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Project Schedule Performance of IFI Financed Public Projects: Evidence from Uzbekistan

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Abstract
Purpose: This study aims to assess the schedule performance of public-sector investment projects financed by major international financial institutions (IFIs) in Uzbekistan, focusing on the differences in implementation timelines based on funding institutions, project size, and sectoral characteristics.
Research methodology: Using publicly available data on IFI-financed projects approved between 2010 and 2024, this study evaluates project performance through planned versus actual implementation duration, time overruns, and formal project extensions. Descriptive statistics, non-parametric tests, and logistic regression models were employed to analyze the probability of schedule extensions while controlling for project size, sector, and approval year.
Results: The analysis revealed significant variations in schedule performance across IFIs, with larger infrastructure projects having a higher likelihood of delays.
Conclusions The findings suggest that institutional governance and project monitoring play crucial roles in the management of project time.
Limitations: The study relies on publicly available data, which may not capture all project variables, and is limited to projects financed by specific IFIs.
Contributions: This research contributes to the understanding of project schedule performance in transition economies and highlights the value of using open, transparent data for comparative performance studies, providing policy insights for improving schedule risk management in similar contexts.

Keywords: *International Financial Institutions, Project Schedule Performance, Public-Sector Investment Projects, Teaching Hospita Time Overruns, Uzbekistan Open Data*

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1. Introduction

International financial institutions (IFIs), such as the World Bank, Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), and Islamic Development Bank (IsDB), have been instrumental in financing public investment projects in Uzbekistan, particularly in the infrastructure and social sectors. Over the past decade, concessional lending has significantly increased, driven by the country's urgent development needs and limited domestic financing capacity (Sherzod, 2025). These IFIs have provided substantial support to Uzbekistan to address infrastructure deficits, improve social services, and stimulate economic growth. However, despite financial backing, the implementation of these

projects has faced persistent challenges, particularly in terms of schedule overruns. Delays in project execution not only extend timelines but also escalate transaction costs and undermine the overall effectiveness of development efforts, leading to budget overruns and hindering the realization of expected outcomes (Abdelalim, Salem, Salem, Al-Adwani, & Tantawy, 2024).

Prior evaluations of IFI-financed projects have consistently identified bottlenecks, such as procurement delays, inefficient contract management, and limited institutional capacity, especially in transition economies such as Uzbekistan. These issues have made it difficult to meet initial project timelines, which, in turn, affects the sustainable development outcomes these projects aim to achieve. Understanding the factors that contribute to delays and time overruns is critical for improving project execution and ensuring that public investments achieve their intended social and economic benefits on time and within budget (Orya & Calahorra-Jimenez, 2025).

The existing literature on development project performance reveals three key limitations. First, most studies focus on individual IFIs, particularly the World Bank, and do not systematically compare multiple IFIs. This limits our understanding of how different IFIs manage project timelines and their associated challenges. Second, much research relies on proprietary or confidential data, restricting transparency and making replication difficult. Finally, openly accessible IFI project databases are underutilized, particularly for comparative studies within a single country. This gap in the literature prevents researchers from evaluating how different IFIs perform within specific national contexts, such as Uzbekistan (Rodríguez Estévez & Arce Ruíz, 2024).

This study aims to address these gaps by assessing and comparing project schedule performance across major IFIs operating in Uzbekistan, using exclusively publicly available project-level data (Yi & Nie, 2024). This study seeks to answer three key questions.

1. Do IFI-financed projects in Uzbekistan differ in their scheduled performance?
2. Are larger projects more likely to experience time extension?
3. Do infrastructure projects exhibit longer implementation delays than social sector projects?

By focusing on IFI-financed projects in Uzbekistan, this study provides a transparent and comparative analysis of how different IFIs manage project timelines and the specific factors that contribute to schedule delays (Ashton et al., 2023). This research contributes in three key ways.

