STRENGTHENING THE INFRASTRUCTURE PROJECTS SITE SUPERVISION OF THE CONSTRUCTION DIVISION IN DPWH ROV

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Abstract

The success of infrastructure and development projects largely depends on their authenticity, necessity, and proper implementation. However, weak project site supervision often results in the approval and completion of unnecessary or poorly executed projects, leading to wasted resources, inefficiency, and reduced public trust in governance. This study investigated how project site supervision can be strengthened to ensure that only genuine and necessary projects are funded and completed. The research employed a mixed-method approach, combining document analysis, surveys, and key informant interviews with project engineers, and inspectors. The study evaluated current supervision practices, identifies gaps and challenges in oversight, and examines the relationship between supervision mechanisms and project outcomes. Furthermore, it develops a framework for enhancing site supervision, focusing on transparency, accountability, and compliance with technical and financial standards. Findings highlighted that inadequate monitoring, lack of qualified supervisors, and weak enforcement of standards and specifications are among the key factors that allow non-essential and low-quality projects to proceed. Strengthening supervision practices through stricter monitoring protocols, capacity building, and the use of technology-based monitoring tools can significantly improve project integrity and sustainability. This research hoped to contribute to the field of project management and governance by emphasizing the critical role of site supervision in ensuring that resources are allocated efficiently and that infrastructure projects respond to genuine community needs.

Keywords: *Supervision, Proper Implementation, Qualified Supervisors, Project Integrity and Sustainability*

1. Introduction / Background of the Study

Road infrastructure is essential to accessibility, mobility, and economic growth in the Philippines, which is why the national government continues to prioritize road development projects. These projects are implemented and supervised by the Department of Public Works and Highways (DPWH) and are intended to support trade, productivity, and national development. However, despite continued investment, concerns remain regarding sustainability, safety, and the effective use of road infrastructure, particularly in urban areas.

While DPWH implements large-scale road programs nationwide, many public infrastructure projects still experience delays, cost overruns, and quality issues. Reports have consistently identified weak monitoring, poor coordination, and inconsistent enforcement of standards as recurring problems. Project site supervision has been highlighted as a critical factor influencing construction quality, safety, and compliance with project requirements.

Although DPWH has established policies to ensure qualified supervision personnel, challenges persist in applying these standards at the field level, especially in regional offices. Existing studies recognize the importance of supervision but often focus on private construction or overall project outcomes, with limited attention to supervision practices within government agencies.

This study responds to this gap by examining project site supervision in the Construction Division of DPWH Regional Office V. It focuses on actual supervision practices, identifies existing strengths and weaknesses, and incorporates the views of field personnel directly involved in implementation. The study aims to generate practical insights that can help improve supervision, enhance accountability, and support the successful delivery of public road projects.

1.1. Objectives of the Study

a. *To describe the profile of the following*
   a. Respondents

   b. Project Types;

b. *To determine the existing policies, practices and procedures of the project site supervision;*

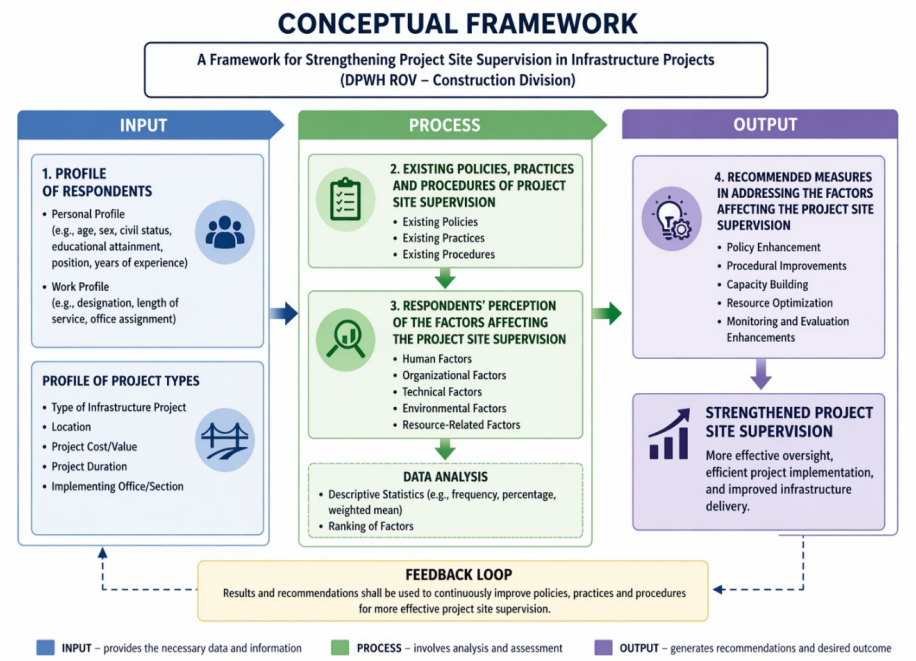
c. *To determine the respondent's perception of the factors affecting the project site supervision; and*

d. *To recommend measures in addressing the factors affecting the project site supervision.*

