

The Impact of Corruption on Infrastructure Project Performance in Pakistan

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ABSTRACT

Corruption remains a major concern in infrastructure procurement because it can affect public resources and project delivery. This study examines the barriers that affect the effective implementation of anti-corruption mechanisms (ACMS) in infrastructure procurement in Pakistan. Using qualitative evidence from 34 semi-structured interviews conducted as part of a doctoral research study on corruption in infrastructure procurement in Pakistan, the study explores the views of professionals involved in infrastructure procurement and project delivery. The participants included project managers, procurement professionals, consultants, contract managers and quality-assurance personnel with relevant infrastructure experience. The findings show that the effectiveness of ACMS is affected by several connected barriers. These barriers are mainly related to regulatory weaknesses, institutional limitations, procedural problems, political influence and behavioral factors. The study found that unclear or inconsistent rules, weak monitoring, limited institutional independence, weaknesses in complaint and reporting systems, political interference, fear of retaliation and limited knowledge can reduce the practical effectiveness of existing mechanisms. The findings also show that these barriers do not work separately. They can reinforce one another and create an implementation gap between the formal existence of anti-corruption mechanisms and their actual use in infrastructure procurement. For example, a reporting mechanism may exist formally, but its effectiveness can remain limited when employees do not trust the system, fear negative consequences or believe that complaints will not lead to appropriate action. The study contributes to understanding corruption in infrastructure procurement by bringing together barriers that limit ACMS implementation in Pakistan. It also highlights the importance of looking beyond formal rules and considering whether organizations have the independence, resources and capacity needed to apply them effectively. The findings have practical implications for procurement organizations, project managers and regulatory bodies. They suggest that improving anti-corruption performance requires clearer procedures, stronger monitoring, more independent institutions, better reporting arrangements, appropriate use of technology and greater protection for people who report wrongdoing.

Keywords: corruption; infrastructure procurement; project performance; Pakistan; public infrastructure

INTRODUCTION

Infrastructure development plays an important role in the economic and social development of a country. Roads, bridges, buildings, transport systems, energy facilities and other public infrastructure require large investments and involve many organizations and individuals. These projects are often complex, have long life cycles and involve large financial resources. These characteristics can create opportunities for corruption at different stages of infrastructure development and delivery (Bowen et al., 2007; Locatelli et al., 2017).

Corruption in infrastructure procurement is much more than a governance or ethical problem. It can also become a project performance problem. When procurement decisions are influenced by bribery, favoritism, political interests or other corrupt practices, the effects can continue after a contract has been awarded (Locatelli et al., 2017). Decisions relating to procurement, contractor selection, contract management and project execution can influence project cost, completion time and the quality of the infrastructure delivered (Owusu et al., 2019).

Previous research has established a relationship between corruption and infrastructure project performance. Locatelli et al. (2017) found corruption as an important problem affecting public projects and megaprojects. Their study shows that corruption can influence project costs, schedules and the benefits expected from public projects. Research by Shah et al. (2022) also found several causative indicators linked to corruption in infrastructure procurement in developing countries. Building on that earlier work, the present study shifts attention from the causes of corruption to its effects for project performance.

The effects of corruption, however, are not necessarily limited to cost, time and quality. Corruption can also influence decisions made before a project begins. The thesis evidence shows that projects may be selected without adequate consideration of their economic viability and that politically influenced decisions can result in projects that do not provide sufficient value to the public. These practices can have direct effects for project delivery. The doctoral research found that infrastructure projects experienced delays, shortages of funds, increased costs and low-quality goods and services. It also found that some projects were left incomplete following changes in government. In such cases, public land, funds, time and effort could be wasted, while some incomplete infrastructure continued to deteriorate.