1. Empirically, it provides the first open-data-based comparative analysis of IFI project-schedule performance in Uzbekistan.
2. Methodologically, it offers a transparent and replicable approach to analyzing project time performance using IFI databases and publicly available data.
3. Practically, it provides actionable insights for improving schedule risk management in public-sector projects, offering valuable recommendations for policymakers and project managers in Uzbekistan and similar transition economies.

2. Literature Review and Hypothesis/es Development

2.1 Project Schedule Performance in Public-Sector Projects

Project schedule performance is commonly defined as the alignment between the planned and actual implementation durations, with deviations reflecting schedule variance. Public sector and development projects frequently experience time overruns due to institutional complexity, rigid procurement rules, and coordination challenges (Flyvbjerg, 2014). Empirical studies of IFI-financed projects document the widespread use of schedule extensions, with implementation periods often exceeding original plans by significant margins (Abdelalim et al., 2024). Infrastructure projects are particularly prone to delays because of their technical complexity, land acquisition requirements, and multi-contract procurement, whereas social sector projects tend to exhibit shorter and more predictable schedules (Flyvbjerg, 2017).

2.2 IFIs and Project Implementation Outcomes

Project schedule performance is commonly defined as the alignment between the planned and actual implementation durations, with deviations reflecting schedule variance (Ottaviani, De Marco, Narbaev, & Rebuglio, 2024). In public-sector and development projects, time overruns frequently occur and pose significant risks to project success. Delays not only extend project timelines but also increase costs and reduce the overall efficiency of resource utilization. Schedule performance is often considered a critical indicator of a project's effectiveness, as it directly impacts the timely delivery of services and infrastructure meant to benefit the public.

Public sector projects, particularly those funded by international financial institutions (IFIs), face unique challenges that contribute to delays. Institutional complexity, rigid procurement rules, and coordination difficulties between multiple stakeholders are often cited as key factors leading to schedule overruns (Flyvbjerg 2014). The public sector is typically subject to more stringent regulatory oversight, slower decision-making processes, and more complex stakeholder engagement requirements than private-sector projects. These factors contribute to delays, especially when multiple agencies, contractors, and funding bodies are involved in the project execution.

Empirical studies of IFI-financed projects consistently document the widespread use of schedule extensions. These studies highlight that the implementation periods of many development projects often exceed the original plans by significant margins (Precious 2025). For example, projects funded by IFIs, such as the World Bank and ADB, often face delays due to procurement challenges, changes in project scope, and unforeseen risks that emerge during the implementation phase. These delays not only extend timelines but also lead to substantial increases in project costs, ultimately affecting the long-term viability and sustainability of the project.

Infrastructure projects are particularly highly susceptible to delays. The technical complexity of these projects, combined with challenges such as land acquisition, environmental clearances, and multi-contract procurement processes, often leads to unforeseen delays in project completion. Infrastructure projects typically involve large-scale construction efforts, complicated logistical coordination, and a wide range of stakeholders, making it difficult to adhere to the original project timeline. For instance, the need for extensive environmental assessments or delays in securing land rights can push project timelines back by months or even years, resulting in significant schedule variances (Orya & Calahorra-Jimenez, 2025).

In contrast, social-sector projects tend to exhibit shorter and more predictable schedules. These projects, which often include social services, health programs, or educational facilities, usually face fewer logistical challenges than infrastructure projects. Social sector projects tend to have more straightforward objectives and fewer technical complexities, making them more manageable in terms of timelines and coordination. However, these projects are not immune to delays, particularly when political, institutional, or financial issues arise during their execution phase. Despite this, social-sector projects often experience more predictable schedules than their infrastructure counterparts (Chasanah, Gunawan, & Baroudi, 2024). Additionally, public-sector projects are heavily influenced by external factors, such as political cycles, changes in government priorities, and economic conditions.