1.2. Theoretical or Conceptual Framework

This study is anchored on Project Management Theory and Systems Theory, which together explain how effective project implementation depends on both structured management processes and the interaction of various project components. Project Management Theory, as emphasized in the PMBOK framework, highlights the importance of the monitoring and controlling phase, where project site supervision ensures that construction activities follow approved plans, schedules, budgets, and quality standards. In this study, the theory provides the basis for examining how supervision practices contribute to efficient, transparent, and accountable project implementation within the DPWH.

Systems Theory complements this perspective by viewing project site supervision as part of a larger, interconnected system composed of people, procedures, and operating conditions. Effective supervision relies on proper coordination, feedback, and the ability to adapt to internal and external changes during project execution. Supported by findings from previous studies, these theories collectively emphasize that strong site supervision is essential in preventing delays, reducing inefficiencies, and ensuring that public infrastructure projects are completed according to required standards.



2. Methodology

This study used a descriptive quantitative research design to describe current practices and conditions in project site supervision at the DPWH Regional Office No. V (Construction Division). This design was chosen because it allows data to be collected at a single point in time, providing a clear picture of existing conditions and patterns related to project supervision. Through this approach, the study was able to systematically gather and analyze data that explain how supervision is currently practiced and what issues are commonly encountered.

The respondents consisted of 115 DPWH personnel directly involved in project implementation, including project engineers, project inspectors, and section chiefs. A purposive sampling technique was applied to ensure that participants had direct experience and relevant knowledge of site supervision. Data were collected primarily through a structured questionnaire using a Likert scale to assess project management problems and possible solutions. This was supplemented by interviews with selected key informants and a review of relevant project documents to support and validate the survey results. Statistical tools such as weighted mean were used to analyze the responses.

2.1. Population and Sampling

The study covered personnel from the DPWH ROV – Construction Division who were directly involved in project site supervision and implementation. These included 30 project engineers, 82 project inspectors (both permanent and Job Order personnel), and 3 section chiefs, for a total of 115 respondents. These groups were considered appropriate for the study since they were actively engaged in monitoring, managing, and evaluating infrastructure projects, and were therefore in a position to provide reliable and experience-based insights on current supervision practices.

Given the nature of the study, participants were selected based on their direct involvement in project supervision. A purposive sampling approach was adopted to ensure that only those with relevant roles and actual field experience were included. This allowed the study to focus on respondents who were most familiar with the existing policies, procedures, and day-to-day practices in project implementation. At the same time, the approach proved practical in terms of accessibility and time constraints, while still capturing a broad range of perspectives from key personnel within the Construction Division.

Distribution of Respondents

Table 1
Population of Respondents

Office Assignment	Population	Overall Total	%
Project Engineers	30	27	90%
Project Inspectors	82	48	58.54%
Section Chiefs	3	3	100%
Total	115	78	**67.83%**

2.2. Data Gathering Procedures

To establish the legitimacy and authenticity of the study, the researcher prepared a formal request letter addressed to Virgilio C. Eduarte, CESO III, Regional Director DPWH Regional Office V, seeking approval to conduct a survey among the engineers in the division. After permission was granted, the researcher personally distributed the survey questionnaires to each respondent to ensure proper administration and timely retrieval upon completion. The researcher likewise guaranteed that the respondents' identities and all information provided would remain strictly confidential and would be used solely for academic purposes related to this study. Once collected, the data were carefully organized, tabulated, evaluated, and analyzed to generate findings aligned with the research objectives.

2.3. Ethical Considerations

To uphold integrity and ensure the responsible conduct of research, the study strictly adhered to established ethical standards throughout the entire research process. Prior to data collection, the researcher sought formal approval from the Department of Public Works and Highways (DPWH) Regional Office No. V, Construction Division, by submitting a request letter to the Chief of the Division. Only after permission was granted did the data gathering activities commence (See Appendix A).

All respondents were informed of the purpose of the study, the scope of their participation, and the voluntary nature of their involvement. Each participant was assured that they had the right to decline participation or withdraw from the study at any stage without facing any negative consequences. An informed consent procedure was observed, wherein respondents were made aware that the information they would provide would be treated with the highest degree of confidentiality and used solely for academic purposes.