Research on corruption in construction shows that corrupt practices can be linked to compromised project outcomes, including poor-quality work and materials (Khadim & Jaffar, 2021; Owusu et al., 2019). More recent research also shows increasing interest in detecting corruption and procurement fraud through data-driven methods, including statistical, network and machine-learning approaches (Santos et al., 2025). Corruption in infrastructure procurement can contribute to poor infrastructure quality, inefficient resources and failure to provide intended public services (Le et al., 2014; Khadim & Jaffar, 2021). These effects show why corruption should not be viewed only as money lost through an individual corrupt transaction. Recent research reinforces the importance of understanding the conditions under which transparency and governance measures actually work. Ambituuni (2025) examines the Infrastructure Transparency Initiative from a principal-agent perspective and finds factors that can enable or hinder the effectiveness of transparency in public infrastructure projects. Siino et al. (2026) evaluates corruption-risk indicators using procurement and organized-crime data. Their findings highlight the usefulness of indicators related to competition and discretion for finding higher-risk procurement processes. Despite this body of research, there is still a need to understand how corruption translates into specific infrastructure project performance problems, especially in Pakistan. Existing research has examined corruption forms, causes, vulnerabilities and measures for controlling corruption. The present study takes a different focus. Rather than examining what corruption is or how it can be prevented, it asks what happens to an infrastructure project when corruption affects its procurement and delivery.

Accordingly, this study addresses three research questions:

The present study therefore treats project performance broadly through cost, time, quality, project completion and project value. Safety, efficiency and stakeholder satisfaction are also recognized as potentially important performance dimensions; however, they were not directly measured in the present qualitative analysis and are identified as areas for future empirical testing.

RQ1: How does corruption affect the cost, time, quality and completion of infrastructure projects in Pakistan?

RQ2: Through what measures does corruption contribute to poor infrastructure project performance?

RQ3: What wider effects arise when corruption leads to poor infrastructure project performance?

The study is based on qualitative evidence from infrastructure procurement professionals in Pakistan. The original doctoral research used semi-structured interviews and thematic analysis to investigate corruption in infrastructure procurement. For the present paper, the analysis is focused specifically on material concerning the impact of corruption on infrastructure project performance.

The remainder of the paper reviews the literature, explains the research methodology, presents the empirical findings, discusses the findings and concludes with theoretical and practical implications.

LITERATURE REVIEW

Corruption in Infrastructure Procurement

Infrastructure procurement involves planning, financing, selection, contracting and implementation of projects that use large public or private resources. Because of the size of the financial commitments, number of organizations and technical complexity involved, corruption can occur at several points throughout the project lifecycle (Le et al., 2014; Locatelli et al., 2017). Recent research highlights the continuing importance of finding procurement fraud earlier. Santos et al. (2025) systematically mapped data-driven approaches to public procurement fraud detection and found growing use of machine learning, network science and statistical methods, while noting continuing challenges around real-world implementation and data availability.

Project performance is often assessed through cost, time and quality. These measures remain important because a project that exceeds its budget, takes largely longer than planned or delivers poor-quality infrastructure cannot normally be considered fully successful. Infrastructure projects, however, differ from many other projects because their purpose extends beyond completing a contract. Public infrastructure is expected to provide services and benefits over a long period. Performance should so also consider whether the project is completed, provides its intended function and generates appropriate public value. For this study, project performance is considered through five connected dimensions: cost, time, quality, project completion and delivery and project value. This wider view is consistent with the need to consider both project-level outcomes and the conditions shaping procurement decisions (Cui et al., 2024).

One of the most direct effects of corruption on infrastructure projects is increased cost. Contractors may attempt to recover the cost of bribes, kickbacks or other unofficial payments by increasing prices, reducing quality or seeking additional payments during project execution. Locatelli et al. (2017) find corruption as an important factor affecting the cost performance of public projects. Fazekas and Tóth (2018) provide evidence of the financial significance of corruption in transport infrastructure and are especially relevant to the present study's finding that very low bids may later be followed by price adjustments. Signor et al., (2026) shows how unusually low winning-bid discounts combined with limited genuine competition can provide statistically defensible evidence of collusion in public infrastructure procurement

Time is another important measure of infrastructure project performance. Delays increase the period during which resources remain committed to a project and can postpone delivery of expected services. The thesis findings provide direct evidence of projects being deliberately delayed to place pressure on government for additional funding and of delays linked to renegotiation and collusion. Where a contract is won at an artificially low price, additional financial demands can later delay execution (Fazekas & Tóth, 2018).

