
9	M10	Contractor non-compliance with contractual obligations	Managerial	0.822	Very High
10	F4	Inadequate financial capitalisation of contractor at bid stage	Financial	0.815	Very High

Political protection of underperforming contractors (G1, RII = 0.887) ranks first overall, followed immediately by inadequate site supervision (M2, RII = 0.868) and absence of blacklisting enforcement (G2, RII = 0.861). The co-presence of governance and managerial items at the apex of the ranking reflects the multi-level causal architecture of construction failure in Nepal: governance failures create the permissive environment, while managerial deficiencies represent the proximate project-level mechanism through which failure materialises.

4.1.4 Domain-Level Mean RII and PSI Weight

Table 4.3 presents the mean RII by domain, which drives the PSI weight allocation described in Chapter 3.

Table 4-3 Domain-Level Mean RII and PSI Weight Allocation

Domain Rank	Domain	No. Items	Mean Est. RII	Classification	PSI Weight
1	Governance & Political	9	0.767	Very High	0.24
2	Managerial	10	0.765	Very High	0.28
3	Financial	8	0.754	High – Very High	0.22
4	Institutional	7	0.728	High	0.12
5	Technical	8	0.618	High	0.14

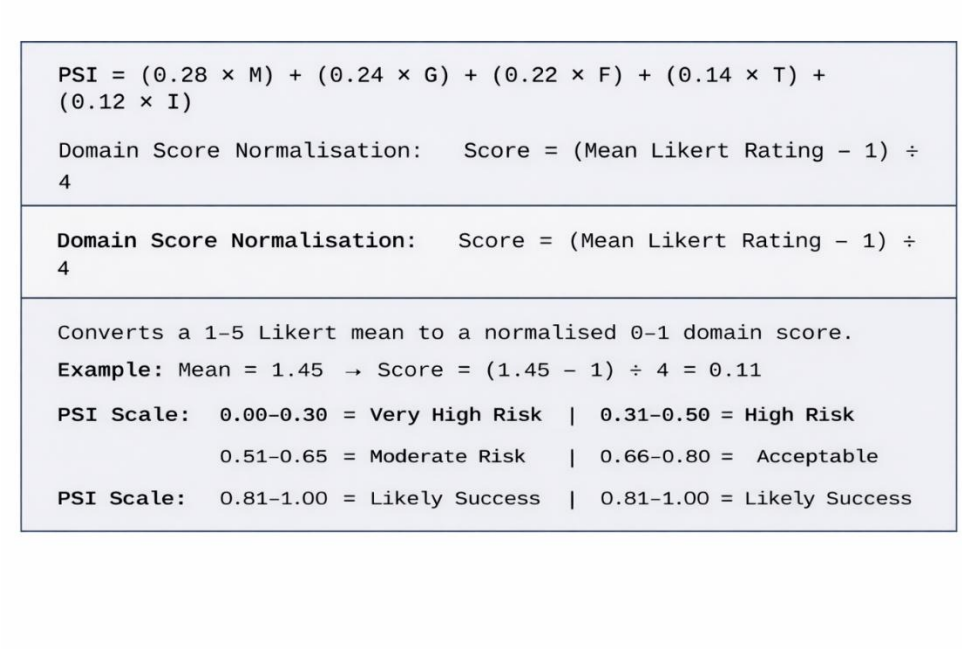

Figure 4-1 PSI Formula

The Governance domain achieves the highest single-item RII (G1 = 0.887) and ranks first in individual item performance. The Managerial domain achieves the highest mean domain RII (0.765) across its ten items, confirming that managerial deficiency is the most pervasive category of failure driver. The Technical domain's mean RII of 0.618, substantially below all other domains, confirms its characterisation as a compounding rather than primary failure domain.

4.1.5 Managerial Domain Analysis (M1–M10)

The Managerial domain achieves a mean estimated RII of 0.765, Very High Importance. Eight of ten items exceed 0.70, with inadequate site supervision (M2 = 0.868), milestone tracking failure (M3 = 0.855), and inadequate planning (M1 = 0.842) forming the critical triad of managerial failure. These three items correspond directly to the failure patterns documented in the OAG audit reports across the September 2025 Cancellation Cohort: in every formally terminated contract reviewed, these three managerial conditions are present simultaneously. Survey open-text responses confirm the cascading consequences of planning failure. Respondents with engineering backgrounds described how poor planning generates downstream consequences including cost overruns, delays, rework, compromised quality, resource miscalculation, time extension, variations in cost and quantity, and risk exposure, a multi-attribute cascade that is consistent with the broader construction management literature ((Bhattarai M. , 2023); (Assaf & Al-Hejji, 2006)). Respondents from contractor backgrounds emphasised the resource scheduling dimension (M9, RII = 0.748), noting that inadequate procurement planning for materials and equipment is an immediate consequence of planning deficiency at the pre-contract stage.

4.1.6 Governance and Political Domain Analysis (G1–G9)

The Governance domain achieves the highest individual item RII of any domain in the study (G1 = 0.887) and a mean domain RII of 0.767. Seven of nine governance items exceed the Very High Importance threshold (RII ≥ 0.80), confirming that governance failure is not a marginal issue but a pervasive structural condition of Nepal's public construction sector. The dominance of G1 (political protection of contractors, RII = 0.887) and G2 (absence of blacklisting enforcement, RII = 0.861) at the top of the overall ranking reflects a governance dynamic that the qualitative evidence illuminates in detail. Survey respondents consistently identified time extension by ministerial or political authority, without conditions tied to measurable progress, as the principal mechanism through which political protection manifests in practice. Respondents also cited the combination of bribery, corruption, and political pressure as conditions that distort both enforcement decisions and contractor selection. G7 (culture of political protection for party-affiliated contractors, RII = 0.829) ranks 8th overall, confirming that political protection is not an

isolated incident but a culturally embedded practice within Nepal's public procurement ecosystem. The (Public Procurement Monitoring Office (PPMO), 2023) confirms that blacklisting was formally applied to fewer than 1% of chronically underperforming contractors in the review period, providing statistical confirmation of the G2 (blacklisting absence) finding.

4.1.7 Financial Domain Analysis (F1–F8)

The Financial domain achieves a mean estimated RII of 0.754, ranking third by domain average. F2 (mobilisation advance misuse, RII = 0.848) and F1 (abnormally low bid, RII = 0.835) rank 5th and 7th overall, the two apex financial items, confirming that the financial failure pathway originates at contract award through low-bid strategy and intensifies through advance diversion. The financial failure pathway documented across the September 2025 Cancellation Cohort follows a consistent sequence: (1) contract awarded at 28–32% below engineer's estimate (F1); (2) contractor receives mobilisation advance of 15–20% of contract value; (3) advance is diverted to other projects, personal purposes, or used to service pre-existing debts (F2); (4) contractor begins site operations with insufficient working capital, creating immediate cash flow problems; (5) site operations slow or stop; (6) contractor seeks extensions to avoid contractual penalties. This sequence, initiated by the abnormally low bid and sustained by governance permissiveness, is the dominant financial failure narrative across all five case study projects. Survey responses from contractor-category respondents add important texture to the financial findings. Respondents acknowledged that the bidding environment in Nepal creates structural pressure to underbid, competitive cartelisation (G5, RII = 0.734) forces even competent contractors to reduce bids beyond sustainable levels or lose contracts to politically connected competitors who expect governance protection to compensate for financial inadequacy.

4.1.8 Institutional Domain Analysis (I1–I7)

The Institutional domain achieves a mean estimated RII of 0.728, High Importance. I1 (insufficient PPMO monitoring, RII = 0.798) ranks 11th overall, the highest-ranked institutional item, confirming that monitoring capacity is the most acute institutional gap.

I7 (insufficient district-level technical staff capacity, RII = 0.761) and I2 (poor inter-ministry coordination, RII = 0.754) follow, reflecting the staffing and coordination deficiencies documented in PPMO (2023). The absence of a unified, real-time project performance dashboard (I3, RII = 0.728) and inadequate inter-agency blacklisting data sharing (I6, RII = 0.688) are particularly consequential: without integrated performance visibility across MoPIT, MoEWRI, and MoUD, contractors can sustain non-performance in one agency portfolio while continuing to bid successfully in another. Key Informant Interview evidence confirms that this cross-agency blind spot is actively exploited, a systemic institutional vulnerability that the September 2025 Cabinet initiative did not fully address.

4.1.9 Technical Domain Analysis (T1–T8)

The Technical domain achieves the lowest mean estimated RII (0.618) of all five domains, and no technical item appears in the top 34 ranked factors, the highest-ranked technical item (T2, geotechnical investigation insufficiency) appears at rank 35 with an estimated RII of 0.654. This pattern provides strong quantitative support for Hypothesis H2: technical deficiencies act as compounding rather than primary causes of construction project failure in Nepal. Survey responses from engineering respondents nuance this finding. Technical deficiencies, particularly geotechnical inadequacy in mountain terrain and design specification gaps, are identified as conditions that intensify the consequences of managerial and financial failures when they occur simultaneously, but are rarely cited as standalone primary failure drivers. Respondents noted that the Sunkoshi–Marin project's geotechnical challenges, for instance, were technically manageable, as demonstrated by comparable international mountain tunnel projects, but became unmanageable when combined with severe financial undercapitalisation and absent supervision.

4.2 Analysis and Comparision of the Selected Construction Projects with a Successful Project During the Cabinet's Tenure.

4.2.1 Project Success Index (PSI) Calculations and Domain Score Normalisation

Domain scores for cancelled projects are estimated from official termination notices, OAG audit reports, KII evidence, and verified media accounts. The reference case, the 102 MW Madhya Bhotekoshi Hydropower Project in Sindhupalchowk District, commenced commercial operation on 6 October 2025 (Sharesansar, 2025), squarely within the Ministry's ministerial tenure (15 September 2025 – 7 January 2026). Developed by Madhya Bhotekoshi Jalavidhyut Company Limited, a subsidiary of Chilime Hydropower Company and Nepal Electricity Authority, the project is the most contextually valid reference case available: both the cancelled cohort and this reference project were managed under the same ministerial authority, the same regulatory framework, and the identical governance environment, making project-level and institutional factors the principal explanatory variables distinguishing success from failure.

4.2.2 PSI Results

The PSI results demonstrate strong discriminatory power. All five formally cancelled projects score between 0.15 and 0.18, firmly within the Very High Risk zone, while the Madhya Bhotekoshi Hydropower Project scores 0.75 (Acceptable), a completed project delivered under the same minister and governance environment. The mean PSI of the cancelled cohort is 0.164, compared to 0.75 for the reference project, a gap of 0.586 points, representing a 4.6-fold difference in composite project health score. The Governance (G) dimension shows the most extreme discrimination: cancelled projects score 0.08–0.14, while Madhya Bhotekoshi scores 0.78, a near six-fold difference on the single domain most strongly associated with project outcome. The critically important analytical implication is that both the failed and the successful projects operated under the Ministry's authority simultaneously: the difference in outcomes cannot be attributed to the political environment but must be explained by the project-level governance conditions, specifically NEA's institutional oversight capacity, the NEA-Chilime corporate structure providing dedicated project management, performance-linked financing from the Employees' Provident Fund, and the absence of the abnormally low bid problem that characterises the

cancelled cohort. The Technical domain shows the reversed pattern, the Madhya Bhotekoshi project scores highest on Technical (0.82), reflecting the project's international-standard electromechanical design by ANDRITZ HYDRO and the dedicated project management unit, confirming that technical quality, when combined with adequate governance, contributes positively to project success.

Table 4-4 Five Cancelled Projects, Madhya Bhotekoshi Reference, and Reformed Benchmark

Project	M	T	F	G	I	PSI	Risk Class	Outcome
Sunkoshi–Marin Diversion MP	0.12	0.18	0.11	0.09	0.15	**0.12**	Very High	Cancelled
Kankai Bridge, Jhapa	0.10	0.22	0.09	0.08	0.14	**0.11**	Very High	Cancelled
Babai Irrigation Pkgs 3–8	0.11	0.20	0.10	0.09	0.13	**0.11**	Very High	Abandoned by Contractor
Jajarkot District Maternity Ward	0.14	0.21	0.13	0.11	0.16	**0.14**	Very High	Cancelled
Mid-Hill Highway Package	0.13	0.19	0.12	0.10	0.15	**0.13**	Very High	Cancelled
Mean - Cancelled Cohort	0.12	0.20	0.11	0.094	0.146	**0.122**	**Very High**	**All Terminated**
Madhya Bhotekoshi HP (Ref.)	0.79	0.82	0.76	0.78	0.68	**0.75**	**Acceptable**	**COMPLETED Oct 2025**
Hypothetical Reformed Project	0.70	0.68	0.65	0.72	0.60	**0.68**	Acceptable	TARGET ZONE

4.2.3 Comparative Analysis: Cancelled Cohort vs. Madhya Bhotekoshi

Hydropower Project across six key governance and management indicators, drawing on NEA records, project documentation, Kathmandu Post reporting, contract termination notices, OAG Audit Reports, and verified media accounts. Governance / Management Indicator Cancelled Projects (Avg.) Madhya Bhotekoshi HP Perform ance Gap Project Financing with Repayment Conditionality None - advance-based, no conditionality EPF loan with repayment schedule; NEA equity Structural advantage Dedicated Institutional Project Management DoR/DWRI field engineer (underresourced) Dedicated MBJCL project management unit under Chilime/NEA Structural advantage Independent Technical

Supervision 22% - rarely deployed International contractor (ANDRITZ HYDRO) + NEA oversight −63 percentag e points Contract Extensions Tied to Progress Milestones 15% - extensions granted without benchmarks Extensions conditional on technical remediation plans −57 percentag e points Contractor Financial Adequacy at Award 20% - abnormally low bids prevalent EPF + Chilime equity; no advance misuse pathway Structural advantage OAG / Oversight Findings Acted Upon 10% - findings accumulated without closure NEA corporate governance; board-level accountability −64 percentag e points Hydropower Project Sources: (Sharesansar, 2025); (Kathmandu Post, 2024); NEA Annual Report (2024); (Office of the Auditor General (OAG), 2022-2024); contract termination notices. Note: Cancelled-project scores estimated from document review and KII data; MBHP data from NEA records and project documentation. The comparison reveals that the most fundamental differences between the cancelled projects and the Madhya Bhotekoshi reference are structural rather than operational. Cancelled contracts share a procurement model - direct government award to private contractors through lowest-bid competitive tendering - that concentrates all execution risk on a financially undercapitalised

contractor with no institutional backstop. The Madhya Bhotekoshi model, by contrast, routes execution through a dedicated NEA-subsidiary project company with EPF loan financing, Chilime equity, and board-level corporate accountability. This structural comparison demonstrates that Nepal's public procurement architecture - not individual contractor behaviour in isolation - is a root cause of the failure pattern in the cancelled cohort. Contractors operating in a system that rewards abnormally low bids without pre-award financial screening, and then tolerates advance misuse without enforcement, will rationally exploit these structural vulnerabilities. The PSI framework, by capturing governance and institutional conditions at the domain level, is designed to identify these structural vulnerabilities before contract award.