Shifts in political leadership can lead to changes in project scope, funding availability, or even project cancellation, which can further contribute to schedule delays. Economic factors, such as inflation or currency fluctuations, can also affect the cost of materials and labor, potentially extending project timelines. These external pressures make it even more challenging to adhere to the original project schedule (Mekonen et al., 2025). The combination of internal project complexities and external challenges makes schedule performance in public-sector projects a highly variable and often unpredictable aspect of project management. Addressing these issues requires not only efficient project management practices but also a

deep understanding of the institutional and environmental factors that influence the timely execution of public sector investments.

2.3 Theoretical Foundations

2.3.1 Project Time Management Theory

Project Time Management Theory conceptualizes schedule performance as the outcome of effective planning, monitoring, and control processes. These processes are central to ensuring that projects adhere to their intended timelines, with careful scheduling, proactive risk management, and timely decision-making all contributing to minimizing delays. In the context of IFI-financed projects, these processes are embedded within supervision missions, progress reporting, and formal project restructuring mechanisms established by IFIs (Solís-Carcaño, Corona-Suárez, & García-Ibarra, 2015). Supervision missions allow for regular monitoring and assessment of project progress, while progress reporting provides both donors and implementing agencies with updated information on whether the project is on track to meet its original goals.

Additionally, formal restructuring mechanisms, which are often invoked when delays or scope changes occur, enable IFIs to renegotiate timelines and reallocate resources as required. These mechanisms provide flexibility while ensuring that projects remain aligned with their original objectives. However, even with these processes in place, the success of time management in IFI-financed projects is often influenced by the complexity of the project, the institutional environment, and the ability to mitigate unforeseen risks (Sharuddin, Azman, Abdul Samad, & Mohd Rodzi, 2024).

Effective project time management requires not only tools and processes but also the engagement of all project stakeholders in adhering to timelines. A key aspect of this theory is the integration of time management with other project management knowledge areas, such as scope and cost management. This integrated approach enables project managers to balance time constraints with resource availability and project scope, ensuring that any delays are mitigated as much as possible (Kilani et al., 2024).

2.3.2 Principal–Agent Theory

Principal-agent theory frames IFI-funded projects as contractual relationships between donors (principals) and borrowing governments or implementing agencies (agents). In this framework, the donor (principal) provides financial resources and oversight, whereas the recipient government or implementing agency (agent) is responsible for carrying out the project. One of the key concepts in the principal–Agent Theory is information asymmetry, which occurs when the principal and agent have access to different levels of information. This imbalance can lead to misaligned incentives and a lack of accountability, ultimately contributing to implementation delays and poor project outcomes (Ivić & Cerić, 2023).

Information asymmetry can manifest in various ways in IFI-financed projects. For example, the implementing agency may have more detailed knowledge of the project's progress and challenges than the donor agency, which may result in underreporting or misrepresentation of project delays or issues. Additionally, the incentives of the donor and recipient may not always align, leading to situations in which the implementing agency prioritizes short-term objectives (e.g., disbursing funds quickly) over long-term goals, such as ensuring that the project is completed on schedule. This misalignment can be exacerbated when monitoring mechanisms are weak or when there is insufficient oversight of project implementation (Amin, Malik, & Scheepers, 2024). Therefore, the success of IFI-financed projects depends on the establishment of clear communication channels, effective monitoring mechanisms, and aligned incentives between donors and the implementing agencies.

Principal-agent theory also highlights the importance of governance structures in mitigating the challenges of information asymmetry. Proper contractual arrangements, transparent reporting mechanisms, and regular audits are essential to ensure that both parties fulfill their roles and minimize project delays. When

monitoring is strong and both parties have aligned objectives, the risk of schedule overruns is reduced, and projects are more likely to meet their planned timelines.

2.4 Hypotheses

Based on the literature and theoretical framework, the following hypotheses are proposed.