Cost and time are not the only areas affected by corruption. The quality of infrastructure can also suffer. Contractors may attempt to recover corrupt-payment costs by reducing expenditure on materials or workmanship (Khadim & Jaffar, 2021). Recent procurement research also shows that reduced competition and greater discretion can be indicators of higher-risk procurement processes (Siino et al., 2026).

A project that is not completed cannot provide its intended infrastructure service. The thesis findings show that corruption can be linked to incomplete and abandoned infrastructure, with funding shortages, changes in government and inappropriate contractor selection among the issues found. The problem becomes especially serious when a project is initiated without adequate consideration of its economic and practical value.

Resources may be committed to a project that later becomes difficult to complete, leaving public funds and other resources tied up without delivering the intended benefit.

Infrastructure investment is ultimately intended to produce a useful outcome for society. Therefore, the question is not only whether a project is delivered within budget and schedule, but also whether the project itself was worth undertaking. The thesis findings show that inadequate consideration of cost-benefit factors can contribute to project selection for political rather than economic reasons. This creates an important distinction between a conventional cost overrun and distorted project selection.

Research Gap

Much of the literature examines corruption risk, causes or control measures rather than following the effects of corruption through the project performance process.

Cost, time and quality are often discussed as separate outcomes, while completion and project value receive less attention. There is also a need for more context-specific evidence from Pakistan.

The present study addresses these gaps by focusing specifically on how corruption affects infrastructure project performance in Pakistan and by bringing together cost, time, quality, completion and project value.

Analytical Framework

Based on the literature and the empirical focus of the study, corruption is treated as a factor that can distort project and procurement decisions. These distortions can then affect different dimensions of project performance.

The proposed analytical relationship is as shown in figure 1. The framework is qualitative rather than statistical. It is used to organize the empirical findings and examine whether the relationships found in the literature are reflected in the experiences reported by infrastructure procurement professionals in Pakistan.

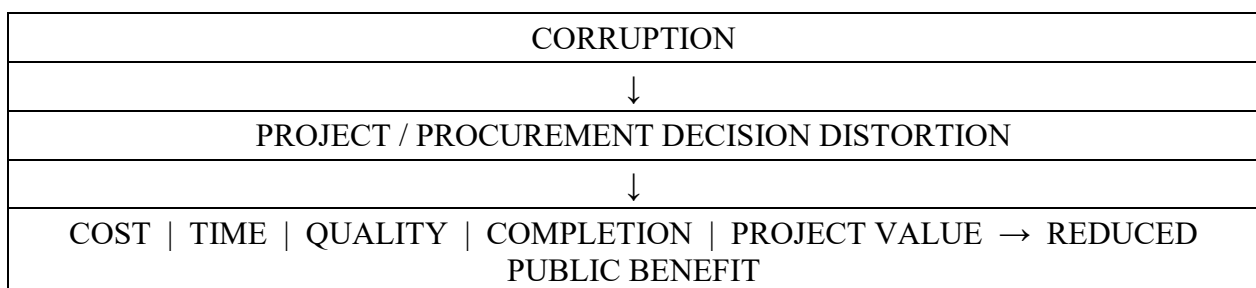


Figure 1. Corruption and Infrastructure Project Performance Framework. Source: Developed by the authors based on the empirical findings of the doctoral research.

METHODOLOGY

Research Approach

This study adopts a qualitative research approach to examine how corruption affects infrastructure project performance in Pakistan. The approach was appropriate because the study seeks to understand the experiences and observations of professionals involved in infrastructure procurement and project delivery.