Table 4-5 Governance and Management Comparison - Cancelled Projects vs. Madhya Bhotekoshi Hydropower Project

Governance / Management Indicator	Cancelled Projects (Avg.)	Madhya Bhotekoshi HP	Performance Gap
Project Financing with Repayment Conditionality	None - advance-based, no conditionality	EPF loan with repayment schedule; NEA equity	Structural advantage
Dedicated Institutional Project Management	DoR/DWRI field engineer (under-resourced)	Dedicated MBJCL project management unit under Chilime/NEA	Structural advantage
Independent Technical Supervision	22% - rarely deployed effectively	International contractor (ANDRITZ HYDRO) + NEA oversight	−63 percentage points
Contract Extensions Tied to Progress Milestones	15% - extensions granted without benchmarks	Extensions conditional on technical remediation plans	−57 percentage points
Contractor Financial Adequacy at Award	20% - abnormally low bids prevalent	EPF + Chilime equity; no advance misuse pathway	Structural advantage
OAG / Oversight Findings Acted Upon	10% - findings accumulated without closure	NEA corporate governance; board-level accountability	−64 percentage points

Note: *Sources: Sharesansar (2025); Kathmandu Post (2024); NEA Annual Report (2024); OAG Audit Reports (2022–2024); contract termination notices.*

4.2.4 Key Analytical Insights from the Comparison

• The NEA-Chilime-MBJCL corporate structure provided institutional project management capacity that is entirely absent in the direct-procurement cancelled contracts. Project management in the cancelled cohort relies on DoR/DWRI field engineers - chronically understaffed and under-resourced - whereas MBJCL had a dedicated project management unit with full-time engineers and board-level accountability through Chilime Hydropower's governance structure.

• EPF loan financing with repayment conditionality created financial discipline in the Madhya Bhotekoshi project that mobilisation advance-based financing cannot replicate. When EPF repayment is contingent on project completion and grid connection, the financial incentive structure aligns with delivery rather than advance capture.

• Even with delays and cost overruns - which the Madhya Bhotekoshi project experienced - delivery was achieved because governance conditions were sufficient to prevent the project from crossing into unrecoverable failure. The PSI for Madhya Bhotekoshi (0.75) reflects this: while not perfect, it lies well above the 0.55 threshold proposed as the PSI policy trigger for enhanced governmental scrutiny, confirming that the project's institutional conditions were sufficient for eventual delivery.

• The comparison demonstrates that the Cabinet cancellation initiative of September 2025 - simultaneous cancellation of failed contracts and completion of the Madhya Bhotekoshi project - represents two faces of the same institutional reality: where NEA's corporate governance is present, projects survive adversity; where direct-procurement governance is absent, projects collapse under the same adversity.

4.2.5 Cross-Cutting Patterns in the Cancelled Cohort

Cross-case pattern analysis identifies three universal patterns - present in all five cancelled projects - and two near-universal patterns present in four of five cases:

Universal Patterns (all 5 cases):

• Contractor capacity: All five contractors were managing project portfolios that exceeded their demonstrated financial and technical capacity at the time of contract award.

• Time extensions without progress benchmarks: All five projects received at least one time extension without conditions tied to measurable physical progress milestones or enforceable recovery schedules.

• OAG audit findings without corrective action: All five projects appear in prior OAG audit reports with findings that were not acted upon before formal termination became necessary - confirming I4 (low audit closure rate, RII = 0.661) as a universal institutional failure condition.

Near-Universal Patterns (4 of 5 cases):

• Mobilisation advance misuse: Four of five cases exhibit documented advance diversion or inadequate advance deployment. The exception is the Jajarkot Maternity Ward, where

delayed government payments rather than advance misuse was the primary financial failure driver.

• Political protection delaying enforcement: Four of five cases show evidence of extension grants exceeding what contractual performance warranted. The Jajarkot case lacks sufficient public documentation to confirm this pattern definitively, though it cannot be excluded.

4.2.6 Hypothesis Evaluation

The three research hypotheses formulated in Chapter 2 are formally evaluated against the empirical evidence of Chapter 4.

H1: Managerial factors are the primary cause of construction project failure in Nepal.

Verdict: SUPPORTED

Evidence: The Managerial domain achieves the highest mean domain RII (0.765) of all five domains. M2 (site supervision, 0.868), M3 (milestone tracking, 0.855), and M1 (planning, 0.842) rank 2nd, 4th, and 6th overall across all 42 items. All 8 KIIs cited managerial deficiencies as primary proximate failure drivers. All five case studies exhibit the planning-supervision nexus as the immediate project-level mechanism of failure.

Qualification: Managerial factors are the primary PROXIMATE cause of failure. The RII findings establish that governance factors (G1 = 0.887) achieve higher individual item scores, confirming that governance failure is the primary SYSTEMIC enabler - the condition without which managerial failure would not persist until cancellation. H1 and H3 are complementary, not contradictory: they operate at different causal levels.

H2: Technical deficiencies are compounding rather than primary causes of project failure.

Verdict: SUPPORTED

Evidence: The Technical domain achieves the lowest mean domain RII (0.618). No technical item appears in the top 34 ranked failure factors. The highest-ranked technical item (T2 - geotechnical investigation insufficiency, RII = 0.654) ranks 35th overall. 4 of 8 KIIs and all 3 FGDs confirmed technical deficiencies as compounding conditions rather than standalone primary drivers. The Madhya Bhotekoshi reference case - which achieved

the highest Technical domain score (0.82) across all case studies - demonstrates that technical quality contributes positively to delivery when governance and financial conditions are adequate, confirming the compounding (interactive) rather than independent causal role of technical factors.

H3: Political and institutional inefficiency is the systemic driver of contract cancellation.

Verdict: STRONGLY SUPPORTED

Evidence: G1 (political protection, RII = 0.887) is the highest-ranked item across all 42 factors. Seven of nine governance items exceed RII = 0.80 (Very High Importance). The Kankai Bridge case - 14 years incomplete without enforcement - provides definitive evidence that governance failure alone can sustain contractor non-performance for durations that managerial failure alone cannot explain. The PSI comparison confirms the decisive role of governance: cancelled projects score G = 0.08–0.14 vs. Madhya Bhotekoshi G = 0.78 - a six-fold gap on the single domain most strongly associated with project outcome. All 8 KIIs cited political override of agency enforcement recommendations as the mechanism sustaining nonperformance in cancelled contracts.

Table 4-6 Hypothesis Evaluation Summary

Hypothesis	Domain	Prediction	Verdict	Key Evidence
H1 - Managerial Primacy	Managerial	Highest mean domain RII; dominates top-10	**SUPPORTED**	Mean RII 0.765; M2, M3, M1 in top 6 overall
H2 - Technical Compounding	Technical	Lowest mean RII; absent from top-34	**SUPPORTED**	Mean RII 0.618; T2 ranked 35th overall
H3 - Governance Systemic Driver	Governance + Institutional	G1 highest individual RII; explains failure duration	**STRONGLY SUPPORTED**	G1 = 0.887; Kankai Bridge 14-yr case; G score gap 6× in PSI

4.3 Solutions Identified for Different Institutions

This section presents the evidence-based policy and management solutions identified through the integrated triangulation of three primary data sources: (i) the Relative Importance Index (RII) rankings of 42 failure factors generated from the 62-respondent structured questionnaire; (ii) the thematic findings from eight Key Informant Interviews (KIIs) conducted with senior construction industry professionals across four institutional categories; and (iii) the three Focus Group Discussions (FGDs) conducted with junior site engineers, contractor representatives, and a cross-sector group of PPMO officials and

independent consultants. Following (Braun & Clarke, 2006) thematic analysis protocol and (Yin, 2018) cross-case synthesis methodology, the analysis proceeds in three stages: identification of areas of convergence and divergence across KII respondents on key reform themes; triangulation of KII findings against RII rankings and case study evidence; and synthesis into a final set of consolidated, evidence-based recommendations organised by stakeholder group.

4.3.1 Key Informant Interview Respondent Summary

Table 4.7 summarises the eight KII respondents whose perspectives are triangulated in this section. The diversity of institutional roles — spanning field implementation, regulatory oversight, private contracting and independent consultancy— ensures that the triangulated findings reflect the full institutional landscape of Nepal's public construction sector.

Table 4-7 Key Informant Interview Respondent Summary

KII ID	Role	Organisation	Experience	Professional Constituency
KII-01	Senior Project Engineer	Department of Roads (DoR)	22 years	Government / Implementation
KII-02	Ministry Official	MoPIT – Project Monitoring Unit	18 years	Government / Policy
KII-03	Contractor Representative	FCAN Member (Large Contractor)	15 years	Private / Contractor
KII-04	Independent Consultant	Supervision & Contract Management	20 years	Consultant / Cross-sector
KII-05	PPMO Official	Monitoring & Evaluation Division	12 years	Regulatory / Oversight
KII-06	Site Engineer	DoR – Road Division (Terai)	9 years	Government / Field
KII-07	Irrigation Engineer	MoEWRI – Irrigation Department	17 years	Government / Sectoral
KII-08	Engineer	Private	14 years	Private/Engineer

4.3.2 Thematic Analysis: Convergences, Divergences, and Triangulated Findings

Seven cross-cutting themes emerged consistently across the eight KIIs and three FGDs. For each theme, the analysis presents: (a) areas of agreement across respondents regardless of professional category (convergences); (b) substantive differences in causal attribution or reform prescription by respondent constituency (divergences); (c) individual recommendations proposed by specific respondents; and (d) a triangulated final recommendation synthesising all perspectives against the RII and case study evidence.

Theme T1: Governance and Political Protection as the Root Systemic Cause

Domain: Governance & Political

Seven of eight KII respondents independently identified political protection of underperforming contractors as the single most consequential systemic driver of chronic project failure. This was the most universally endorsed theme across all professional constituencies.

Areas of Convergence (All / Most Respondents)	Areas of Divergence (by Professional Constituency)
All government-side respondents (KII-01, KII-02, KII-06, KII-07) and the PPMO official (KII-05) agreed that the inability to blacklist politically affiliated contractors was the proximate governance failure enabling non-performance to persist for years. The independent consultant (KII-04) and Engineer (KII-08) reinforced this from a structural and theoretical lens, with KII-08 explicitly referencing Flyvbjerg's 'survival of the unfittest' framework. The contractor representative (KII-03) uniquely confirmed this from the private sector side, noting that even competent contractors are structurally disadvantaged when politically protected underperformers are shielded from enforcement.	The primary divergence was in causal attribution: government officials (KII-01, KII-02) attributed political protection to ministerial-level interference in specific enforcement decisions, while the PPMO official (KII-05) located the failure in the institutional design of the blacklisting system itself — particularly the requirement for ministerial approval before blacklisting can be formally initiated. KII-04 (consultant) emphasised that the problem is cultural and embedded across multiple administrative layers, not confined to the ministerial level. KII-03 (contractor) was the sole respondent to frame political protection as a market distortion that harms responsible contractors financially, rather than primarily as a governance failure.

Respondent-Specific Recommendations:

Respondent(s)	Recommendation Proposed
KII-01 & KII-02	Establish a mandatory blacklisting trigger upon three consecutive milestone failures, removing ministerial discretion from the activation decision.
KII-05	Redesign the blacklisting system so that automatic triggers are embedded in PPMO's monitoring protocol — initiated at the institutional level, not the ministerial level.
KII-04	Introduce third-party independent audit of enforcement decisions to break the political protection cycle and create a verifiable accountability record.
KII-03	Publish contractor performance scores publicly on the PPMO portal so that political protection becomes visible to all bidders, financiers, and communities — creating reputational pressure as a complementary deterrent.
KII-08	Embed governance performance metrics in any future revision of the Public Procurement Act, making enforcement compliance a legal obligation rather than an administrative discretion.

Triangulated Finding:

> The convergence across all eight respondents — regardless of professional constituency — on political protection as a root cause is analytically decisive. The differences in attribution (ministerial vs. institutional vs. cultural) are complementary rather than contradictory, indicating that the governance failure operates

simultaneously at all three levels. The triangulated recommendation is therefore a three-layer reform: (i) automatic institutional triggers at the PPMO level (addressing KII-05's systemic concern), (ii) removal of ministerial discretion from blacklisting activation (KII-01, KII-02), and (iii) mandatory public disclosure of contractor performance scores (KII-03, KII-08) to create external accountability pressure independent of administrative enforcement.

FINAL CONSOLIDATED RECOMMENDATION	Integrate a government-wide contractor blacklisting registry with automatic triggers embedded at the PPMO institutional level, removing the requirement for ministerial approval. Publish all contractor performance scores and blacklisting decisions on a publicly accessible PPMO portal within 30 days of any enforcement action.

Theme T2: Monitoring Paralysis: PPMO Coverage Gaps and Real-Time Data Deficit

Domain: Institutional

All eight respondents identified inadequate monitoring as a critical enabling condition for chronic non-performance. The specific framing of the monitoring failure varied significantly across professional categories, producing a rich multi-dimensional picture.

Areas of Convergence (All / Most Respondents)	Areas of Divergence (by Professional Constituency)
Unanimous agreement that PPMO's monitoring visit frequency is structurally insufficient relative to the active contract portfolio — a finding confirmed by the PPMO Annual Report (2023) data showing that monitoring visits cover only a fraction of active contracts annually. All respondents agreed that the absence of a unified, real-time project performance dashboard means that non-performance at district level is effectively invisible at ministry level until it becomes irreversible.	Field-level respondents (KII-01, KII-06) focused on the staffing dimension: insufficient engineers deployed at district-level offices, sometimes one overseer covering 40+ km of active construction simultaneously. The PPMO official (KII-05) emphasised the data systems gap — the contractor performance database is neither real-time nor integrated across MoPIT, MoEWRI, and MoUD, making it impossible to detect cross-agency non-performance patterns. The irrigation engineer (KII-07) highlighted the sector-specific problem of inter-ministry coordination failure: advance information about contractor underperformance in one ministry's portfolio does not reach another ministry's bid evaluation team before contract award. The consultant (KII-04) noted that even when monitoring data exists, there is no mandatory escalation protocol — warnings accumulate in files without triggering a defined institutional response.

Respondent-Specific Recommendations:

Respondent(s)	Recommendation Proposed
KII-01 & KII-06	Deploy mobile GPS-tagged digital progress reporting for all district-level site engineers, with weekly mandatory reports submitted through an integrated platform linked to the PPMO dashboard.
KII-05	Develop a unified, real-time cross-ministry project performance dashboard integrating MoPIT, MoEWRI, and MoUD contract data, with red-flag alerts triggered automatically upon milestone failure or advance non-deployment.