- H_1: Project schedule performance differs significantly across IFIs. This hypothesis suggests that different IFIs may have varying project schedule performances owing to differences in institutional practices and oversight mechanisms.
- H_2: Larger projects have a higher probability of schedule extensions. Larger projects are more likely to experience schedule delays because of their complexity and scale.
- H_3: Infrastructure projects experience longer schedule overruns than social-sector projects do. Infrastructure projects are hypothesized to face longer delays than social-sector projects because of technical complexities and logistical challenges.

3. Methodology

3.1 Data Sources and Sample

This study relies on publicly available project-level data from major international financial institutions (IFIs), including the World Bank, Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), and Islamic Development Bank (IsDB). The sample consists of IFI-financed investment projects in Uzbekistan that were approved between 2010 and 2024. Projects were selected based on the availability of key data, such as identifiable approval and completion dates of the projects. Projects that only involved technical assistance, policy-based lending, or those with incomplete or missing schedule data were excluded from the sample. This approach is consistent with established best practices in project performance research, as outlined by the World Bank Independent Evaluation Group, ensuring that the analysis focuses on projects with complete and reliable schedule information (Zhao et al., 2019).

3.2 Variables and Measurement

Schedule performance is assessed using two dependent variables: time overrun and extension dummy. Time overrun is calculated as the difference between the actual and planned project durations, measured in months. The extension dummy indicates whether a project's completion date was extended. The primary independent variable is IFI affiliation, represented by institutional dummy variables that capture the specific funding institution (World Bank, ADB, EBRD, or IsDB) associated with each project.

The control variables include project size, measured as the logarithm of the financing amount, to account for the potential influence of project scale on schedule performance. The sector variable distinguishes between infrastructure and social sector projects, as these sectors may have different inherent challenges that affect timelines. Finally, the approval year is included as a control to account for any temporal effects, such as changes in institutional or economic conditions that may influence project performance (Bustami & Saifrizal, 2025).

3.3 Analytical Methods

The analysis utilized a combination of descriptive statistics and non-parametric mean comparison tests to assess differences in schedule performance across the four IFIs. Specifically, Kruskal–Wallis and Mann–Whitney tests are employed to compare the schedule performance of projects financed by different institutions. These tests are appropriate given the non-normal distribution of the schedule data and the need to assess differences between multiple groups (Pambudi, 2025).

In addition, logistic regression models were used to estimate the probability of schedule extensions. The models treat the occurrence of a schedule extension as a binary outcome, where the dependent variable is a dummy variable indicating whether the project's completion date was formally extended. The independent variables in the logistic regression include institutional affiliation, project size (log of financing amount),

and sector (infrastructure vs. social). This approach allows for an in-depth analysis of the factors that influence the likelihood of project delays and extensions while controlling for key project characteristics.

3.4 Data Limitations

Exclusive reliance on open-access data enhances the transparency and replicability of the study, allowing for a clear and verifiable analysis. However, this approach also presents certain limitations, primarily because of variations in the level of detail reported by different IFIs. While some IFIs provide comprehensive project-level data, others may report fewer details, particularly regarding project timelines, which could introduce inconsistencies across datasets (Ugochukwu & Phillips, 2024).

Additionally, the analysis focused solely on schedule performance, specifically examining time overruns and schedule extensions. Owing to limitations in the available data, this study did not incorporate other key performance indicators, such as cost or scope performance. This restriction is due to the unavailability of consistent and reliable data on project costs or scope changes across different IFIs. Consequently, the analysis does not capture the full spectrum of project performance but instead focuses on the critical aspect of schedule management.

4. Results and Discussions

4.1 Descriptive Analysis

4.1.1 Distribution of Project Durations and Extensions

The descriptive analysis reveals significant variations in project implementation durations across IFI-financed public-sector projects in Uzbekistan. The data show a notable discrepancy between the planned project durations and actual implementation periods, with many projects experiencing delays beyond their originally approved completion dates. This pattern aligns with earlier evaluations of development projects, which consistently reported a divergence between planned and actual schedules in public investment programs (Sharuddin et al., 2024). The distribution of time overruns is right-skewed, indicating that while some projects are completed relatively close to their planned timelines, a substantial number experience considerable delays.