Research Context

The study focuses on infrastructure procurement in Pakistan. Infrastructure projects involve multiple stakeholders, including government departments, procurement authorities, consultants, contractors, project managers and other professional groups.

The Pakistani context is relevant because infrastructure development represents an important component of public investment, while concerns about corruption, procurement practices, project delays and inefficient use of public resources have been reported in the literature (Khadim & Jaffar, 2021; Khan et al., 2019).

Data Collection

The original doctoral study used semi-structured interviews to collect qualitative information from professionals with experience of infrastructure procurement and project delivery in Pakistan.

For the present study, particular attention is given to interview material relating to project cost, project delays, quality of work and materials, project completion, contractor and procurement decisions, project selection, renegotiation and additional financial demands and the wider value obtained from infrastructure investment.

Participants

The original doctoral research involved 34 semi-structured interviews with professionals linked to infrastructure procurement and project delivery. The participants represented different professional perspectives, including project management, procurement, consulting, contract management and quality-related roles. The interviews were not intended to provide statistical representation of the entire infrastructure sector. Their adequacy is considered in relation to the depth of qualitative evidence and the range of professional roles represented in the sample. The interviews covered Islamabad, Rawalpindi, Lahore and Karachi, providing perspectives from more than one project location. At the same time, the sample does not represent every province or every category of infrastructure project, and this limitation should be considered when interpreting the findings.

Data Analysis

The original study used thematic analysis to analyze the interview data. The doctoral research's use of thematic analysis follows the established approach described by Braun and Clarke (2006).

For this paper, the analysis is focused specifically on themes relating to project performance effects. The findings are organized around cost, time, quality, project completion and delivery and project value.

Analytical Focus

The analytical framework treats corruption as a factor that can distort project and procurement decisions, which can then affect project performance.

The distortions found from the thesis material include financial manipulation, collusion or favoritism, inappropriate contractor selection, political influence, low bidding followed by renegotiation and other forms of decision-making that can affect project delivery.

Trustworthiness and Ethics

The use of participants with professional experience in infrastructure procurement provided access to first-hand knowledge. The semi-structured format allowed participants to explain experiences in detail. The original research treated participant information confidentially and avoided finding individuals or organizations.

Scope and Limitations

The qualitative design provides detailed insight into how corruption can affect infrastructure project performance, but it does not provide a statistical estimate of the size of these effects. The findings should so be understood as qualitative evidence of measures and effects rather than statistical estimates of causal effects.

Because the present study is qualitative, project size, project type, funding source, location, contractor experience and project duration were not treated as statistical control variables. These variables are important

for future quantitative testing because differences in project characteristics may influence project performance independently of corruption. A mixed-methods design could strengthen future research by combining interviews with questionnaires, project records, procurement documents and case studies, allowing qualitative explanations to be examined alongside objective project-performance measures.

The present study is a focused analysis of a wider doctoral research program rather than a new standalone data collection exercise. Its analytical focus is restricted to project performance effects and is distinct from corruption forms, causes and anti-corruption implementation issues examined in the author's other publications.

FINDINGS

Cost escalation emerged as one of the clearest effects of corruption in infrastructure projects. Participants described contracts awarded at apparently low prices followed by post-contract renegotiation. The thesis reports price and scope adjustments and collusion between contractors and procuring agencies. Participants also reported approval of exaggerated prices and low-quality materials in exchange for bribes or kickbacks. This means the initial contract price may not represent the eventual project cost.

The findings so suggest two related routes:

low or manipulated initial bid → contract award → renegotiation → increased expenditure

Corrupt payment → inflated material prices or compromised material quality → additional expenditure and maintenance.