3. Results

This chapter discussed the findings of the study derived from the survey questionnaires administered to the respondents. The respondents consisted of Section Chiefs, Project Engineers, and Project Inspectors (permanent and job orders) of the DPWH ROV (Construction Division) who were directly involved in the supervision and implementation of infrastructure projects.

The presentation of results and discussion was arranged into three major sections in line with the specific objectives of the study and the structure of the questionnaire. The first section examined the existing practices, policies, and procedures in project site supervision, with emphasis on identifying their strengths and weaknesses. The second section discussed the factors that influenced project site supervision during the implementation of infrastructure projects. The third section presented the recommended measures aimed at strengthening project site supervision in the DPWH Regional Office V (Construction Division).

Both qualitative and quantitative methods were employed to provide a comprehensive assessment of the current supervision practices. A total of 115 questionnaires were distributed, of which 78 were retrieved, resulting in an overall response rate of 67.83%. The remaining 37 respondents were not cooperative and did not provide any response. All returned questionnaires were reviewed and found to be valid for data analysis, yielding a response validity rate of 100%.

As shown in the table below, all questionnaires distributed to Section Chiefs

were returned, indicating a 100 percent response rate. Among Project Engineers, 27 out of 30 questionnaires were retrieved, corresponding to a 90 percent response rate.

Meanwhile, 48 out of 82 questionnaires distributed to Project Inspectors were returned, resulting in a response rate of 58.54 percent. The consistently high response and validity rates indicated that the data gathered were adequate and reliable for subsequent analysis.

The findings presented in the succeeding sections were analyzed and discussed in relation to the objectives of the study and served as the basis for the conclusions and recommendations presented in the next chapter.

4. Discussions

The findings of this study provided a clear picture of project site supervision practices in the DPWH ROV (Construction Division). Survey responses from Section Chiefs, Project Engineers, and Project Inspectors revealed both the strengths of current supervision practices and the factors affecting their effectiveness.

4.1. Respondent Profile and Project Context

The respondent profile showed that the majority of those directly involved in project site supervision were Project Inspectors, who accounted for 61.54 percent of the total respondents. This was followed by Project Engineers at 34.62 percent, while Section Chiefs comprised only 3.85 percent of the respondents. This distribution reflected the actual operational setup in DPWH–Regional Office V, where day-to-day site supervision was primarily handled by inspectors and engineers, with section chiefs providing administrative direction and technical oversight.

In terms of work experience, most respondents reported having two to six years of professional experience (35.29 percent), indicating that a significant portion of supervision personnel were relatively early in their careers. However, the presence of respondents with more than fifteen years of experience (17.95 percent) suggested that institutional knowledge and technical expertise were still available within the Division. This mix of experience levels allowed experienced personnel to guide and support less experienced staff, although it also highlighted the need for continuous training and mentoring to ensure consistent supervision quality.

The project profile from 2022 to 2024 further provided important context for understanding the supervision challenges identified in the study. During this period, the Construction Division implemented a total of 447 projects across various infrastructure programs. The Convergence and Special Support Program recorded the highest number of projects, followed by the Network Development and Flood Management Programs. A considerable number of these projects had costs exceeding ₱100 million, indicating large-scale and technically complex undertakings. The wide range of project sizes and types meant that supervisors were often required to handle multiple projects simultaneously, each with varying technical demands, site conditions, and administrative requirements. This situation placed additional pressure on supervision personnel and helped explain some of the limitations identified in the study.

4.2 Existing Policies, Procedures and Practices in Project Site Supervision

The results showed that the existing policies, practices, and procedures for project site supervision in DPWH–Regional Office V were generally well implemented and consistently observed across project sites. Overall, supervision practices were aligned with established DPWH guidelines, particularly in terms of quality assurance, safety enforcement, and ethical compliance.

Among the indicators, the strict enforcement of quality, safety, and ethical standards obtained the highest rating (Mean = 4.44; RII = 0.89). This indicated that supervision activities were largely guided by existing departmental policies and that compliance with prescribed standards was consistently observed during project implementation. The competence of site supervisors also received a high rating (Mean = 4.41; RII = 0.88), suggesting that personnel assigned to supervision duties were generally qualified and capable of implementing policies and procedures on site. Likewise, the availability of monitoring tools, equipment, and logistical support (Mean = 4.38; RII = 0.88) showed that procedural requirements for effective supervision were supported by adequate operational resources.