This skewness reflects the reality that most projects face at least some level of delay, but a subset of projects is subject to more extreme time overrun. The presence of formal project extensions across multiple projects further underscores that schedule revisions are not isolated occurrences but rather a common feature of IFI-financed project implementation. These findings suggest that the issues leading to schedule delays are systemic and not limited to a few outlier projects. This distribution pattern is consistent with prior research on multilateral development banks, which shows that project extensions are a recurrent feature in their investment lending portfolios (Melaku Belay et al., 2021). The high frequency of formal extensions in the data suggests that delays in IFI-financed projects are not only common but also anticipated to some extent, indicating the need for better schedule risk management and planning strategies.

4.1.2 Schedule Outcomes by IFI and Sector

When disaggregated by funding institution, descriptive statistics reveal notable heterogeneity in schedule outcomes across the IFIs. Projects financed by different institutions exhibit distinct distributions of planned and actual durations, reflecting variations in project design, supervision practices and implementation arrangements. Although all IFIs apply structured project cycles, differences in procurement procedures, monitoring intensity, and borrower engagement appear to be associated with divergent schedule outcomes (Asiedu and Adaku, 2020).

Sectoral comparisons further indicate that infrastructure projects, particularly those in transport and energy, tend to have longer implementation periods and higher incidence of extensions than social-sector projects such as health and education. This observation aligns with the broader project management literature, which

attributes longer schedules in infrastructure projects to higher technical complexity, land acquisition challenges, and multi-contract procurement structures (Flyvbjerg 2014).

4.2 Comparative Schedule Performance

4.2.1 Differences in Time Overruns Across IFIs

Non-parametric mean comparison tests reveal statistically significant differences in time overruns across the IFIs. Kruskal Walli's test rejects the null hypothesis of identical distributions of schedule overruns across institutions, indicating that the type of IFI affiliation is associated with distinct project schedule outcomes. This suggests that the performance in terms of project timelines is not uniform across institutions, even within the same national context.

Pairwise comparisons further reinforce this conclusion, showing that certain IFIs exhibit systematically shorter implementation delays than others. This variation indicates that the differences in schedule performance are not random but are likely driven by institutional factors. For example, IFIs, such as the World Bank and ADB, may have different strategies for monitoring project progress, enforcing procurement rules, and ensuring flexibility in project restructuring. These factors can lead to variations in project management and delivery schedules, even within the same country.

These findings highlight the importance of institutional governance in shaping project timelines. While the national context and external factors certainly play a role, the differences in how IFIs supervise and manage projects suggest that institutional structures, such as the frequency of supervision missions, enforcement of procurement policies, and adaptability of project timelines, are crucial determinants of project schedule performance. Such differences in institutional practices are in line with recent research that emphasizes the importance of governance in the success of development projects (Liu, Mao, Zhang, Xu, & Zhu, 2025a). These results suggest that enhancing institutional frameworks and governance structures can significantly improve project time management and reduce project delays.

4.2.2 Statistical Significance of Observed Differences

The statistical significance of the observed differences in project schedule performance across IFIs remains robust, even when alternative non-parametric specifications are applied. Given the non-normal distribution of project duration data, rank-based tests, such as the Kruskal–Wallis and pairwise comparisons, are particularly suitable for data analysis. These tests are less sensitive to the presence of outliers, which often skew the results of traditional parametric tests. The validity of the findings is strengthened by using these methods, as they ensure that the differences observed are not merely the result of extreme data points (Gómez-Cabrera, Cortés, Rojas, Sánchez, & Torres, 2025). The continued statistical significance across various test specifications reinforces the conclusion that project schedule performance is not uniform across all IFIs.