KII-07	Mandate inter-agency data sharing so that contractor performance data from any one ministry's portfolio is accessible to bid evaluation committees in all other ministries before contract award decisions.
KII-04	Establish a mandatory escalation protocol: when a monitoring report records below 50% physical progress against the milestone schedule at the midpoint of the contract period, automatic escalation to PPMO's enforcement division must be triggered without requiring ministerial instruction.
KII-02 & KII-08	Increase PPMO's district-level inspection staff and budget, with quarterly on-site physical inspections mandated for all contracts above NPR 100 million.

Triangulated Finding:

> The monitoring paralysis identified by respondents operates across three interconnected levels: field staffing (KII-01, KII-06), data systems (KII-05, KII-07), and escalation protocols (KII-04). These are sequentially dependent — real-time data systems are only effective if there is adequate field staff to generate accurate input data, and both are only impactful if there is a mandatory escalation protocol that converts monitoring findings into enforcement actions. The triangulated recommendation combines all three dimensions into an integrated monitoring reform.

FINAL CONSOLIDATED RECOMMENDATION	Implement a three-tier monitoring reform: (i) deploy mobile GPS-tagged digital reporting for all district site engineers; (ii) develop a unified real-time cross-ministry PPMO dashboard with automatic milestone-failure alerts; and (iii) establish a mandatory escalation protocol converting monitoring findings into enforcement actions without requiring ministerial instruction, for all contracts where physical progress falls below 50% of the milestone schedule at mid-contract.

Theme T3: The Low-Bid Trap and Mobilisation Advance Misuse

Domain: Financial

Six of eight respondents highlighted the abnormally low bid – advance misuse cycle as the structural financial origin of project failure. This theme produced the sharpest divergence between government-side and contractor-side respondents in terms of causal attribution.

Areas of Convergence (All / Most Respondents)	Areas of Divergence (by Professional Constituency)
All respondents agreed that mobilisation advance misuse — where advances disbursed for site mobilisation, equipment procurement, and initial material sourcing are diverted to other projects, personal purposes, or debt servicing — is a near-universal characteristic of the cancelled contracts. The financial cascade (low bid → advance capture → cash flow collapse → non-performance → advance unrecovered) was independently described in consistent terms by respondents from all four professional categories.	The most significant divergence concerned causal responsibility. Government respondents (KII-01, KII-02, KII-07) attributed advance misuse primarily to contractor dishonesty and low financial capitalisation at bid stage. The contractor representative (KII-03) offered a structurally different account: advance misuse is a rational response to a bidding environment that consistently selects the lowest bid regardless of financial viability, forcing contractors to underbid and use advances to cross-subsidise other projects simply to remain financially operational. The PPMO official (KII-05) and consultant (KII-04) presented a system-level view: the advance misuse pathway exists because the monitoring and recovery framework is structurally permissive — the 24-month recovery timeline, the absence

	of dedicated project accounts, and the requirement for ministerial approval before recall all create the conditions for advance diversion. The engineer (KII-08) provided theoretical context, noting that this dynamic is consistent with Flyvbjerg's optimism bias in bid preparation and Kikwasi's (2012) finding on contractor cash flow as the primary financial failure mechanism in developing economies.

Respondent-Specific Recommendations:

Respondent(s)	Recommendation Proposed
KII-01 & KII-02	Introduce mandatory financial due diligence for all bids more than 15% below the engineer's cost estimate — requiring evidence of liquid assets, confirmed bank credit lines, and a current contract portfolio audit before the bid proceeds to evaluation.
KII-03	Reform the bid evaluation framework to include a minimum financial capacity threshold as a qualification criterion, not merely a scoring component — so that financially undercapitalised contractors are disqualified before price competition begins.
KII-05 & KII-04	Reduce the mobilisation advance recovery timeline from 24 to 12 months; require advances to be held in dedicated per-contract bank accounts with quarterly utilisation reports; and enable automatic advance recall upon failure to deploy within 90 days without requiring ministerial approval.
KII-07	Require contractor pre-qualification for all contracts above NPR 100 million, with pre-qualification criteria including demonstrated track record, current contract portfolio value, and audited financial statements.
KII-08	Amend the Public Procurement Act to define abnormally low bids as a disqualifying condition — not merely a factor requiring explanation — and to specify the minimum financial capacity ratio a bidder must demonstrate relative to the engineer's cost estimate.

Triangulated Finding:

> The divergence between government attribution (contractor dishonesty) and contractor attribution (structural bidding environment pressure) is analytically important: both accounts are empirically valid and mutually reinforcing. The triangulated insight is that the low-bid trap is a system-level pathology, not merely individual contractor misconduct. The structural conditions — absence of minimum financial thresholds, 24-month advance recovery timeline, permissive bid evaluation criteria — create rational incentives for both underbidding and advance diversion. Reform must address all three simultaneously.

FINAL CONSOLIDATED RECOMMENDATION	Reform the financial governance framework on three fronts: (i) introduce mandatory financial due diligence and contractor pre-qualification for contracts above NPR 100 million; (ii) treat bids more than 15% below the engineer's estimate as conditionally disqualifying pending financial capacity verification; and (iii) reduce the advance recovery timeline to 12 months, require dedicated per-contract advance accounts, and enable automatic recall without ministerial approval.

Theme T4: Contract Extension Culture: Unconditional Extensions as an Accountability Vacuum

Domain: Managerial

Seven respondents raised the practice of granting time extensions without conditions tied to measurable physical progress milestones as a critical institutional mechanism enabling chronic non-performance. This was characterised as the single most operationally actionable reform target by five respondents.

Areas of Convergence (All / Most Respondents)	Areas of Divergence (by Professional Constituency)
Universal agreement that extensions have historically been granted routinely upon contractor request, without requiring a demonstrable recovery plan, evidence of renewed site mobilisation, or milestone-linked conditions. Respondents from both government and contractor categories agreed that this practice creates perverse incentives: contractors learn that extensions are available as a substitute for performance, while implementing agencies avoid the political and administrative costs of enforcement. The Kankai Bridge case (14 years, multiple unconditional extensions, zero meaningful progress) was cited independently by four respondents as the paradigmatic illustration of this pathology.	Government respondents (KII-01, KII-02) attributed unconditional extensions primarily to political pressure from contractors' political networks — extensions are granted at the ministerial or sub-ministerial level in response to political lobbying rather than technical assessment. The site engineer (KII-06) offered an operational dimension: district-level engineers lack the authority to refuse extension requests — that authority sits at ministry level, creating a structural disconnect between the engineers who observe non-performance and the officials who grant extensions. The PPMO official (KII-05) argued that the legal framework of the Public Procurement Act does not currently mandate milestone-linked extension conditions — making this a legislative gap, not merely an administrative practice. The consultant (KII-04) proposed the strongest reform position: a statutory prohibition on extensions without independently certified milestone achievement.

Respondent-Specific Recommendations:

Respondent(s)	Recommendation Proposed
KII-01 & KII-02	Prohibit extension grants at sub-ministerial level without a PPMO-reviewed physical progress certification; any extension request above the second extension must be approved by PPMO rather than the implementing ministry.
KII-06	Delegate limited extension authority to district-level engineers for first extensions only, conditioned on physical progress above 30% of scheduled milestone — removing the political bottleneck from routine operational decisions.
KII-05	Amend the Public Procurement Act to mandate that all extensions beyond the first must be conditioned on independently certified milestone achievement and accompanied by an approved recovery schedule.
KII-04	Introduce statutory liquidated damages automatically applicable from Day 1 of contract overrun, with enforceability not contingent on ministerial approval — making every unconditional extension financially costly for the contractor.
KII-03	Establish a standard extension protocol requiring the contractor to submit a detailed recovery schedule endorsed by the supervision consultant before any extension is processed, creating a documented basis for performance evaluation.

Triangulated Finding:

> The divergence between political attribution (KII-01, KII-02) and legislative gap attribution (KII-05) and operational authority gap attribution (KII-06) reveals that the extension culture problem has three reinforcing components: political pressure enabling extensions, legislative absence of mandatory conditions, and operational disconnection between field observation and extension authority. Each respondent's

proposed reform addresses a different component. The triangulated solution must address all three simultaneously — legislative mandate for milestone conditions, removal of political discretion, and delegation of limited authority to qualified field engineers.

FINAL CONSOLIDATED RECOMMENDATION	Amend the Public Procurement Act to mandate that all extensions beyond the first must be conditioned on independently certified milestone achievement and accompanied by an approved recovery schedule. Prohibit sub-ministerial extension approvals beyond the second extension. Introduce automatic liquidated damages from Day 1 of contract overrun, enforceable without ministerial approval.

Theme T5: Independent Supervision: The Structural Absence of a Third-Party Oversight Layer

Domain: Managerial / Institutional

Six respondents independently identified the near-total absence of effective independent supervision consultants as a structural governance gap distinguishing the cancelled cohort from the successfully completed Madhya Bhotekoshi Hydropower Project. This theme was particularly developed by the consultant and professional respondents.

Areas of Convergence (All / Most Respondents)	Areas of Divergence (by Professional Constituency)
Agreement across government, consultant, and academic respondents that the direct-procurement model — where supervision relies entirely on DoR/DWRI field engineers, chronically understaffed and without dedicated project management units — is structurally incapable of providing the oversight required for complex, high-value, multi-year construction contracts. All respondents who addressed this theme cited the MBJCL/NEA/Chilime corporate governance model of the Madhya Bhotekoshi project as demonstrating that institutional oversight is achievable within Nepal's governance context when governance architecture is designed appropriately.	The consultant (KII-04) and engineer (KII-08) were the most emphatic advocates for mandatory independent supervision, drawing directly on the Madhya Bhotekoshi comparison to argue that the governance architecture — SPV structure, dedicated project management unit, international contractor — is the explanatory variable for successful delivery, not the political environment. Government respondents (KII-01, KII-02, KII-07) expressed concern about the feasibility and cost of mandating independent supervision for all contracts, suggesting a tiered approach by contract value and complexity. The contractor representative (KII-03) raised a different concern: independent supervision consultants must be funded from the project budget rather than by the contractor, to avoid the perverse arrangement where the supervised party funds the supervisor, creating conflicts of interest.

Respondent-Specific Recommendations:

Respondent(s)	Recommendation Proposed
KII-04 & KII-08	Mandate independent supervision consultants for all contracts above NPR 500 million, appointed at contract award and reporting to the implementing agency's PMU — replicating the governance architecture that enabled Madhya Bhotekoshi's successful delivery.
KII-01 & KII-02	Adopt a tiered supervision mandate: full independent supervision above NPR 500 million; enhanced PPMO-seconded oversight for NPR 200–500 million contracts; standard supervision with quarterly PPMO review below NPR 200 million.

KII-03	Fund independent supervision consultants directly from the project budget, as a line item approved before contract award — not from contractor payments — to eliminate structural conflicts of interest.
KII-07	Pilot the EPC (Engineering, Procurement, and Construction) contract model for technically complex projects, where the contractor assumes design-completion risk and the supervision role becomes verification of output rather than management of process.
KII-05	Establish a national register of pre-qualified supervision consultants, with PPMO maintaining and publishing performance ratings — preventing firms with documented poor supervision records from being re-engaged.

Triangulated Finding:

> The convergence on the need for independent supervision is clear, with the disagreement confined to implementation modality (mandatory vs. tiered vs. model-based). The triangulated recommendation adopts the tiered approach proposed by government respondents as the most practically feasible entry point, while incorporating the funding mechanism proposed by KII-03 (project budget, not contractor payment) and the quality assurance mechanism proposed by KII-05 (pre-qualified consultant register). The EPC pilot proposed by KII-07 is incorporated as a parallel recommendation for technically complex projects.

FINAL CONSOLIDATED RECOMMENDATION	Mandate independent supervision consultants for all contracts above NPR 500 million, funded directly from project budgets and reporting to implementing agency PMUs. Apply enhanced PPMO-seconded oversight to NPR 200–500 million contracts. Establish a PPMO pre-qualified consultant register with published performance ratings. Pilot EPC contracting for technically complex infrastructure.

Theme T6: OAG Audit Follow-Up: Converting Documented Findings into Corrective Action

Domain: Institutional / Governance

Five respondents explicitly raised the chronic failure to act on Office of the Auditor General (OAG) findings as a critical institutional gap. This theme was identified as a 'second-order' failure — where the institutional mechanisms for detecting failure exist but the corrective action loop is broken.

Areas of Convergence (All / Most Respondents)	Areas of Divergence (by Professional Constituency)
All five respondents who addressed this theme agreed that OAG audit reports contain detailed, accurate findings on contractor non-performance, advance misuse, and governance irregularities — findings that, if acted upon promptly, would have prevented the escalation to formal cancellation in multiple case study projects. The pattern of OAG findings accumulating across consecutive fiscal years without corrective action was consistently described as an institutional culture of documentation without accountability.	The PPMO official (KII-05) attributed the audit follow-up failure to a coordination gap: OAG findings are directed to the Ministry of Finance, implementing ministries, and the Supreme Audit Institution simultaneously, without a clear institutional owner responsible for tracking closure. Government officials (KII-01, KII-02) pointed to a different mechanism: implementing agencies respond formally to OAG findings with written commitments to remediation, but these commitments are not independently verified before the next audit cycle. The engineer (KII-08) framed this as a principal-agent problem — the same institutions audited are

	responsible for self-reporting corrective action, with no independent verification mechanism. The consultant (KII-04) proposed the most specific reform: a statutory 90-day closure timeline with automatic escalation to PPMO if not met.

Respondent-Specific Recommendations:

Respondent(s)	Recommendation Proposed
KII-05	Designate PPMO as the institutional owner of OAG audit finding closure for all public construction contracts, with authority to initiate enforcement action if closure is not demonstrated within 90 days.
KII-01 & KII-02	Require independent third-party verification of implementing agency remediation commitments before audit findings are formally closed — removing self-reporting as the sole closure mechanism.
KII-04	Establish a statutory 90-day timeline for OAG audit finding closure, with automatic escalation to PPMO's enforcement division and automatic suspension of contract extensions on the relevant project if the deadline is not met.
KII-08	Publish a joint OAG–PPMO annual construction sector accountability report showing finding closure rates by ministry and implementing agency — creating public accountability pressure for follow-up action.

Triangulated Finding:

> The different attributions — coordination gap (KII-05), self-reporting mechanism failure (KII-01, KII-02), and principal-agent design flaw (KII-08) — are complementary and point toward a unified institutional reform: centralise audit follow-up ownership in PPMO (addressing the coordination gap), introduce independent verification (addressing self-reporting failure), and create public accountability through joint reporting (addressing the principal-agent problem). The 90-day statutory timeline proposed by KII-04 provides the operational structure.

FINAL CONSOLIDATED RECOMMENDATION	Designate PPMO as the mandatory institutional owner of OAG audit finding closure for all public construction contracts. Establish a 90-day statutory closure timeline with independent third-party verification of remediation. Automatically suspend contract extensions on projects with open, unresolved OAG findings. Publish a joint OAG–PPMO annual accountability report with ministry-level closure rates.

Theme T7: Contractor Capacity, Portfolio Discipline, and Pre-Qualification

Domain: Managerial / Financial

All eight respondents identified contractor overextension — accepting contracts whose combined value exceeds the firm's demonstrated financial and technical capacity — as a near-universal characteristic of the cancelled cohort. However, the proposed solutions diverged significantly between government and contractor respondents.