However, the adequacy of supervision personnel obtained the lowest rating (Mean = 4.03; RII = 0.81). While this still reflected a generally positive assessment, it suggested that the implementation of staffing-related procedures may not have fully kept pace with the growing number and complexity of infrastructure projects. This implied that existing deployment policies may have resulted in supervisors handling multiple projects simultaneously, which could have affected the depth and frequency of monitoring activities.

These findings were consistent with earlier studies on public infrastructure supervision, which emphasized that effective implementation of policies and procedures depended not only on written guidelines but also on adequate human resource allocation and field capacity. Previous research similarly noted that while agencies often had comprehensive supervision policies in place, challenges commonly arose in actual implementation due to workload distribution and staffing limitations. This supported the observation that procedural compliance alone was not sufficient unless matched with sufficient manpower support.

In summary, the study found that DPWH–Regional Office V had well-established supervision policies and practices that were generally implemented as intended. However, the results also highlighted that procedural effectiveness was constrained by personnel adequacy, suggesting a gap between policy design and field-level implementation that needed to be addressed to further strengthen project site supervision.

4.3 Factors Affecting Project Site Supervision

The study revealed that project site supervision effectiveness in DPWH–Regional Office V was influenced by both external and internal factors, with external constraints having a more dominant impact. Among these, unfavorable weather conditions emerged as the most significant factor (Mean = 4.30; RII = 0.86). This finding was consistent with earlier studies on infrastructure project management, which emphasized that weather disruptions commonly affected construction productivity and supervision activities, particularly in developing countries where projects were often exposed to seasonal climate variations. Similar studies had noted that heavy rainfall and extreme weather conditions reduced site accessibility and limited the frequency of inspection visits, thereby affecting overall monitoring effectiveness.

Road Right-of-Way (ROW) issues (Mean = 4.28; RII = 0.86) were also identified as a major constraint. This result aligned with previous research which found that ROW acquisition problems were among the most persistent causes of project delays in public infrastructure development. Past studies explained that unresolved legal, administrative, and stakeholder-related issues often delayed site turnover, which in turn restricted the ability of engineers and supervisors to fully implement monitoring procedures. The present findings reflected the same situation, where access limitations directly hindered regular inspection and timely corrective actions.

Other external factors such as peace and order conditions, site inaccessibility, and physical obstructions were also noted to affect supervision. These findings were similar to earlier studies which highlighted that geographical and security-related challenges significantly reduced field mobility of supervisors, particularly in rural and remote project locations. The difficulty in reaching sites had been repeatedly identified in literature as a practical limitation that weakened the continuity and consistency of supervision activities.

On the internal side, delays in the provision of approved plans and drawings (Mean = 4.25; RII = 0.85) were identified as a key concern. This result was consistent with prior studies which emphasized that weak coordination among planning, design, and implementation units often resulted in incomplete or delayed documentation. Such delays had been found to affect project monitoring since supervisors relied heavily on approved plans as reference for compliance checking. Similarly, frequent revisions of plans during construction (Mean = 4.12; RII = 0.82) mirrored findings in earlier research which indicated that design changes during implementation often disrupted workflow and required continuous adjustments in supervision strategies.

Delays in the release of progress billings (Mean = 4.05; RII = 0.81), although ranked lowest among the internal factors, were also consistent with past studies that linked financial processing delays to contractor slowdowns and reduced work continuity. Previous literature had explained that when payment processes were delayed, contractor motivation and resource mobilization were affected, which indirectly complicated supervision efforts.

Overall, the findings of the present study were consistent with established literature on infrastructure project supervision. The recurrence of similar issues across studies suggested that these challenges were systemic rather than isolated. The dominance of external factors, particularly weather conditions and ROW issues, indicated that supervision effectiveness was often constrained by environmental and institutional conditions beyond the control of site engineers. Meanwhile, internal issues such as documentation delays and plan revisions reflected coordination gaps within the project implementation structure. These conditions collectively explained why supervision effectiveness varied in practice despite the presence of established policies and procedures

4.4 Recommending Measures (SWOT Analysis

The SWOT analysis summarized that project site supervision in DPWH–Regional Office V was generally supported by strong internal strengths but was constrained by both internal weaknesses and external threats. It also identified several opportunities for improvement that could enhance overall supervision performance.

The strengths of the supervision system were reflected in the presence of established practices, qualified personnel, and consistent enforcement of quality, safety, and ethical standards. These findings were consistent with earlier studies on public infrastructure supervision, which similarly reported that government engineering offices generally possessed adequate technical capacity and clear policy frameworks. Prior research had emphasized that when personnel were properly trained and supervision guidelines were clearly defined, compliance with standards tended to be high. This helped explain why supervision in the study area remained generally effective despite existing operational challenges.