The evidence indicates that the differences in schedule overruns are meaningful and not attributable to random variation. This finding supports the argument that institutional affiliation, along with the specific governance structures and project management practices of each IFI, plays a significant role in determining how effectively projects meet their planned timelines. Overall, these results underscore the importance of considering institutional factors when evaluating the performance of projects. The variation in time overruns observed across different IFIs highlights the need for tailored strategies that address the unique challenges and strengths of each institution in managing its project timelines. These findings contribute to the growing body of literature on the role of institutional governance in shaping the outcomes of development projects.

4.3 Regression Results

4.3.1 Determinants of Schedule Extensions

Logistic regression analysis was employed to examine the probability of formal schedule extensions, which serve as key indicators of delays in project timelines. The results reveal that IFI affiliation is a statistically significant predictor of the likelihood of a schedule extension, even after controlling for other factors such as project size, sector, and approval year. This finding reinforces the conclusions drawn from the descriptive and comparative analyses, suggesting that the differences observed in project schedule performance are not simply due to external or contextual factors but are heavily influenced by institutional characteristics (Gómez-Cabrera et al., 2025).

The analysis indicates that projects financed by certain IFIs are more likely to experience formal extensions, pointing to institutional variations in governance and project-management practices. These results highlight the importance of factors such as the frequency and rigor of project supervision, enforcement of procurement rules, and flexibility of project timelines in influencing the likelihood of delays. Such institutional differences in governance and monitoring frameworks appear to play a significant role in shaping project-schedule outcomes. By demonstrating that institutional affiliation directly affects the probability of schedule extensions, this analysis contributes to understanding how IFIs' internal processes and management structures can impact the timely completion of public sector projects. The findings support the notion that improving institutional practices could help reduce delays and enhance the overall efficiency of IFI-financed projects (Omilovna 2024).

4.3.2 Effects of Project Size and Sector

Project size, measured as the logarithm of the total financing amount, is positively associated with the likelihood of schedule extensions. Larger projects are more prone to implementation delays, which is consistent with complexity theory and prior empirical studies that link project scale to increased coordination challenges and higher risk exposure (Park, 2021) Flyvbjerg, 2017). As project size increases, the complexity of managing multiple stakeholders, contractors, and project phases grows, leading to a higher likelihood of delays. Larger projects often involve more intricate logistics, extensive planning, and the need for multiple procurement contracts, which can create more opportunities for delays during implementation.

Additionally, sectoral effects were apparent in the analysis. Infrastructure projects have a higher probability of experiencing schedule extensions than social-sector projects, even after controlling for project size, sector, and approval year. This finding is in line with a substantial body of research in development finance and construction management literature, which shows that infrastructure projects tend to have longer implementation periods due to various factors, including technical complexity, regulatory requirements, and challenges related to land acquisition (Park, 2021). Infrastructure projects often require more extensive environmental and social impact assessments, complex construction processes, and coordination with local authorities for land and permits than other projects. These factors contribute to longer delays than social sector projects, which typically involve fewer logistical and technical hurdles. Overall, these findings underscore the importance of considering both project size and sector when analyzing project-schedule performance. The results suggest that larger infrastructure projects require more robust management strategies to mitigate the higher likelihood of delays (Antoniou & Tsavlidou, 2025).

4.4. Discussion

4.1.1 Interpretation of Findings

4.1.1.1 Institutional Governance and Monitoring Implications

The empirical results indicate that project schedule performance in Uzbekistan differs systematically across international financial institutions (IFIs). This finding highlights the significant role of institutional governance arrangements in shaping project timelines. Key factors, such as supervision intensity, procurement oversight, and flexibility in project restructuring, are crucial in determining whether projects

meet their planned schedules. While all IFIs operate within formal project cycles, the extent to which these mechanisms lead to timely implementation varies significantly across institutions (Figueroa et al., 2025; forthcoming).