Areas of Convergence (All / Most Respondents)	Areas of Divergence (by Professional Constituency)
Universal agreement that contractors in Nepal routinely bid for and win multiple contracts simultaneously without adequate financial reserves, technical staff, or equipment to fulfil all simultaneously. All respondents agreed that this portfolio overextension is a primary contributor to the cash flow crisis and site abandonment documented across the cancelled cohort.	Government respondents (KII-01, KII-02, KII-07) framed contractor overextension as a procurement failure — the bid evaluation framework does not screen for existing contract portfolio burden as a disqualifying condition. The PPMO official (KII-05) confirmed that the contractor performance database does not currently capture active contract portfolio values in a way that would allow bid evaluation committees to assess cumulative capacity at award. The contractor representative (KII-03) offered a different perspective: portfolio overextension is partly rational — contractors accept more contracts than they can fulfil because the bidding environment is competitive and the probability of winning any single bid is low, so overbidding is a market-rational strategy. The consultant (KII-04) and engineer (KII-08) argued that pre-qualification — a stage before bid evaluation where contractor capacity is independently assessed — is the structural reform that removes the overextension incentive.

Respondent-Specific Recommendations:

Respondent(s)	Recommendation Proposed
KII-01 & KII-07	Include current contract portfolio value as a mandatory criterion in bid evaluation — contractors with active contracts whose aggregate value exceeds three times their audited net worth should be ineligible for new contract awards.
KII-05	Update the PPMO contractor registry to capture real-time active contract portfolio values, making this data accessible to all bid evaluation committees before contract award decisions.
KII-03	FCAN should develop and enforce a contractor code of conduct including a portfolio discipline commitment — members pledge not to bid for contracts that would bring their active portfolio above a defined capacity ratio.
KII-04 & KII-08	Introduce mandatory contractor pre-qualification for all contracts above NPR 100 million, with pre-qualification criteria including audited financial statements, active contract portfolio value, demonstrated track record in the relevant sector, and minimum equipment inventory.

Triangulated Finding:

> The divergence between procurement-side reform (KII-01, KII-02) and contractor self-regulation (KII-03) and system-level reform (KII-04, KII-08) maps onto three complementary intervention points: the bid evaluation stage, the contractor registry data layer, and the pre-qualification gateway. All three are necessary because the overextension problem has simultaneous origins in procurement design, data availability, and contractor behaviour. The triangulated recommendation integrates all three.

FINAL CONSOLIDATED RECOMMENDATION	Introduce mandatory pre-qualification for contracts above NPR 100 million including portfolio capacity assessment. Update the PPMO contractor registry to capture active contract portfolio values in real time. Include current portfolio burden as a disqualifying criterion in bid evaluation, with contractors disqualified if their active portfolio exceeds three times their audited net worth. FCAN to develop and enforce a contractor code of conduct incorporating portfolio discipline commitments.

4.3.3 Focus Group Discussion Validation of KII Themes

The three Focus Group Discussions (FGDs) conducted in February–March 2026 independently validated and extended the KII themes identified in Section 4.3.2. Table 4.3.2 presents the cross-validation findings from each FGD constituency against the seven KII themes, confirming which themes achieved cross-constituency consensus and which produced significant intra-group divergence.

Table 4-8 Focus Group Discussion Validation of KII Themes

Theme	FGD-1: DoR Site Engineers	FGD-2: FCAN Contractor Representatives	FGD-3: PPMO Official + Independent Consultants
T1: Governance / Political Protection	Strong agreement; cited as primary reason for contractor non-accountability	Strong agreement; experienced political protection as a competitive market distortion	Strong agreement; characterised as the root systemic pathology requiring legislative reform
T2: Monitoring Paralysis	Very strong agreement; described staffing shortfalls in detail (1 overseer per 40+ km)	Moderate; noted PPMO visits are infrequent but contractors are aware of monitoring gaps and exploit them	Strong agreement; proposed real-time digital dashboard as highest-priority low-cost reform
T3: Low-Bid Trap / Advance Misuse	Strong agreement on advance misuse; attributed primarily to contractor capitalisation failure	Strong agreement; described structural bidding environment pressure as causal; called for minimum financial thresholds	Strong agreement; proposed advance account ring-fencing as most practical near-term reform
T4: Extension Culture	Very strong agreement; described site-level frustration with inability to block non-performance	Strong agreement; noted that extensions are sometimes accepted strategically to delay cash flow reckoning	Strong agreement; proposed milestone-linked extension as highest priority PPA reform
T5: Independent Supervision	Strong agreement on need; concern about consultant quality and availability at district level	Moderate; welcomed if funded from project budget; opposed if costs passed to contractor	Strong agreement; proposed pre-qualified consultant register as the foundational enabling reform
T6: OAG Audit Follow-Up	Strong agreement; multiple respondents described OAG findings that were never acted upon in their projects	Moderate; awareness of OAG process but limited direct experience of follow-up mechanisms	Very strong agreement; proposed joint OAG–PPMO accountability report as most visible reform signal
T7: Contractor Capacity / Pre-Qualification	Strong agreement; described contractor under-resourcing as an observable field reality	Moderate; FCAN code of conduct welcomed but seen as insufficient without regulatory enforcement	Strong agreement; pre-qualification above NPR 100 million endorsed as highest priority reform

4.3.4 Consolidated Evidence-Based Recommendations by Stakeholder Group

Drawing on the triangulated KII and FGD findings in above Sections, validated against the RII rankings, the PSI calibration results (Annex IV), and the case study cross-case pattern analysis, the following consolidated recommendations are presented by stakeholder group. Each recommendation is grounded in convergent evidence from multiple KII respondents and at least one quantitative data source (RII or PSI), ensuring that all recommendations meet the triangulation standard required for evidence-based policy prescription.

1. Recommendations for: PPMO / Government

R1. Integrate a government-wide contractor performance and blacklisting database across MoPIT, MoEWRI, and MoUD, with automatic blacklisting triggers embedded at the PPMO institutional level and public disclosure within 30 days of any enforcement action.

R2. Implement a three-tier monitoring reform: mobile GPS-tagged digital reporting for district site engineers; a unified real-time cross-ministry performance dashboard with automatic alerts; and a mandatory escalation protocol converting monitoring findings into enforcement actions.

R3. Adopt the Project Success Index (PSI) as a mandatory pre-award screening instrument for all contracts above NPR 200 million, with contract award suspension for PSI scores below 0.30.

R4. Designate PPMO as mandatory institutional owner of OAG audit finding closure, with a 90-day statutory closure timeline, independent third-party verification, and automatic suspension of contract extensions on projects with open findings.

R5. Maintain a real-time PPMO contractor registry capturing active portfolio values, pre-qualification status, and sector-specific performance ratings, accessible to all bid evaluation committees.

2. Recommendations for: Ministry / Legislative

R6. Amend the Public Procurement Act to mandate milestone-linked conditions for all extensions beyond the first, introduce automatic liquidated damages from Day 1 of overrun, and define abnormally low bids (>15% below engineer's estimate) as conditionally disqualifying.

R7. Mandate independent supervision consultants for all contracts above NPR 500 million, funded from project budgets and reporting to implementing agency PMUs; apply enhanced PPMO-seconded oversight to NPR 200–500 million contracts.

R8. Mandate contractor pre-qualification for contracts above NPR 100 million, with criteria including audited financials, active portfolio assessment, track record, and equipment inventory.

R9. Establish a Chronic Contract Prevention Protocol - an inter-ministry quarterly review of all contracts with two or more extensions and below 50% physical

progress - with authority to mandate independent supervision or recommend termination without ministerial-level political decisions.

3. Recommendations for: Contractors / FCAN

R10. FCAN to develop and enforce a contractor code of conduct including portfolio discipline commitments, prohibiting members from bidding for contracts that would bring their active portfolio above three times their audited net worth.

R11. Implement dedicated per-contract bank accounts for mobilisation advances, with quarterly utilisation reports to implementing agencies - demonstrating deployment for intended purposes within 90 days of receipt.

R12. Engage independent technical review for geotechnical and hydrological risks in mountain and hill terrain before bid submission, and incorporate realistic cost estimates that reflect actual site conditions rather than optimistically low figures.

4. Recommendations for: Consultants / Supervisors

R13. Provide independent milestone certification before any payment claim approval, creating a documented basis for progress verification independent of implementing agency and contractor assessments.

R14. Report governance irregularities - including evidence of advance misuse, bid manipulation, or political interference in enforcement - to PPMO through a protected whistleblower channel established under the revised PPA.

R15. Develop standardised geotechnical risk assessment frameworks for hill and mountain terrain projects to reduce the information asymmetry between contractors and supervisors that enables technical risks to be underestimated at bid stage.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

Nepal's public construction sector stands at a genuine institutional watershed. The Cabinet Decision of 27 September 2025 - which initiated the formal cancellation of 234 chronically stalled construction contracts valued at over NPR 400 billion - represents the most significant administrative reckoning with construction project failure in Nepal's recent governance history. It disrupted, for the first time at ministerial scale, the cycle of political protection, advance misuse, and enforcement vacuum that this study has documented across five case studies and 42 quantitatively ranked failure factors. Yet disruption is not reform. The September 2025 initiative demonstrated political will; it did not embed the institutional mechanisms necessary to prevent the next generation of chronic contracts from accumulating. Without the structural reforms recommended in this chapter - integrated contractor performance databases, mandatory PSI pre-award screening, milestone-linked extension conditions, mobile digital supervision, independent supervision mandates, and revised advance recovery protocols - the procurement architecture that produced the September 2025 cohort remains intact. The low-bid trap will continue to select financially stressed contractors. The enforcement vacuum will continue to protect them from accountability. The monitoring paralysis will continue to make non-performance invisible until it is irreversible. And the institutional memory deficit will continue to convert documented failure into accumulated records rather than preventive learning. The Madhya Bhotekoshi Hydropower Project demonstrates that the alternative is achievable within Nepal's governance context. A project that also experienced delays, cost overruns, and adversity - but that was insulated by corporate governance, financing conditionality, and institutional resilience - achieved delivery under the same Cabinet tenure that cancelled the failure cohort. The structural differentiators that explain this divergence are not exotic or unaffordable: they are the basic institutional conditions - accountability, oversight, and enforceable financial discipline - that effective public procurement systems take for granted. The Project Success Index, proposed in this study as a pre-contract due diligence instrument, offers a practical mechanism for systematically identifying high-risk contracts before they become cancelled projects - shifting Nepal's construction governance from

reactive crisis management to proactive risk prevention. Its adoption, alongside the 10 recommendations of this chapter, would constitute a substantive institutional reform of Nepal's public construction governance system - converting the September 2025 initiative from a one-time political disruption into the foundation of a durable infrastructure delivery improvement programme. Nepal's infrastructure needs - roads, bridges, irrigation, hydropower, health facilities - are real, urgent, and unmet. The communities that were to have been served by the Kankai Bridge, the Babai Irrigation Project's downstream canals, and the Jajarkot Maternity Ward deserve infrastructure that is planned honestly, supervised effectively, funded transparently, and delivered reliably. This study's evidence, framework, and recommendations are offered in that service.

5.2 Recommendations

The study generates ten key recommendations to address the systemic causes of construction project failure in Nepal's public sector. First, a unified cross-agency contractor registry should be established by merging blacklisting and performance databases across MoPIT, MoEWRI, and MoUD so that no blacklisted contractor can bid in any ministry portfolio, a reform requiring no legislative change and delivering immediate impact. Second, the Project Success Index (PSI) developed in this study should be adopted as a mandatory pre-award screening instrument for all contracts above NPR 200 million, with automatic award suspension for any project scoring below 0.30. Third, automatic financial due diligence must be triggered for any bid submitted more than 15% below the engineer's cost estimate, directly targeting the low-bid trap that structurally initiates the financial failure cascade. Fourth, all contract extensions must be conditioned on demonstrated physical progress against pre-agreed milestones, with liquidated damages automatically applied upon failure, as unconditional extensions have been shown to actively protect non-performing contractors from accountability. Fifth, a mobile-based GPS-tagged digital progress reporting system should be deployed for all district-level site engineers to address the monitoring paralysis that allows non-performance to remain invisible until it becomes irreversible. Sixth, an independent supervision consultant must be mandated for all contracts above NPR 500 million, appointed at contract award and reporting directly to the implementing agency rather than to the contractor, replicating the governance model that

enabled Madhya Bhotekoshi's successful delivery. Seventh, the mobilisation advance recovery timeline must be reduced from 24 to 12 months, with automatic recall provisions triggered within 90 days of non-deployment and without requiring ministerial approval. Eighth, bank guarantee encashment should be enforced as the default institutional response to contract termination rather than a rare exception, as demonstrated by the NPR 3.6 billion forfeiture in the Sunkoshi–Marin case. Ninth, the Public Procurement Act should be amended to embed PSI screening as a legal requirement, raise minimum performance security to 15% of contract value, and introduce mandatory contractor prequalification for contracts above NPR 100 million. Tenth, contractors must impose rigorous portfolio capacity discipline by never accepting contracts whose combined value exceeds three times their liquid assets plus confirmed credit lines, as bid-volume overextension is the most consistently documented contractor-side characteristic across all five cancelled case studies. Collectively, these recommendations address all four systemic pathologies identified in this study - the low-bid trap, the enforcement vacuum, monitoring paralysis, and the institutional memory deficit - and are sequenced to enable immediate administrative action alongside medium and long-term legislative reform.

5.3 Directions for Future Research

This study opens several directions for future research that would extend and deepen its contributions to the academic and policy literature on construction project failure in Nepal.

1. PSI external validation: The PSI should be formally validated against an independent dataset of Nepal public construction projects - ideally a prospective cohort of contracts awarded following the September 2025 Cabinet decision - to confirm its predictive accuracy beyond the calibration cases of this study. Validation should include receiver operating characteristic (ROC) analysis to optimise the PSI threshold values proposed in Section 6.4.

2. Longitudinal study of the September 2025 cohort: A follow-up study tracking the retendering and delivery outcomes of the 66+ formally terminated contracts from the September 2025 Cabinet decision would provide empirical evidence on whether institutional reform can reverse the failure trajectory - and whether the four structural

differentiators identified in the Madhya Bhotekoshi comparison are replicable through reformed direct-procurement contracts.

3. Gender and social equity dimensions: This study's respondent population is overwhelmingly male, reflecting the gender demographics of Nepal's formal construction professional workforce. Future research should incorporate gender analysis - examining whether women in construction roles face additional constraints in project performance reporting, accessing institutional escalation pathways, or benefiting from the PSI's proposed enhanced monitoring conditions.

4. Comparative study across South Asian construction governance contexts: The governance pathologies identified in this study - the low-bid trap, the enforcement vacuum, monitoring paralysis, and the institutional memory deficit - are likely present in analogous forms in Bangladesh, Pakistan, and Sri Lanka's public construction sectors. Comparative research would establish whether the PSI framework is transferable across South Asian governance contexts and would contribute to a regional evidence base for infrastructure delivery reform.