However, weaknesses were observed in internal administrative processes, particularly in documentation, coordination, and staffing adequacy. These results aligned with previous studies that highlighted persistent administrative bottlenecks in public construction management. Earlier findings had shown that delays in the preparation and release of project documents often disrupted field implementation, as supervisors relied heavily on complete and timely information to properly monitor work activities. The same pattern was evident in this study, where late issuance of approved plans, revisions during construction, and delays in progress billings affected the efficiency of supervision. These issues suggested that while technical capability was present, procedural efficiency remained a limiting factor.

The opportunities identified, such as improving inter-agency coordination, streamlining permitting processes, and ensuring timely availability of materials, were also supported by related literature. Previous studies noted that stronger coordination between implementing agencies and regulatory offices significantly reduced project delays and improved field supervision effectiveness. Similarly, better supply chain and procurement planning had been linked to smoother construction progress, which in turn allowed supervisors to focus more on quality monitoring rather than resolving logistical interruptions.

On the other hand, external threats such as unfavorable weather conditions, ROW issues, site access limitations, and security concerns were consistent with findings from earlier research on infrastructure projects in developing and geographically diverse regions. These studies repeatedly identified environmental and site-related constraints as major factors that limited the mobility and effectiveness of field supervision teams. The results of this study reflected the same situation, where external conditions directly affected the frequency and quality of site inspections.

The occurrence of these findings could be explained by the nature of infrastructure project implementation in the public sector. Supervision effectiveness was not determined solely by technical competence or established policies but was also heavily influenced by administrative efficiency and external operating conditions. While DPWH–Regional Office V demonstrated strong compliance with supervision standards, inefficiencies in documentation flow and coordination processes created delays that affected field-level implementation. At the same time, uncontrollable external factors such as weather and ROW acquisition continued to disrupt planned schedules, limiting the ability of supervisors to maintain consistent oversight.

Overall, the SWOT analysis suggested that similar patterns observed in previous studies were still present in the current context. Strengthening internal processes and improving coordination mechanisms, while simultaneously preparing for external disruptions, remained essential in enhancing project site supervision effectiveness.

5. Conclusion and Recommendations

The study found that project site supervision in DPWH–Regional Office V had been generally effective in ensuring compliance with quality standards, safety requirements, and established construction procedures. This had been made possible by the presence of competent engineers and inspectors, along with the availability of basic monitoring tools that supported regular site inspection and oversight. However, the adequacy of supervision personnel had remained a clear limitation. The number of assigned engineers and inspectors had not been sufficient to fully cover the volume and complexity of ongoing projects, particularly large-scale and technically demanding works. As a result, some projects had experienced reduced inspection frequency and limited on-site monitoring depth.

The study also confirmed that supervision effectiveness had been shaped by both external and internal factors. Among external constraints, unfavorable weather conditions had frequently disrupted inspection schedules and limited site accessibility, while unresolved right-of-way issues delayed project turnover and hindered continuous supervision. In several cases, security concerns and difficult terrain further restricted the movement of supervisors, especially in remote project locations. These conditions had directly affected the ability of personnel to conduct timely and consistent monitoring.

On the internal side, administrative and coordination issues had also affected supervision performance. Delays in the approval and release of plans and technical documents had slowed project implementation and reduced the responsiveness of field supervision. Frequent design revisions during construction had required repeated adjustments in implementation, which had disrupted planned monitoring activities. Likewise, delays in progress billing processing had affected contractor cash flow, which had resulted in slower work progress and additional monitoring complications for supervisors.

Based on these findings, the study identified specific and practical actions that were needed to improve supervision performance. First, manpower allocation had to be adjusted by assigning additional inspectors to large and complex projects, and by clearly defining maximum project load per supervisor to avoid overextension. Second, internal processing time for plans, revisions, and approvals had to be strictly reduced by enforcing fixed turnaround periods at the design and administrative levels, so that site activities would not be delayed by documentation bottlenecks. Third, coordination procedures with LGUs and concerned agencies had to be strengthened through early right-of-way validation and scheduled inter-agency coordination meetings before project implementation, rather than during construction. Fourth, the use of standardized digital monitoring tools and centralized reporting systems had to be strengthened to reduce delays in reporting and improve real-time tracking of project progress.

Overall, the study concluded that while project site supervision in DPWH–Regional Office V had been operationally functional, its effectiveness had been constrained by staffing limitations, administrative delays, and recurring external disruptions. Addressing these issues through targeted manpower augmentation, stricter process timelines, and stronger inter-agency coordination would have significantly improved the consistency of supervision and the timely delivery of infrastructure projects.

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