Institutions with more standardized supervision and reporting requirements seem to be better positioned to identify and address implementation bottlenecks early in the project's lifecycle. This proactive approach helps prevent prolonged delays and ensures that corrective actions are taken before issues escalate. This interpretation aligns with the findings of the World Bank's Independent Evaluation Group (IEG), which has emphasized the importance of early problem detection and active supervision as critical factors in determining project performance in World Bank-financed operations. In contrast, institutions that rely more heavily on borrower-driven reporting and less frequent supervision may experience longer delays in implementing formal corrective measures. When monitoring is less rigorous or more reactive, issues related to procurement, land acquisition, and other logistical challenges can persist for longer, exacerbating schedule overruns (Figueroa et al., 2025).

These findings provide empirical support for the argument that the design of institutional frameworks is a crucial determinant of schedule outcomes. Even when projects are implemented within the same national and regulatory context, the way IFIs manage governance, supervision, and monitoring processes significantly influences their ability to meet the scheduled timelines. Thus, strengthening institutional governance mechanisms, particularly in project oversight and reporting, can help improve the efficiency and timeliness of IFI-financed projects (Royan & Assa, 2025).

4.1.1.2 Complexity and Scale Effects

The positive correlation between project size and schedule extension highlights how complexity and scale influence project outcomes. Larger projects involve multiple contracts, extended procurement cycles, and coordination among several stakeholders, thereby increasing the risk of delays. This aligns with complexity theory and prior research, which show that the scale of a project magnifies coordination risks and schedule uncertainties (Brookes & Locatelli, 2015; Flyvbjerg, 2014). Similarly, the higher incidence of schedule overruns in infrastructure projects reflects sector-specific challenges in the construction industry. Infrastructure projects often require land acquisition, environmental approvals, and complex technical designs, all of which increase the vulnerability to delays. These sectoral effects are well documented in the development finance literature and are confirmed in this study in the context of Uzbekistan (Ika & Donnelly, 2017).

4.1.2 Comparison with Prior Studies

The results of this study align with the existing research on IFI-financed project performance. Previous studies on World Bank projects have documented frequent schedule extensions, with project size and sector being key factors (Ikaand&D. Donnelly, 2017). Similarly, ADB evaluations highlight longer implementation periods for transport and energy projects than for social sector projects (Wang & Levinson, 2023). This study extends prior work by explicitly comparing multiple IFIs within a single-country context and isolating institutional effects from country-level governance factors. Unlike cross-country studies that blend institutional and contextual influences, the findings demonstrate that institutional affiliation significantly impacts schedule performance, even when the national conditions are held constant.

4.1.3 Implications for Theory

From a theoretical perspective, the findings contribute to Project Time Management Theory and Principal–Agent Theory. First, the observed divergence between planned and actual schedules across IFIs supports the idea that schedule performance is not just a technical issue but is also influenced by institutional and governance factors. This extends traditional time management frameworks by incorporating organizational and contractual dynamics, thus providing a more comprehensive view of project performance(Liu, Mao, Zhang, Xu, & Zhu, 2025b).

Second, the results lend empirical support to principal-agent theory in the context of IFI-funded public projects. Differences in monitoring intensity and reporting requirements highlight the varying approaches to addressing information asymmetry between donors and borrowers. Stronger monitoring mechanisms are associated with more controlled schedule deviations, suggesting better alignment of incentives between principals and agents (Ika and Donnelly 2017). This study emphasizes the value of combining project management and institutional economics perspectives to analyze development project performance.

4.1.4 Policy and Managerial Implications

4.1.4.1 Lessons for implementing agencies in Uzbekistan

The findings of this study provide valuable lessons for public sector implementing agencies in Uzbekistan. First, they underscore the importance of realistic scheduling, early risk identification, and proactive contract management, particularly for large infrastructure projects. Ensuring that project timelines are based on realistic assessments of the scope and potential challenges can help to reduce delays. Additionally, identifying potential risks early in the process allows for the development of mitigation strategies, helping avoid unnecessary schedule extensions (Kenjabaev & Sadriddinov, 2025). Strengthening the internal capacity for procurement planning and schedule control is another critical takeaway.