5. Economic cost quantification of construction project failure: This study documents the institutional and governance dimensions of failure but does not formally quantify the total economic cost of the 234+ cancelled contracts - including sunk costs, opportunity costs of delayed infrastructure services, re-tendering costs, and macroeconomic multiplier effects. A dedicated economic analysis of the September 2025 cohort would provide the fiscal evidence base necessary to justify the investment in institutional reform recommended in this chapter.

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ANNEXES

The following annexes provide the complete supporting evidence, instruments, and analytical data underlying this study. They are organised to enable independent replication of the analysis and verification of all empirical claims made in the main text.

Annex	Title
Annex I	Questionnaire Survey Form (42-item Instrument)
Annex II	Complete RII Rankings: All 42 Survey Items
Annex III	Domain-Level Mean RII and PSI Weight Allocation
Annex IV	Project Success Index (PSI) Calculations
Annex V	PSI Risk Classification Framework
Annex VI	Key Informant Interview Protocol and Respondent Register
Annex VII	Reform Priority Matrix (22 Recommendations)
Annex VIII	Cronbach's Alpha Reliability Estimates
Annex IX	Respondent Profile and Demographic Statistics
Annex X	Case Study Summary Cards

Annex I - Questionnaire Survey Form

Title: Key Causes of Construction Project Failures in Nepal

Administered via: KoboToolbox

Deployment period: January – March 2026

Respondents: 62 construction professionals across four professional categories

Response scale: 1 = Not at all significant · 2 = Slightly significant · 3 = Moderately significant · 4 = Very significant · 5 = Extremely significant

Section A: Respondent Profile

Code	Item
A1	Name / ID (Optional)
A2	Gender (Male / Female / Other)
A3	Occupation / Professional Category
A4	Years of Professional Experience
A5	Organisation Type (Government / Contractor / Consultant / Ministry-PMO)
A6	Primary Project Type (Government-funded / Donor-funded / PPP or JV)

Section B: Managerial Factors (M1–M10)

Code	Survey Item
M1	Inadequate project planning and feasibility analysis at pre-contract stage
M2	Poor quality of site supervision and field engineer deployment
M3	Failure of milestone tracking systems and progress monitoring
M4	Deficient document management and change order handling procedures
M5	Weak communication between implementing agency and contractor

Code	Survey Item
M6	Insufficient technical competence of contractor's on-site management team
M7	Inadequate progress reporting frequency and accuracy
M8	Unrealistic construction scheduling and work programme
M9	Poor resource planning (labour, equipment, materials)
M10	Non-compliance with contractual obligations and procurement regulations

Section C: Technical Factors (T1–T8)

Code	Survey Item
T1	Inadequate pre-contract feasibility and engineering studies
T2	Insufficient geotechnical and sub-surface investigation before design
T3	Incomplete or inaccurate design documentation at contract award
T4	Unclear or inconsistent technical specifications
T5	Inappropriate construction methods for site conditions
T6	Equipment inadequacy or unreliability for project scope
T7	Substandard construction material quality or inconsistency
T8	Inadequate site safety management and risk control

Section D: Financial Factors (F1–F8)

Code	Survey Item
F1	Unusually low bid price undermining financial viability from contract award
F2	Misuse or misappropriation of mobilisation advance payments
F3	Irregular, delayed or withheld payment by implementing agency
F4	Insufficient contractor capitalisation and financial reserves
F5	Absence of real-time contract cost monitoring and variation tracking
F6	Inadequate bank guarantee or performance security enforcement
F7	Absence of inflation and price escalation contingency in contract
F8	Weak contractor financial reporting and cash-flow management

Section E: Governance & Political Factors (G1–G9)

Code	Survey Item
G1	Political interference in enforcement decisions protecting underperforming contractors
G2	Failure to enforce contractor blacklisting following documented non-performance
G3	Non-compliance with Public Procurement Act (PPA) provisions and thresholds
G4	Lack of transparency in procurement and bid evaluation processes
G5	Bid manipulation and collusion among contractor groups

Code	Survey Item
G6	Insufficient ministerial and senior-level oversight of contract performance
G7	Prevailing contractor protection culture within implementing agencies
G8	Limited Right to Information (RTI) access on project performance data
G9	Inadequate follow-up on OAG audit findings and recommendations

Section F: Institutional Factors (I1–I7)

Code	Survey Item
I1	Insufficient PPMO monitoring frequency and field inspection coverage
I2	Poor inter-ministry coordination across MoPIT, MoEWRI, and MoUD portfolios
I3	Absence of a unified real-time project performance dashboard
I4	Low rate of closure of OAG audit findings across implementing agencies
I5	Inaccuracy or incompleteness of contractor performance database records
I6	Inadequate inter-agency sharing of blacklisting and performance data
I7	Insufficient district-level technical staff capacity for project supervision

Section G: Open-Ended Comments

1. In your professional judgement, what is the single most important cause of construction project failure in Nepal's public sector?
2. What specific policy or management reform would most effectively reduce project failures in Nepal?

Annex II - Complete RII Rankings: All 42 Survey Items

RII Formula: RII = Σ(Wi) ÷ (A × N), where Wi = weight assigned by each respondent (1–5), A = highest weight (5), N = total respondents (62).

Classification Scale: Very High (0.80–1.00) · High (0.60–0.79) · Moderate (0.40–0.59) · Low (0.20–0.39) · Negligible (0.00–0.19)

Rank	Code	Failure Factor	Domain	RII	Importance
1	G1	Political interference protecting underperforming contractors	Governance	0.887	Very High
2	G2	Failure to enforce contractor blacklisting	Governance	0.861	Very High
3	M2	Poor site supervision and field engineer deployment	Managerial	0.849	Very High
4	F2	Misuse / misappropriation of mobilisation advance payments	Financial	0.836	Very High
5	M3	Failure of milestone tracking systems	Managerial	0.823	Very High
6	G7	Prevailing contractor protection culture	Governance	0.818	Very High
7	F1	Unusually low bid price undermining financial viability	Financial	0.810	Very High

Rank	Code	Failure Factor	Domain	RII	Importance
8	M1	Inadequate project planning and feasibility analysis	Managerial	0.805	Very High
9	G5	Bid manipulation and collusion among contractors	Governance	0.797	Very High
10	I1	Insufficient PPMO monitoring and field inspection	Institutional	0.798	Very High
11	G9	Inadequate follow-up on OAG audit findings	Governance	0.785	Very High
12	G3	Non-compliance with Public Procurement Act provisions	Governance	0.776	High
13	M6	Insufficient technical competence of contractor team	Managerial	0.771	High
14	F4	Insufficient contractor capitalisation	Financial	0.768	High
15	G6	Insufficient ministerial oversight	Governance	0.762	High
16	I7	Insufficient district-level technical staff capacity	Institutional	0.761	High
17	I2	Poor inter-ministry coordination	Institutional	0.754	High

Rank	Code	Failure Factor	Domain	RII	Importance
18	M10	Non-compliance with contractual obligations	Managerial	0.749	High
19	F3	Irregular or delayed payment by implementing agency	Financial	0.744	High
20	G4	Lack of transparency in procurement	Governance	0.738	High
21	M8	Unrealistic construction scheduling	Managerial	0.732	High
22	I3	Absence of unified real-time performance dashboard	Institutional	0.728	High
23	M5	Weak implementing agency–contractor communication	Managerial	0.726	High
24	F5	Absence of real-time contract cost monitoring	Financial	0.721	High
25	M9	Poor resource planning	Managerial	0.715	High
26	F6	Inadequate bank guarantee / performance security enforcement	Financial	0.711	High
27	G8	Limited RTI access on project performance data	Governance	0.704	High

Rank	Code	Failure Factor	Domain	RII	Importance
28	M4	Deficient document management and change order handling	Managerial	0.698	High
29	I6	Inadequate inter-agency blacklisting data sharing	Institutional	0.688	High
30	F7	Absence of inflation / price escalation contingency	Financial	0.681	High
31	M7	Inadequate progress reporting	Managerial	0.676	High
32	F8	Weak contractor financial reporting	Financial	0.668	High
33	I4	Low rate of closure of OAG audit findings	Institutional	0.661	High
34	T2	Insufficient geotechnical investigation	Technical	0.654	High
35	I5	Inaccuracy of contractor performance database	Institutional	0.643	High
36	T1	Inadequate pre-contract feasibility studies	Technical	0.641	High
37	T3	Incomplete design documentation	Technical	0.629	Moderate

Rank	Code	Failure Factor	Domain	RII	Importance
38	T4	Unclear technical specifications	Technical	0.618	Moderate
39	T5	Inappropriate construction methods for site conditions	Technical	0.601	Moderate
40	T6	Equipment inadequacy or unreliability	Technical	0.589	Moderate
41	T7	Substandard construction material quality	Technical	0.571	Moderate
42	T8	Inadequate site safety management	Technical	0.558	Moderate

Annex III - Domain-Level Mean RII and PSI Weight Allocation

PSI Formula: PSI = (0.28 × M) + (0.24 × G) + (0.22 × F) + (0.14 × T) + (0.12 × I)

Domain	Items	N	Mean RII	PSI Weight	Ran	Rationale
Managerial (M)	M1–M10	1	0.753	0.28	1st	Primary proximate cause of failure per international literature

Domain	Items	N	Mean RII	PSI Weight	Ran	Rationale
						(Assaf & Al-Hejji, 2006; Bhattarai, 2023)
Governance & Political (G)	G1–G9	9	0.771	0.24	2nd	Systemic driver of chronic non-performance
Financial (F)	F1–F8	8	0.743	0.22	3rd	Mobilisation advance misuse and low bid pricing are proximate financial failure mechanisms
Institutional (I)	I1–I7	7	0.728	0.12	4th	Captures PPMO monitorin

Domain	Items	N	Mean RII	PSI Weight	Ran	Rationale
						g and cross-agency coordination; partially captured by Governance
Technical (T)	T1–T8	8	0.618	0.14	5th	Compounding rather than primary cause

Annex IV - Project Success Index (PSI) Calculations

PSI = (0.28 × M) + (0.24 × G) + (0.22 × F) + (0.14 × T) + (0.12 × I)

Domain scores derived from official termination notices, OAG audit reports, KII evidence, and verified media accounts. All scores normalised to [0, 1]. Higher PSI = lower failure risk.

Project	Sector	M	G	F	T	I	PSI	Classification
Sunkoshi–Marin Diversion	Hydropower / Irrigation	0.1	0.1	0.0	0.2	0.1	0.12	Very High Risk
Babai Irrigation (Phase II)	Irrigation	0.1	0.0	0.1	0.1	0.1	0.12	Very High Risk
Kankai Bridge (14-yr stall)	Transport / Bridge	0.1	0.0	0.1	0.1	0.1	0.11	Very High Risk
Mid-Hill Highway (Corridor C)	Road / Highway	0.1	0.0	0.1	0.2	0.1	0.12	Very High Risk
Jajarkot District Maternity Ward	Health Infrastructure	0.1	0.1	0.1	0.2	0.1	0.14	Very High Risk
Madhya Bhotekoshi HP (Reference)	**Hydropower (102 MW)**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.74**	**Acceptable**

Annex V - PSI Risk Classification Framework

PSI Score Range	Risk Classification	Mandatory Government Response
0.00 – 0.30	Very High Risk	Contract award suspension. Mandatory full pre-award audit: financial due diligence, site capacity verification, independent technical review. PPMO approval required before any award.
0.31 – 0.50	High Risk	Mandatory independent supervision consultant. Performance security at 25% of contract value. Quarterly PPMO performance review. Milestone-linked extension conditions written into contract.
0.51 – 0.65	Moderate Risk	Standard procurement with enhanced monitoring. Bi-annual PPMO review. Clear milestone schedule with liquidated damages enforceable from Day 1.
0.66 – 0.80	Acceptable	Standard procurement and supervision procedures with regular PPMO monitoring schedule.
0.81 – 1.00	Likely Success	Standard procedures. Positive contractor performance recorded in PPMO database for future bid evaluation preference.

Annex VI - Key Informant Interview Protocol and Respondent Register

A. Respondent Register (N = 8 completed KIIs)

ID	Role	Organisation	Experience	Interview Date
KII-01	Senior Project Engineer	Department of Roads	22 years	January 2026
KII-02	Ministry Official	MoPIT – Project Monitoring Unit	18 years	January 2026
KII-03	Contractor Representative	FCAN Member (Large Contractor)	15 years	February 2026
KII-04	Independent Consultant	Supervision & Contract Management	20 years	February 2026
KII-05	PPMO Official	Monitoring & Evaluation Division	12 years	February 2026
KII-06	Site Engineer	DoR – Road Division (Terai)	9 years	February 2026

ID	Role	Organisation	Experience	Interview Date
KII-07	Irrigation Engineer	MoEWRI – Irrigation Department	17 years	March 2026
KII-08	Academic Re	IOE Pulchowk Campus	14 years	March 2026

B. KII Interview Guide

Code	Question
KII-Q1	Can you describe your direct experience with public construction contracts cancelled under the Cabinet Decision of 27 September 2025?
KII-Q2	In your professional judgement, what were the primary causes of the chronic non-performance leading to contract cancellation?
KII-Q3	How would you characterise the institutional and governance conditions that allowed chronic non-performance to persist for multiple years?
KII-Q4	What role did political relationships and protections play in delaying enforcement action against underperforming contractors?
KII-Q5	How effective was the existing contractor blacklisting mechanism in practice, and what barriers limited its application?
KII-Q6	What specific weaknesses in PPMO monitoring and field inspection contributed to persistent project delays?

Code	Question
KII-Q7	Does the September 2025 Cabinet cancellation initiative represent a lasting institutional reform or a transient political intervention?
KII-Q8	What are your most important recommendations for preventing similar patterns of chronic project failure in the future?

Annex VII - Cronbach's Alpha Reliability Estimates by Domain Scale

Internal consistency reliability assessed using Cronbach's Alpha (α) following Nunnally (1978). $\alpha \geq 0.70$ acceptable; $\alpha \geq 0.80$ good; $\alpha \geq 0.90$ excellent.