Time performance was closely connected with the financial problems found above. The original analysis found that projects were sometimes intentionally delayed to put pressure on government for additional funds. Participants also described delays linked to collusion between procuring agencies and contractors. Where a contract was won at an artificially low price, additional financial demands could later be made during renegotiation. Project execution could then be delayed until these demands were addressed. The thesis also reports that political influence could reduce the motivation of project managers, consultants and contractors to complete projects on time.

Participants reported that corruption could lead to poor-quality materials and services. The thesis shows that contractors who paid bribes to obtain contracts could later attempt to recover these costs by compromising the quality of their work. Projects awarded to companies without appropriate technical capabilities could also remain unfinished or be poorly completed. Participants associated favoritism and collusion with the selection of companies owned by relatives, friends or associates rather than through fair competition.

The findings show that corruption can affect whether an infrastructure project is completed or left abandoned due to changes in government or shortages of funds. Abandoned projects could result in loss or misuse of public land, funds, time and effort. Some incomplete buildings deteriorated, while incomplete roads continued to be used despite safety risks. Another pathway involved selection of contractors without adequate technical capability. Projects awarded through favoritism could fail to start or remain incomplete because the selected organization lacked required skills or because funds had been diverted.

Participants reported that cost-benefit analysis was often overlooked when projects were selected. The thesis analysis shows that some projects were chosen because of political benefits rather than economic viability. If an inappropriate project is selected at the beginning, later problems may include excessive costs, insufficient funding, incomplete construction, poor public benefit and wasted resources. The problem may so be that the project itself should not have been prioritized.

Recent research supports the value of earlier procurement-risk identification. Santos et al. (2025) show growing use of data-driven methods to find procurement fraud, while Siino et al. (2026) show how procurement-risk indicators can find processes linked to reduced competition and greater discretion.

Overall, corruption affects infrastructure project performance through multiple connected pathways rather than through a single outcome. The effects can begin with project selection, continue through procurement and contracting and eventually appear as cost increases, delays, poor quality, incomplete infrastructure and reduced public value.

PATHWAY A: Artificially low bid → renegotiation → additional financial demands → delay / higher cost
PATHWAY B: Corrupt payment / kickback → cost-recovery pressure → compromised materials/workmanship → poor quality
PATHWAY C: Political influence → weak project selection → funding/implementation problems → reduced public value
Cross-cutting outcome: project underperformance and reduced public benefit

Figure 2. Corruption Pathways Affecting Infrastructure Project Performance Source: Developed by the authors from the empirical findings of the doctoral research.

DISCUSSION

Corruption affects infrastructure project performance in Pakistan in ways that extend well beyond the immediate exchange of money or other improper benefits. Corruption can influence decisions from project selection through procurement, contracting and implementation. These effects can appear as higher costs, delays, poor-quality work, incomplete projects and reduced public value. This interpretation is consistent with Locatelli et al. (2017), who argues that corruption can affect public projects and megaprojects at different stages and influence cost, time and expected benefits.

Corruption can contribute to cost increases through post-contract renegotiation, inflated prices and additional financial demands. This supports previous research linking corruption with higher project costs (Fazekas & Tóth, 2018; Locatelli et al., 2017). The initial contract price may not provide a reliable picture of the final financial burden when corruption is present. Recent forensic research shows that unusually low winning-bid discounts combined with limited genuine competition can provide evidence of collusion in infrastructure procurement (Signor et al., 2026).

Participants reported projects deliberately delayed to place pressure on government for additional funding. The thesis also finds delays linked to renegotiation and collusion. When a contractor submits a low bid and later seeks additional payments, slowing project execution can create pressure on the procuring organization to agree to those demands. The same corrupt arrangement may so affect both cost and time performance.

The findings concerning quality are important because effects can remain long after completion. Participants reported poor-quality materials and services, while the thesis describes situations in which corrupt payments were compensated for by compromising material quantity and quality. This supports the argument that corruption can affect infrastructure quality through economic incentives. Recent procurement research also suggests that reduced competition and greater discretion can be indicators of higher-risk procurement processes (Siino et al., 2026).