By improving procurement processes and closely monitoring project timelines, agencies can minimize the need for formal extensions, thereby making project delivery more predictable and efficient. A strong internal capacity for managing schedules and procurement will allow agencies to handle unforeseen issues more effectively, thereby reducing reliance on reactive solutions such as schedule extensions. Furthermore, adopting differentiated management approaches based on project size and complexity can significantly help mitigate schedule risks. Smaller social sector projects, which typically involve fewer complexities, may benefit from streamlined procedures and simplified management processes (Keleş et al., 2025). In contrast, larger infrastructure projects, which often involve more stakeholders and intricate logistics, require enhanced coordination and dedicated frameworks for managing scheduling risks. Tailoring the approach to fit the specific needs of each project type can improve the overall project performance and reduce delays.

4.1.4.2 Implications for IFI Project Design and Supervision

The findings of this study offer valuable insights for the design and supervision of IFI-funded projects. First, they suggest that IFIs should place greater emphasis on front-end project preparation, particularly by making more conservative duration estimates and conducting thorough early stage risk assessments. By anticipating potential challenges and accounting for unforeseen risks, IFIs can improve the accuracy of project timelines and reduce the likelihood of schedule overrun. This proactive approach to planning is essential for ensuring that projects are delivered on time and within the budget (Weng, Yuan, Li, & Li, 2024). In addition, enhanced supervision during the initial implementation phase is recommended to minimize delays and the need for repeated schedule extension.

Early and consistent oversight can help identify emerging issues before they escalate into significant ones. This is particularly important in the early stages of implementation, when monitoring can provide critical insights into potential risks and enable timely corrective action. A strong focus on initial supervision can prevent projects from veering off course and reduce reliance on formal extensions as a corrective measure (Flyvbjerg, 2014). These implications are especially relevant for IFIs operating in fiscally constrained environments, where the efficient use of limited resources is paramount. By strengthening project preparation and supervision processes, IFIs can maximize development impact, ensuring that projects are completed on time and contribute to long-term, sustainable outcomes (Koirala & Shahi, 2024).

5. Conclusion

5.1. Conclusion

This study demonstrates that project schedule performance among IFI-financed public-sector projects in Uzbekistan varies significantly across institutions, projects, and sectors. Larger projects and infrastructure investments are more likely to experience schedule extension. Institutional affiliation plays a crucial role in determining project timelines, highlighting the importance of governance and oversight practices in shaping the successful completion of IFI-financed projects. The findings emphasize the need for more robust planning, early risk identification, and proactive management to ensure that projects are delivered on time and within their budgets.

5.2. Research Limitations

This study has several limitations. First, the analysis relies exclusively on publicly available data, which can vary in terms of reporting details across different IFIs. This variation may affect the consistency and completeness of the dataset, potentially limiting the robustness of our findings. Second, this study focuses solely on schedule outcomes and does not incorporate other critical project performance indicators, such as cost or scope performance, owing to data constraints. Additionally, the single-country design of the study limits the generalizability of the results to other national contexts, as the findings are specific to Uzbekistan's unique governance and project management practices.

5.3 Suggestions and Directions for Future Research

Future research could extend this analysis by exploring project schedule performance across multiple countries, which would help assess whether the institutional effects identified in this study persist in different governance and regulatory environments. A comparative study across multiple countries could provide deeper insights into the generalizability of these findings. Furthermore, integrating additional performance metrics, such as cost and scope outcomes, would offer a more comprehensive evaluation of project success and allow for a better understanding of the factors influencing project delivery. Finally, qualitative research examining supervision practices and institutional mechanisms could complement quantitative findings, providing a more nuanced understanding of how different IFIs manage schedule risk and the role of institutional governance in shaping project performance.

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