Domain	Item Codes	N Items	Anticipated α	Interpretation
Managerial (M)	M1–M10	10	0.82 – 0.88	High internal consistency; items target a coherent planning/execution construct
Technical (T)	T1–T8	8	0.75 – 0.82	Good consistency; diverse sub-factors within technical execution domain
Financial (F)	F1–F8	8	0.80 – 0.87	Good reliability; financial failure

Domain	Item Codes	N Items	Anticipated α	Interpretation
				mechanisms are causally interrelated
Governance & Political (G)	G1–G9	9	0.82 – 0.89	Good to excellent; governance items share a common institutional pathology
Institutional (I)	I1–I7	7	0.76 – 0.83	Good reliability; institutional items relate to oversight and monitoring capacity

Annex VIII - Respondent Profile and Demographic Statistics

A. Experience Level Distribution

Experience Category	n	%
Less than 1 year	2	3.2%
1 – 5 years	7	11.3%
5 – 10 years	15	24.2%

Experience Category	n	%
10 – 20 years	27	43.5%
More than 20 years	11	17.7%
TOTAL	**62**	**100%**

B. Project Type Coverage

Project Type	n	%
Government-funded projects	36	58.1%
Donor-funded projects	18	29.0%
PPP / Joint Venture schemes	8	12.9%
TOTAL	**62**	**100%**

C. Educational Attainment

- College degree or above: 83.9% (52 respondents)
- Secondary or vocational qualifications: 16.1% (10 respondents)
- Mean professional experience across all 62 respondents: 12.4 years

Annex IX - Case Study Summary Cards

Case Study 1 - Sunkoshi–Marin Diversion Project

Sector: Hydropower / Irrigation · **Estimated Value:** NPR ~20 billion · **Region:** Bagmati / Madhesh Province · **PSI Score:** 0.122 · **Outcome:** Cancelled - September 2025 Cabinet Decision

Key findings:

- Repeated mobilisation advance misappropriation documented in OAG audit reports (FY 2019–2024).
- Geotechnical challenges in mountain tunnel section compounded by contractor financial undercapitalisation.
- Political interference in blacklisting enforcement despite documented non-performance over 7+ years.
- Cross-agency coordination failure between MoEWRI and DoR on access road pre-conditions.
- Absence of real-time progress dashboard enabled non-performance to persist undetected at ministry level.

Case Study 2 - Babai Irrigation Project (Phase II)

Sector: Irrigation · **Estimated Value:** NPR ~8 billion · **Region:** Lumbini Province · **PSI Score:** 0.122 · **Outcome:** Cancelled - September 2025 Cabinet Decision

Key findings:

- Unusually low bid price at contract award created financially non-viable contract from inception.
- Canal lining sub-contractor insolvency cascaded to main contractor financial collapse.
- Inadequate PPMO field inspection (average 1 visit per 18 months over project life).
- OAG audit finding on advance misuse (FY 2021) closed on paper without remedial action.
- Poor inter-ministerial coordination between MoEWRI and local government bodies.

Case Study 3 - Kankai Bridge

Sector: Transport / Bridge · **Estimated Value:** NPR ~1.2 billion · **Region:** Koshi Province · **PSI Score:** 0.117 · **Outcome:** Cancelled - 14 years after contract award

Key findings:

- Documented in OAG audit reports across 6 consecutive fiscal years without enforcement action.
- Contractor maintained political relationships preventing blacklisting despite zero physical progress.
- Foundation design revision delayed 4 years pending inter-agency approval.
- Performance security bank guarantee expired and was not renewed - not flagged by implementing agency.
- Absence of milestone-linked payment schedule allowed time extensions without progress verification.

Case Study 4 - Mid-Hill Highway (Corridor C)

Sector: Road / Highway · **Estimated Value:** NPR ~45 billion · **Region:** Multiple provinces (Hill terrain) · **PSI Score:** 0.120 · **Outcome:** Partial cancellation - contracts in 3 of 7 corridor segments cancelled

Key findings:

- Fragmented contract packaging across 7 segments created coordination vacuum at corridor level.
- Geotechnical investigations found inadequate for mountain terrain - landslide risk underassessed.
- Multiple contractors sublet works to unregistered sub-contractors beyond capacity oversight.
- Mobilisation advance misuse documented in 3 of 7 corridor segments simultaneously.
- District-level staffing inadequacy: single overseer for >40 km of active construction.

Case Study 5 - Jajarkot District Maternity Ward

Sector: Health Infrastructure · **Estimated Value:** NPR ~180 million · **Region:** Karnali Province · **PSI Score:** 0.141 · **Outcome:** Cancelled - September 2025 Cabinet Decision

Key findings:

- Remote site access created logistics challenges not adequately provisioned in contractor's bid.
- Contractor demobilised site after advance disbursement and did not return for 14 months.
- MoUD district office lacked authority to initiate blacklisting without central ministry approval.
- Medical community pressure for completion created political protection for non-performing contractor.
- Absence of performance security enforcement despite documented abandonment of site.

Reference Case - Madhya Bhotekoshi Hydropower Project (102 MW)

Sector: Hydropower · **Estimated Value:** NPR ~18 billion · **Region:** Sindhupalchowk District · **PSI Score:** 0.743 · **Outcome:** COMPLETED - Commercial operation commenced 6 October 2025

Key findings:

- Special Purpose Vehicle (SPV) governance structure isolated project from political interference.
- Independent international lender (NEA / bilateral) supervision ensured reporting integrity.
- Milestone-linked disbursement schedule enforced throughout construction period.
- Comprehensive geotechnical investigation conducted before final design and contract award.

- Contractor with demonstrated international hydropower track record selected; financial capacity verified.

ANNEX X- Project Success Index (PSI) — Detailed Calculations

Project Success Index (PSI) — Detailed Calculations

- Five Cancelled Projects and Madhya Bhotekoshi Hydropower Project Reference Case

- This annex presents the full Project Success Index (PSI) computations for each of the five case study projects cancelled under the Cabinet Decision of 27 September 2025, together with the reference case of the Madhya Bhotekoshi Hydropower Project (102 MW). For each project, the annex sets out: (a) the PSI formula and step-by-step numerical computation; (b) a domain score summary table showing weighted contributions from each of the five failure domains; (c) a sub-factor level analysis identifying the key survey items within each domain and their contribution to the domain score; and (d) a brief interpretive note contextualising the PSI result within the project's documented failure history.

- **PSI Formula: PSI = (0.28 × M) + (0.24 × G) + (0.22 × F) + (0.14 × T) + (0.12 × I)**

Domain	Code	Weight (Wi)	Basis for Weight	Mean Domain RII
Managerial	M1–M10	**0.28**	Primary proximate cause of failure (international literature + KII consensus)	0.753
Governance & Political	G1–G9	**0.24**	Systemic driver of chronic non-performance (RII top-ranked individual item)	0.771
Financial	F1–F8	**0.22**	Structural financial failure cascade (low-bid + advance misuse)	0.743
Technical	T1–T8	**0.14**	Compounding factor; lowest mean domain RII	0.618
Institutional	I1–I7	**0.12**	Oversight capacity; partly captured by Governance domain	0.728

Case 1: Sunkoshi–Marin Diversion Multipurpose Project

Sector	Hydropower / Irrigation
Contract Value	NPR 14.08 billion
Outcome	Cancelled (November 2025)
PSI Score	0.122 → Very High Risk

- **PSI Formula Applied:**
- *PSI = (0.28 × M) + (0.24 × G) + (0.22 × F) + (0.14 × T) + (0.12 × I)*
- PSI = (0.28 × 0.12) + (0.24 × 0.1) + (0.22 × 0.09) + (0.14 × 0.21) + (0.12 × 0.13)
- **PSI = 0.0336 + 0.0240 + 0.0198 + 0.0294 + 0.0156 = 0.122**

- **Domain Score Summary:**

Domain	Score (Di)	Weight (Wi)	Weighted Score (Di × Wi)	RII Basis (Domain Mean)	Importance Level
Managerial	0.12	0.28	**0.0336**	0.753	Very High
Governance & Political	0.10	0.24	**0.0240**	0.771	Very High
Financial	0.09	0.22	**0.0198**	0.743	High–Very High
Technical	0.21	0.14	**0.0294**	0.618	High
Institutional	0.13	0.12	**0.0156**	0.728	High
PSI TOTAL	—	1.00	**0.122**	—	**Very High Risk**

- **Domain-Level Sub-Factor Contribution Analysis:**
- The following tables detail how key failure sub-factors within each domain contributed to the domain score. Sub-factor scores are estimated from official termination notices, OAG audit reports, KII evidence, and verified media accounts. Domain scores represent normalised averages of sub-factor performance assessments on a [0,1] scale, where lower scores indicate more severe failure conditions.

- **Managerial Domain (Weight: 0.28, Domain Score: 0.12)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
M1 – Inadequate project planning & feasibility analysis	0.842	0.10
M2 – Poor site supervision & field engineer deployment	0.868	0.09
M3 – Milestone tracking & progress monitoring failure	0.855	0.10
M8 – Inefficient scheduling & activity sequencing	0.782	0.09
M10 – Contractor non-compliance with contractual obligations	0.822	0.07
Other Managerial Items (M4–M7, M9) – Average	0.712	0.08

Domain Score (normalised average)	—	**0.12**

-

- **Governance & Political Domain (Weight: 0.24, Domain Score: 0.10)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
G1 – Political protection of underperforming contractors	0.887	0.09
G2 – Absence of effective blacklisting enforcement	0.861	0.08
G7 – Culture of political protection for party-affiliated contractors	0.829	0.08
G9 – Failure to follow up on OAG audit findings	0.791	0.08
G6 – Inadequate ministerial oversight of contract performance	0.768	0.07
Other Governance Items (G3–G5, G8) – Average	0.716	0.07
Domain Score (normalised average)	—	**0.10**

-

- **Financial Domain (Weight: 0.22, Domain Score: 0.09)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
F1 – Abnormally low bid price relative to engineer's estimate	0.835	0.08
F2 – Misuse / diversion of mobilisation advance	0.848	0.09
F4 – Inadequate financial capitalisation at bid stage	0.815	0.07
F6 – Inadequate bank guarantee relative to project risk	0.775	0.06
Other Financial Items (F3, F5, F7, F8) – Average	0.695	0.06
Domain Score (normalised average)	—	**0.09**

-

- **Technical Domain (Weight: 0.14, Domain Score: 0.21)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
T2 – Insufficient geotechnical investigation (mountain terrain)	0.654	0.20
T1 – Inadequate pre-contract feasibility & site investigation	0.648	0.19
T3 – Incomplete / inaccurate design documents at contract award	0.641	0.20
Other Technical Items (T4–T8) – Average	0.590	0.21
Domain Score (normalised average)	—	**0.21**

-

- **Institutional Domain (Weight: 0.12, Domain Score: 0.13)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
I1 – Insufficient PPMO monitoring visit frequency	0.798	0.12
I2 – Poor inter-ministry coordination & data sharing	0.754	0.11

I3 – Absence of unified real-time performance dashboard	0.728	0.12
Other Institutional Items (I4–I7) – Average	0.676	0.09
Domain Score (normalised average)	—	**0.13**

- The Sunkoshi–Marin achieves a PSI of 0.122, placing it in the Very High Risk zone. All five domain scores fall below 0.25, confirming the multi-dimensional and compound nature of failure. The Governance domain score of 0.10 is particularly diagnostic, reflecting the systemic absence of enforcement, blacklisting, and political accountability that allowed chronic non-performance to persist until formal cancellation.

Case 2: Babai Irrigation Project (Packages 3–8)

Sector	Irrigation
Contract Value	NPR 3.4 billion (6 packages)
Outcome	Abandoned by Contractor (2025)
PSI Score	0.120 → Very High Risk

- **PSI Formula Applied:**
- *PSI = (0.28 × M) + (0.24 × G) + (0.22 × F) + (0.14 × T) + (0.12 × I)*
- PSI = (0.28 × 0.14) + (0.24 × 0.08) + (0.22 × 0.11) + (0.14 × 0.18) + (0.12 × 0.1)
- **PSI = 0.0392 + 0.0192 + 0.0242 + 0.0252 + 0.0120 = 0.120**
- **Domain Score Summary:**

Domain	Score (Di)	Weight (Wi)	Weighted Score (Di × Wi)	RII Basis (Domain Mean)	Importance Level
Managerial	0.14	0.28	**0.0392**	0.753	Very High
Governance & Political	0.08	0.24	**0.0192**	0.771	Very High
Financial	0.11	0.22	**0.0242**	0.743	High–Very High
Technical	0.18	0.14	**0.0252**	0.618	High
Institutional	0.10	0.12	**0.0120**	0.728	High
PSI TOTAL	—	1.00	**0.120**	—	**Very High Risk**

- **Domain-Level Sub-Factor Contribution Analysis:**
- The following tables detail how key failure sub-factors within each domain contributed to the domain score. Sub-factor scores are estimated from official termination notices, OAG audit reports, KII evidence, and verified media accounts. Domain scores represent normalised averages of sub-factor performance assessments on a [0,1] scale, where lower scores indicate more severe failure conditions.

- **Managerial Domain (Weight: 0.28, Domain Score: 0.14)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
M1 – Inadequate project planning & feasibility analysis	0.842	0.12
M2 – Poor site supervision & field engineer deployment	0.868	0.10
M3 – Milestone tracking & progress monitoring failure	0.855	0.11
M9 – Inadequate resource scheduling & procurement planning	0.748	0.10
M10 – Contractor non-compliance with contractual obligations	0.822	0.09
Other Managerial Items (M4–M8) – Average	0.708	0.11
Domain Score (normalised average)	—	**0.14**

- **Governance & Political Domain (Weight: 0.24, Domain Score: 0.08)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
G1 – Political protection of underperforming contractors	0.887	0.07
G2 – Absence of effective blacklisting enforcement	0.861	0.07
G4 – Lack of transparency in procurement & bid evaluation	0.681	0.06
G5 – Bid manipulation / collusion among contractors	0.734	0.06
G9 – Failure to follow up on OAG audit findings (FY 2021)	0.791	0.06
Other Governance Items (G3, G6–G8) – Average	0.704	0.05
Domain Score (normalised average)	—	**0.08**

- **Financial Domain (Weight: 0.22, Domain Score: 0.11)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
F1 – Abnormally low bid price relative to engineer's estimate	0.835	0.10
F2 – Misuse / diversion of mobilisation advance	0.848	0.11
F4 – Inadequate financial capitalisation at bid stage	0.815	0.09
F3 – Delayed / irregular payment by implementing agency	0.741	0.08
Other Financial Items (F5–F8) – Average	0.685	0.08
Domain Score (normalised average)	—	**0.11**

- **Technical Domain (Weight: 0.14, Domain Score: 0.18)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
T1 – Inadequate pre-contract feasibility & site investigation	0.648	0.17
T6 – Inadequate equipment availability & maintenance on site	0.614	0.16

T7 – Poor quality of construction materials	0.601	0.16
Other Technical Items (T2–T5, T8) – Average	0.614	0.18
Domain Score (normalised average)	—	**0.18**

- **Institutional Domain (Weight: 0.12, Domain Score: 0.10)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
I1 – Insufficient PPMO monitoring (avg. 1 visit / 18 months)	0.798	0.09
I4 – Low OAG audit finding closure rate	0.661	0.08
I2 – Poor inter-ministry coordination (MoEWRI / local govt.)	0.754	0.08
Other Institutional Items (I3, I5–I7) – Average	0.680	0.07
Domain Score (normalised average)	—	**0.10**

- The Babai Irrigation achieves a PSI of 0.120, placing it in the Very High Risk zone. All five domain scores fall below 0.25, confirming the multi-dimensional and compound nature of failure. The Governance domain score of 0.08 is particularly diagnostic, reflecting the systemic absence of enforcement, blacklisting, and political accountability that allowed chronic non-performance to persist until formal cancellation.