Participants described projects that remained incomplete because of funding shortages, inappropriate contractor selection and changes in government. An abandoned infrastructure project presents a more fundamental failure than a normal cost or schedule overrun because the intended service may never be delivered.

Participants reported that cost-benefit analysis and project feasibility could be overlooked when political or personal interests influenced project selection. This suggests that project performance should be considered from project selection rather than only from contract award onwards. The finding introduces project value as an additional dimension of infrastructure project performance. A project may be completed but still provide limited value if it was poorly selected from the beginning.

The findings suggest that corruption affects infrastructure projects through interconnected pathways. A corrupt procurement decision can generate a sequence in which cost, time, quality, completion and value are linked. Ambituuni (2025) shows that infrastructure transparency initiatives can be enabled or hindered by institutional conditions. Santos et al. (2025) highlight data-driven approaches to fraud detection, while Siino et al. (2026) show the potential of corruption-risk indicators. Together, these studies point toward earlier identification of procurement risks.

The findings agree with Locatelli et al. (2017) that corruption can negatively affect project cost, time and expected benefits. They are also consistent with research showing corruption as a significant risk in construction and infrastructure procurement (Owusu et al., 2019) and with Pakistan-specific evidence on public infrastructure projects (Khadim & Jaffar, 2021). The present study brings these effects together within a single project performance perspective rather than treating cost escalation, delays, poor quality and incomplete projects as unrelated effects.

Contribution of the Study

The study makes three main contributions. Firstly, it provides a wider understanding of project performance by including cost, time, quality, completion and project value. Secondly, it shows that corruption can create connected pathways rather than isolated outcomes and lastly, it shows that corruption can affect projects before construction begins through distorted project selection.

The study extends the author's earlier work on causative indicators of corruption in infrastructure procurement (Shah et al., 2022b) by shifting the analytical focus from why corruption occurs to how corruption affects infrastructure project performance and value.

Practical Implications

Practically the following points should be incorporated to avoid corruption,

1. Project selection should be supported by transparent feasibility and cost-benefit assessments.
2. Procurement agencies should examine unusually low bids carefully and monitor large post-award renegotiations and contract variations.
3. Contractor selection should consider technical capability and previous project performance.
4. Project monitoring should examine cost, time and quality together.

Recent research suggests that data-driven risk indicators can support this approach. Santos et al. (2025) finds growing use of data-driven fraud detection, while Siino et al. (2026) shows corruption-risk indicators based on procurement data.

Overall, corruption can create a cumulative effect on infrastructure project performance. It can begin with a distorted decision, continue through procurement and contracting and eventually appear as higher cost, longer duration, lower quality, incomplete delivery and reduced public value. The study so supports understanding corruption as a project performance risk that can spread across the infrastructure project lifecycle.

THEORETICAL AND PRACTICAL IMPLICATIONS

Theoretical Implications

The main theoretical implication is that corruption should be viewed as a project performance risk rather than

only as a governance or ethical problem. The findings show that corruption can influence infrastructure projects at different points in their lifecycle and that effects can appear as cost increases, delays, poor quality, incomplete projects and reduced public value.

Project performance should so be considered more broadly when corruption is examined. Traditional measures emphasize cost, time and quality, but the findings suggest that completion and project value are also important in infrastructure projects.

The interconnected nature of outcomes also suggests that corruption should be analyzed through pathways rather than isolated effects.

Practical Implications

Project selection should be based on documented development needs, feasibility, expected benefits, available resources, lifecycle costs and long-term sustainability. Preventing an inappropriate project from entering the procurement pipeline may be more effective than attempting to correct it after construction begins.

Procurement agencies should assess unusually low bids carefully rather than treating the lowest price as automatically representing the best outcome. Significant contract variations and renegotiations should receive additional scrutiny. Recent work on public procurement also stresses process integration, transparency and consistency as ways of improving procurement integrity and reducing corruption risks (Alsamarraie & Mohd Ghazali, 2025).