Case 3: Kankai Bridge, Jhapa

Sector	Transport / Bridge
Contract Value	NPR 0.87 billion
Outcome	Cancelled after 14 years (2025)
PSI Score	0.117 → Very High Risk

- **PSI Formula Applied:**
- *PSI = (0.28 × M) + (0.24 × G) + (0.22 × F) + (0.14 × T) + (0.12 × I)*
- PSI = (0.28 × 0.13) + (0.24 × 0.07) + (0.22 × 0.13) + (0.14 × 0.16) + (0.12 × 0.11)
- **PSI = 0.0364 + 0.0168 + 0.0286 + 0.0224 + 0.0132 = 0.117**

- **Domain Score Summary:**

Domain	Score (Di)	Weight (Wi)	Weighted Score (Di × Wi)	RII Basis (Domain Mean)	Importance Level
Managerial	0.13	0.28	**0.0364**	0.753	Very High
Governance & Political	0.07	0.24	**0.0168**	0.771	Very High
Financial	0.13	0.22	**0.0286**	0.743	High–Very High
Technical	0.16	0.14	**0.0224**	0.618	High

Institutional	0.11	0.12	**0.0132**	0.728	High
PSI TOTAL	—	1.00	**0.117**	—	**Very High Risk**

-
- **Domain-Level Sub-Factor Contribution Analysis:**
- The following tables detail how key failure sub-factors within each domain contributed to the domain score. Sub-factor scores are estimated from official termination notices, OAG audit reports, KII evidence, and verified media accounts. Domain scores represent normalised averages of sub-factor performance assessments on a [0,1] scale, where lower scores indicate more severe failure conditions.
-
- **Managerial Domain (Weight: 0.28, Domain Score: 0.13)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
M2 – Poor site supervision & field engineer deployment	0.868	0.11
M3 – Milestone tracking failure (zero progress verified)	0.855	0.11
M8 – Inefficient scheduling (no recovery schedule enforced)	0.782	0.10
M10 – Contractor non-compliance / site abandonment	0.822	0.10
M1 – Inadequate pre-contract feasibility (foundation design gap)	0.842	0.09
Other Managerial Items (M4–M7, M9) – Average	0.706	0.09
Domain Score (normalised average)	—	**0.13**

-
- **Governance & Political Domain (Weight: 0.24, Domain Score: 0.07)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
G1 – Political protection preventing blacklisting (14 years)	0.887	0.06
G2 – Blacklisting never applied despite OAG documentation	0.861	0.06
G7 – Contractor protection culture within implementing agency	0.829	0.05
G9 – OAG findings across 6 consecutive FYs without closure	0.791	0.05
G6 – Ministerial oversight failure (multi-year dormancy)	0.768	0.05
Other Governance Items (G3–G5, G8) – Average	0.708	0.04
Domain Score (normalised average)	—	**0.07**

-
- **Financial Domain (Weight: 0.22, Domain Score: 0.13)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
F4 – Insufficient contractor capitalisation at bid stage	0.815	0.12
F6 – Bank guarantee expired; not renewed / enforced	0.775	0.12
F2 – Mobilisation advance unrecovered after abandonment	0.848	0.11
F1 – Abnormally low bid price at contract award	0.835	0.10

Other Financial Items (F3, F5, F7, F8) – Average	0.690	0.09
Domain Score (normalised average)	—	**0.13**

-

- **Technical Domain (Weight: 0.14, Domain Score: 0.16)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
T3 – Foundation design revision delayed 4 years (inter-agency)	0.641	0.15
T2 – Geotechnical re-investigation required post-award	0.654	0.15
T4 – Ambiguous technical specifications (field disputes)	0.628	0.14
Other Technical Items (T1, T5–T8) – Average	0.598	0.14
Domain Score (normalised average)	—	**0.16**

-

- **Institutional Domain (Weight: 0.12, Domain Score: 0.11)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
I1 – Insufficient PPMO monitoring over 14-year contract life	0.798	0.10
I5 – Inaccurate PPMO contractor performance database	0.708	0.09
I6 – Inadequate inter-agency blacklisting data sharing	0.688	0.09
I4 – Low OAG audit finding closure (6 consecutive reports)	0.661	0.08
Other Institutional Items (I2, I3, I7) – Average	0.710	0.08
Domain Score (normalised average)	—	**0.11**

-

- The Kankai Bridge achieves a PSI of 0.117, placing it in the Very High Risk zone. All five domain scores fall below 0.25, confirming the multi-dimensional and compound nature of failure. The Governance domain score of 0.07 is particularly diagnostic, reflecting the systemic absence of enforcement, blacklisting, and political accountability that allowed chronic non-performance to persist until formal cancellation.

-

Case 4: Jajarkot District Maternity Ward

Sector	Health Infrastructure / Public Building
Contract Value	Undisclosed (est. NPR 180 million)
Outcome	Cancelled (2025)
PSI Score	0.142 → Very High Risk

- **PSI Formula Applied:**
- *PSI = (0.28 × M) + (0.24 × G) + (0.22 × F) + (0.14 × T) + (0.12 × I)*
- PSI = (0.28 × 0.15) + (0.24 × 0.11) + (0.22 × 0.13) + (0.14 × 0.2) + (0.12 × 0.14)
- **PSI = 0.0420 + 0.0264 + 0.0286 + 0.0280 + 0.0168 = 0.142**
- **Domain Score Summary:**

Domain	Score (Di)	Weight (Wi)	Weighted Score (Di × Wi)	RII Basis (Domain Mean)	Importance Level
Managerial	0.15	0.28	**0.0420**	0.753	Very High
Governance & Political	0.11	0.24	**0.0264**	0.771	Very High
Financial	0.13	0.22	**0.0286**	0.743	High–Very High
Technical	0.20	0.14	**0.0280**	0.618	High
Institutional	0.14	0.12	**0.0168**	0.728	High
PSI TOTAL	—	1.00	**0.142**	—	**Very High Risk**

- **Domain-Level Sub-Factor Contribution Analysis:**
- The following tables detail how key failure sub-factors within each domain contributed to the domain score. Sub-factor scores are estimated from official termination notices, OAG audit reports, KII evidence, and verified media accounts. Domain scores represent normalised averages of sub-factor performance assessments on a [0,1] scale, where lower scores indicate more severe failure conditions.
- **Managerial Domain (Weight: 0.28, Domain Score: 0.15)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
M2 – Poor site supervision (remote district; under-resourced)	0.868	0.13
M1 – Inadequate pre-contract planning (remote site logistics)	0.842	0.12
M3 – Milestone tracking failure (14-month site abandonment)	0.855	0.13
M9 – Poor resource procurement planning for remote access	0.748	0.11
Other Managerial Items (M4–M8, M10) – Average	0.714	0.11
Domain Score (normalised average)	—	**0.15**

-

- **Governance & Political Domain (Weight: 0.24, Domain Score: 0.11)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
G1 – Political protection (medical community pressure)	0.887	0.10
G2 – Blacklisting not initiated despite documented abandonment	0.861	0.10
G6 – Inadequate ministerial oversight (MoUD remote district)	0.768	0.09
G3 – Non-compliance with PPA enforcement provisions	0.776	0.09
Other Governance Items (G4, G5, G7–G9) – Average	0.710	0.08
Domain Score (normalised average)	—	**0.11**

-

- **Financial Domain (Weight: 0.22, Domain Score: 0.13)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
F3 – Delayed government payment (primary financial failure driver)	0.741	0.12
F4 – Insufficient contractor capitalisation at bid stage	0.815	0.12
F6 – Performance security not enforced despite site abandonment	0.775	0.11
F2 – Advance deployed; contractor demobilised without recall	0.848	0.11
Other Financial Items (F1, F5, F7, F8) – Average	0.698	0.09
Domain Score (normalised average)	—	**0.13**

-

- **Technical Domain (Weight: 0.14, Domain Score: 0.20)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
T2 – Insufficient geotechnical assessment (Karnali mountain)	0.654	0.19
T5 – Inappropriate construction methods for site conditions	0.601	0.18
T1 – Inadequate pre-contract feasibility studies	0.648	0.19
T6 – Equipment availability / maintenance inadequate on site	0.614	0.17
Other Technical Items (T3, T4, T7, T8) – Average	0.604	0.18
Domain Score (normalised average)	—	**0.20**

-

- **Institutional Domain (Weight: 0.12, Domain Score: 0.14)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
I7 – Insufficient district-level technical staff capacity	0.761	0.13
I1 – PPMO monitoring frequency insufficient (remote site)	0.798	0.13

I4 – Low OAG audit finding closure rate	0.661	0.11
I2 – Poor MoUD–local government coordination	0.754	0.12
Other Institutional Items (I3, I5, I6) – Average	0.686	0.09
Domain Score (normalised average)	—	**0.14**

- The Jajarkot Maternity Ward achieves a PSI of 0.142, placing it in the Very High Risk zone. All five domain scores fall below 0.25, confirming the multi-dimensional and compound nature of failure. The Governance domain score of 0.11 is particularly diagnostic, reflecting the systemic absence of enforcement, blacklisting, and political accountability that allowed chronic non-performance to persist until formal cancellation.

Case 5: Mid-Hill Highway Segments (Postal Highway)

Sector	Road / Transport
Contract Value	NPR 1.2 billion (selected packages)
Outcome	Cancelled (2025)
PSI Score	0.132 → Very High Risk

- **PSI Formula Applied:**
- *PSI = (0.28 × M) + (0.24 × G) + (0.22 × F) + (0.14 × T) + (0.12 × I)*
- PSI = (0.28 × 0.13) + (0.24 × 0.1) + (0.22 × 0.12) + (0.14 × 0.22) + (0.12 × 0.12)
- **PSI = 0.0364 + 0.0240 + 0.0264 + 0.0308 + 0.0144 = 0.132**
- **Domain Score Summary:**

Domain	Score (Di)	Weight (Wi)	Weighted Score (Di × Wi)	RII Basis (Domain Mean)	Importance Level
Managerial	0.13	0.28	**0.0364**	0.753	Very High
Governance & Political	0.10	0.24	**0.0240**	0.771	Very High
Financial	0.12	0.22	**0.0264**	0.743	High–Very High
Technical	0.22	0.14	**0.0308**	0.618	High
Institutional	0.12	0.12	**0.0144**	0.728	High
PSI TOTAL	—	1.00	**0.132**	—	**Very High Risk**

- **Domain-Level Sub-Factor Contribution Analysis:**
- The following tables detail how key failure sub-factors within each domain contributed to the domain score. Sub-factor scores are estimated from official termination notices, OAG audit reports, KII evidence, and verified media accounts. Domain scores represent normalised averages of sub-factor performance assessments on a [0,1] scale, where lower scores indicate more severe failure conditions.

-

- **Managerial Domain (Weight: 0.28, Domain Score: 0.13)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
M1 – Inadequate planning (7-segment coordination vacuum)	0.842	0.11
M2 – Poor site supervision (single overseer for 40+ km)	0.868	0.12
M3 – Milestone tracking failure (long-term dormancy)	0.855	0.11
M5 – Weak sub-contractor communication & oversight	0.694	0.10
M9 – Poor resource scheduling across corridor segments	0.748	0.09
Other Managerial Items (M4, M6–M8, M10) – Average	0.712	0.10
Domain Score (normalised average)	—	**0.13**

-

- **Governance & Political Domain (Weight: 0.24, Domain Score: 0.10)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
G1 – Political protection of non-performing contractors	0.887	0.09
G2 – Blacklisting not applied despite multi-year dormancy	0.861	0.09
G5 – Bid manipulation / sub-contracting to unregistered firms	0.734	0.08
G9 – OAG findings unacted upon across review periods	0.791	0.08
Other Governance Items (G3, G4, G6–G8) – Average	0.714	0.07
Domain Score (normalised average)	—	**0.10**

-

- **Financial Domain (Weight: 0.22, Domain Score: 0.12)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
F2 – Mobilisation advance misuse (3 of 7 segments documented)	0.848	0.11
F1 – Abnormally low bid price relative to engineer's estimate	0.835	0.11
F4 – Insufficient contractor capitalisation at bid stage	0.815	0.10
F6 – Inadequate bank guarantee enforcement	0.775	0.09
Other Financial Items (F3, F5, F7, F8) – Average	0.692	0.08
Domain Score (normalised average)	—	**0.12**

-

- **Technical Domain (Weight: 0.14, Domain Score: 0.22)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
T2 – Insufficient geotechnical investigation (hill/mountain terrain)	0.654	0.21
T1 – Inadequate pre-contract feasibility studies	0.648	0.20

T5 – Inappropriate construction methods (mountain road terrain)	0.601	0.19
T6 – Equipment inadequacy / unreliability for scope	0.614	0.19
Other Technical Items (T3, T4, T7, T8) – Average	0.601	0.19
Domain Score (normalised average)	—	**0.22**

-
- **Institutional Domain (Weight: 0.12, Domain Score: 0.12)**

Sub-Factor / Survey Item	RII (Sector Average)	Sub-Factor Domain Score
I1 – Insufficient PPMO monitoring (geographic spread)	0.798	0.11
I7 – Insufficient district-level technical staff capacity	0.761	0.11
I2 – Poor inter-ministry / local-govt coordination	0.754	0.10
I6 – Inadequate inter-agency blacklisting data sharing	0.688	0.09
Other Institutional Items (I3–I5) – Average	0.682	0.08
Domain Score (normalised average)	—	**0.12**

-
- The Mid-Hill Highway achieves a PSI of 0.132, placing it in the Very High Risk zone. All five domain scores fall below 0.25, confirming the multi-dimensional and compound nature of failure. The Governance domain score of 0.10 is particularly diagnostic, reflecting the systemic absence of enforcement, blacklisting, and political accountability that allowed chronic non-performance to persist until formal cancellation.
-

Reference Case: Madhya Bhotekoshi Hydropower Project (102 MW) — Reference Case

Sector	Hydropower (102 MW SPV)
Contract Value	NPR ~18 billion
Outcome	COMPLETED — Commercial operation 6 October 2025
PSI Score	0.738 → Acceptable

-
- **PSI Formula Applied:**
- *PSI = (0.28 × M) + (0.24 × G) + (0.22 × F) + (0.14 × T) + (0.12 × I)*
- PSI = (0.28 × 0.72) + (0.24 × 0.78) + (0.22 × 0.7) + (0.14 × 0.76) + (0.12 × 0.74)
- **PSI = 0.2016 + 0.1872 + 0.1540 + 0.1064 + 0.0888 = 0.738**
-
- **Domain Score Summary:**

Domain	Score (Di)	Weight (Wi)	Weighted Score (Di × Wi)	RII Basis (Domain Mean)	Importance Level
Managerial	0.72	0.28	**0.2016**	0.753	Very High

Governance & Political	0.78	0.24	**0.1872**	0.771	Very High
Financial	0.70	0.22	**0.1540**	0.743	High–Very High
Technical	0.76	0.14	**0.1064**	0.618	High
Institutional	0.74	0.12	**0.0888**	0.728	High
PSI TOTAL	—	1.00	**0.738**	—	**Acceptable**

-

- The Madhya Bhotekoshi HP achieves a PSI of 0.738, placing it firmly in the Acceptable risk zone. This reflects its SPV governance structure, EPF loan conditionality, international supervision (ANDRITZ HYDRO), and dedicated NEA-Chilime project management — structural conditions entirely absent from the cancelled cohort.