Contractor selection should consider technical capability, previous performance, financial capacity and experience with similar projects. Monitoring should examine cost, schedule and quality together.

Recent research suggests that data-driven risk indicators can support this approach. Santos et al. (2025) find growing use of data-driven fraud detection, while Siino et al. (2026) show corruption-risk indicators based on procurement data.

Transparency and Governance Implications

Transparency should not be treated as effective simply because information is formally disclosed. Ambituuni (2025) shows that the effectiveness of infrastructure transparency initiatives depends on institutional and relational conditions. Transparency arrangements should so be assessed not only by whether information is published, but also by whether it can be used effectively for scrutiny, accountability and corrective action. Chikuni et al. (2026) similarly found that formally constituted and legally empowered steering structures can strengthen oversight in LMIC infrastructure projects, whereas informal or politically influenced structures can increase corruption vulnerability.

Conflict of Interest

The authors declare that there is no conflict of interest related to this study.

Data Availability

The interview data are not publicly available because they contain confidential information provided by participants. The data may be made available by the corresponding author upon reasonable request, subject to participant confidentiality and any applicable research ethics requirements.

Ethical Approval

Ethical approval and participant consent were addressed as part of the doctoral research process. Participants were informed about the purpose of the study and their participation was voluntary. The interview information was treated confidentially.

CONCLUSION AND RECOMMENDATIONS

Corruption in infrastructure procurement is often discussed as a problem involving illegal payments, favoritism, collusion or abuse of public resources. The findings of this study show that its effects are much wider. Corruption can influence how infrastructure projects are selected, procured and implemented and these decisions can determine whether a project provides the intended benefit to the public.

The study examined the impact of corruption on infrastructure project performance in Pakistan using qualitative evidence from professionals involved in infrastructure procurement and project delivery. Five dimensions of project performance were found: cost, time, quality, completion and project value.

The findings show that corruption can contribute to increased project costs through inflated prices, post-contract renegotiation and additional financial demands. It can also contribute to delays, especially when project execution becomes linked to negotiations over additional payments. Quality can suffer when corrupt payments are recovered through reduced material quality or inappropriate contractor selection.

The findings also highlight the importance of project completion. Funding shortages, inappropriate contractor selection and changes in political leadership can contribute to projects being left incomplete or abandoned.

Perhaps the most important finding is that corruption can affect project performance before procurement begins. Where project selection is influenced by political or personal interests and proper feasibility or cost-benefit analysis is overlooked, the problem is built into the project from the beginning.

The study so argues that corruption should be understood as a project performance risk that can operate throughout the infrastructure lifecycle.

Based on the findings, five recommendations are proposed. First, project selection should be supported by transparent feasibility and cost-benefit assessments. Second, procurement agencies should assess unusually low bids carefully and monitor significant post-award renegotiations. Third, contractor selection should give sufficient attention to technical capability and previous performance. Fourth, project monitoring should examine cost, time and quality together. Fifth, infrastructure projects should be evaluated after completion based on whether they deliver the intended service and public value.

The main contribution of the study is a project performance perspective on corruption in infrastructure procurement. The evidence suggests that corruption can affect how much a project costs, how long it takes, the quality of what is delivered, whether it is completed and whether it provides meaningful value to the public.

Future quantitative research could test these relationships using larger samples of Pakistani infrastructure projects and objective indicators such as cost growth, schedule delay, contract variation, quality defects and completion status.

Future quantitative or mixed-methods research should therefore extend the present framework by examining additional performance dimensions such as safety, efficiency and stakeholder satisfaction, while controlling for project size, project type, funding source, location, contractor experience and project duration. Future studies should also seek wider coverage across provinces and infrastructure categories and combine interview evidence with objective project records, procurement documents and other available data sources.

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