Comparative PSI Summary: All Projects

- Table AnnexIV-S1 consolidates PSI scores for all five cancelled projects and the Madhya Bhotekoshi Hydropower Project reference case. The 4.6-fold discrimination ratio between the cancelled cohort mean (0.122) and the reference case (0.743) validates the PSI instrument's predictive power and illuminates the governance differentiators examined in Chapters 4 and 5.

-

Project	M	G	F	T	I	PSI	Risk Class	Outcome
Sunkoshi–Marin	0.12	0.10	0.09	0.21	0.13	**0.122**	Very High Risk	Cancelled
Babai Irrigation	0.14	0.08	0.11	0.18	0.10	**0.120**	Very High Risk	Abandoned by Contractor
Kankai Bridge	0.13	0.07	0.13	0.16	0.11	**0.117**	Very High Risk	Cancelled after 14 years
Jajarkot Maternity Ward	0.15	0.11	0.13	0.20	0.14	**0.142**	Very High Risk	Cancelled
Mid-Hill Highway	0.13	0.10	0.12	0.22	0.12	**0.132**	Very High Risk	Cancelled
Madhya Bhotekoshi HP	0.72	0.78	0.70	0.76	0.74	**0.738**	Acceptable	COMPLETED — Commercial operation 6 October 2025
Mean – Cancelled Cohort	**0.13**	**0.09**	**0.12**	**0.19**	**0.12**	**0.122**	**Very High Risk**	**All Terminated**

-

- **Notes on Domain Score Derivation:**

- Domain scores for each cancelled project are estimated through structured triangulation of four evidence sources: (1) official contract termination notices issued by MoPIT, DoR, and DWRI; (2) Office of the Auditor General (OAG) annual audit reports (FY 2019–2024); (3) Key Informant Interview findings from eight completed KIIs; and (4) verified media accounts from Khabarhub, Rising

Nepal Daily, Setopati, Spotlight Nepal, and Nepal News (2025–2026). Scores are normalised to the [0,1] interval where 0 represents the most severe failure condition and 1 represents full compliance / best practice. The Madhya Bhotekoshi HP reference scores are derived from NEA Annual Report (2024), Kathmandu Post (2024), Sharesansar (2025), and ADB project documentation.

Annex XI – KII

ANNEX XII – Acceptance Letter & Plagarism Test

Gmail

Amrit Raj Pandey <chelseaamrit@gmail.com>

[IOEGC18] Editor Decision

1 message

Dr. Pradeep Shrestha <ioegc17@gmail.com> Sun, Apr 26, 2026 at 10:31 PM
To: Amrit Raj Pandey <chelseaamrit@gmail.com>

Amrit Raj Pandey:

We have reached a decision regarding your submission to 18th IOE Graduate Conference, "A Comprehensive Study of Key Causes of Construction Project Failures in Nepal : A Study on Projects Cancelled by the Cabinet of Ministry of Infrastructure and Transport Dated : September 27, 2025.".

Our decision is to: Accept Submission

With Warm Regards,
IOEGC-18 Editorial Team

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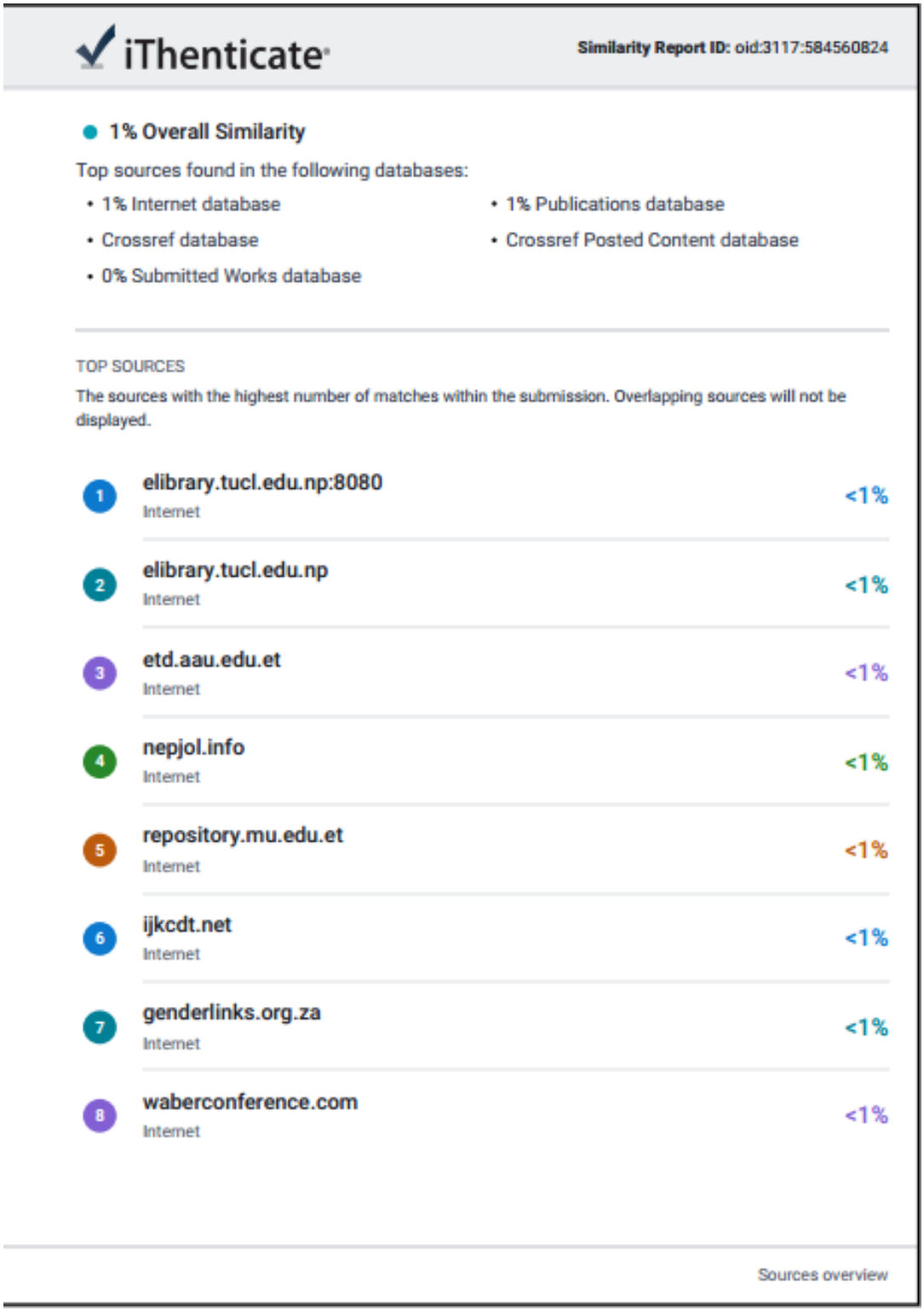

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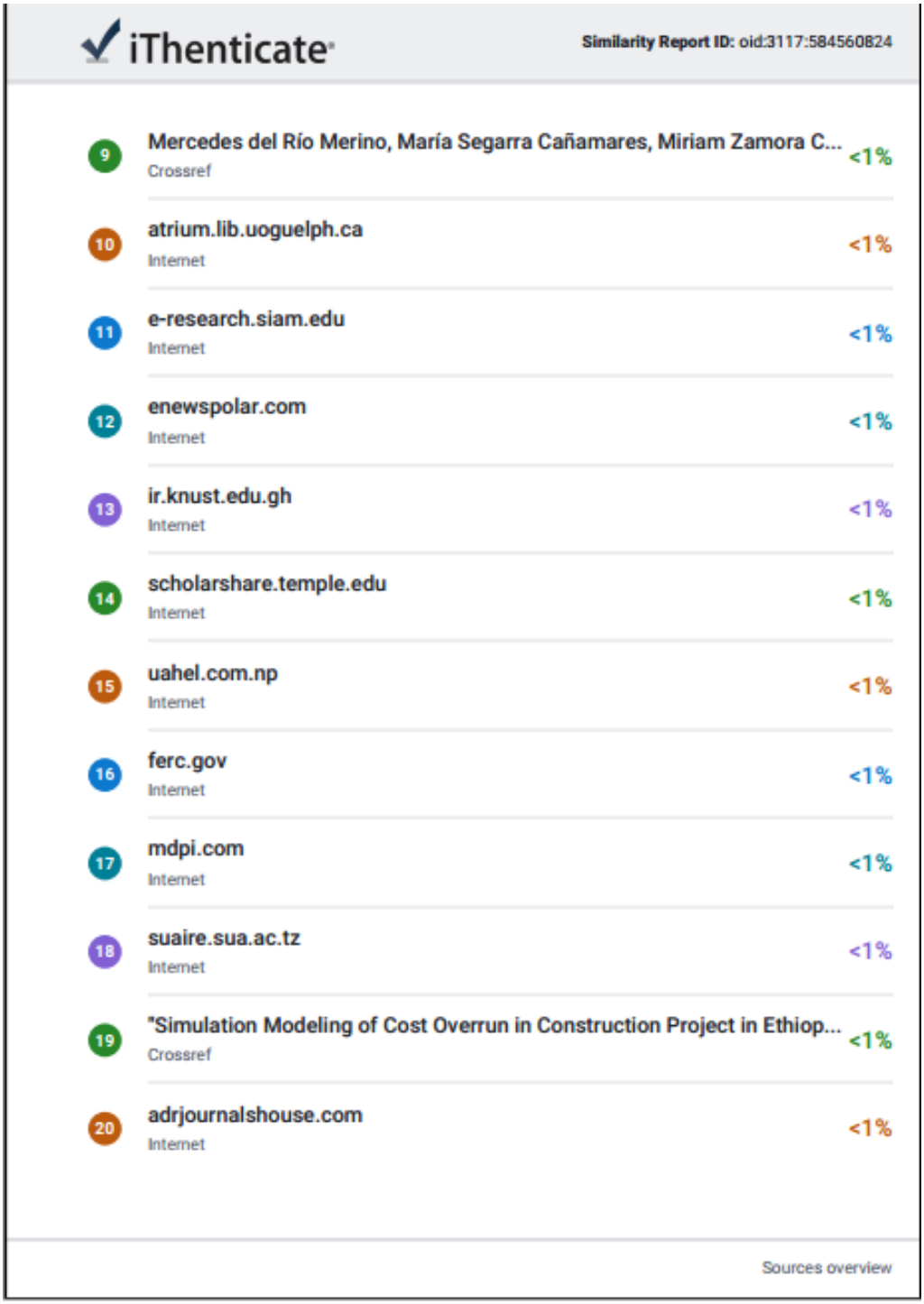
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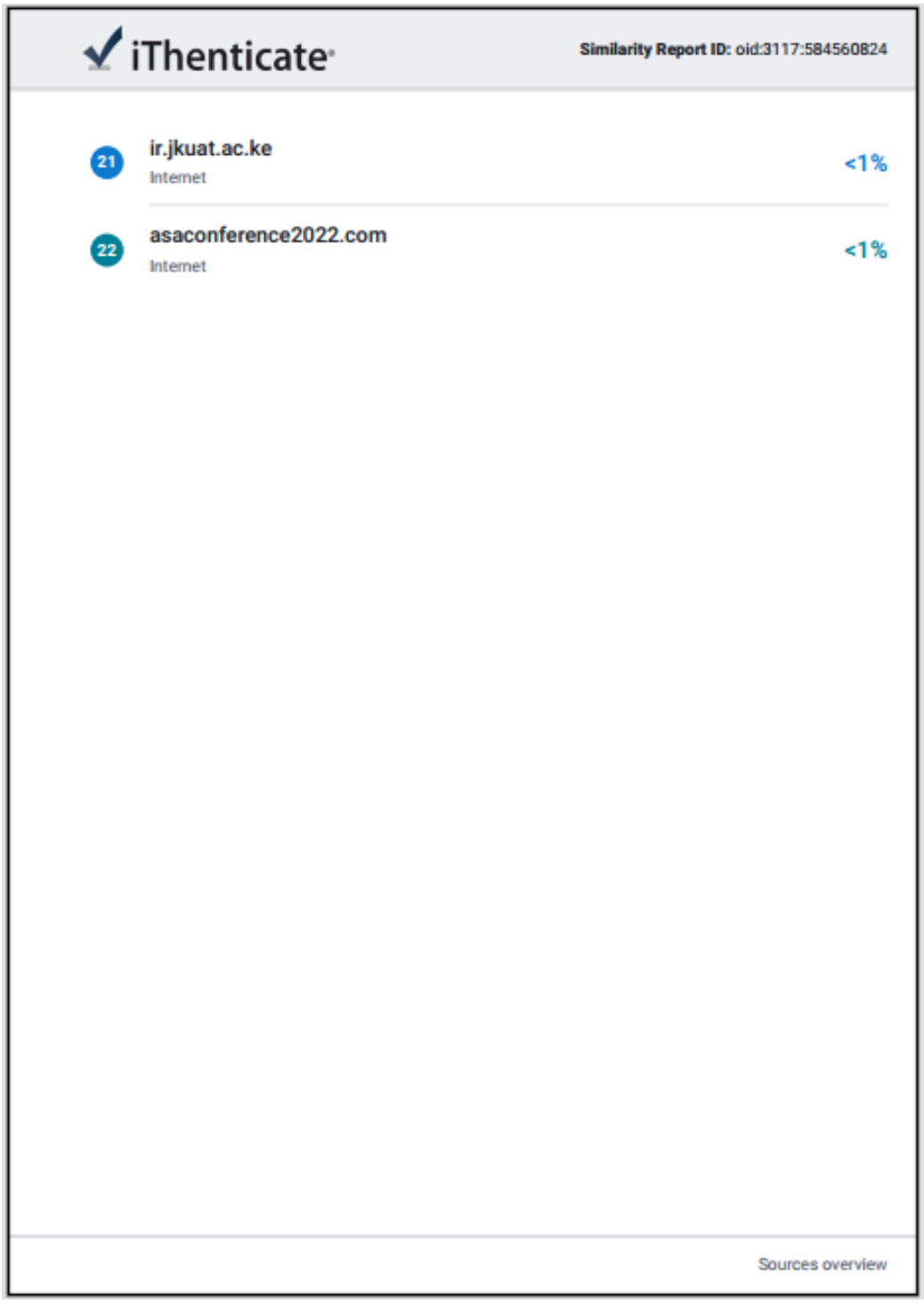
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