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The Impact of Implementation Capacity on the Link between Infrastructure Financing and Success in Kenya's Vision 2030 Public Projects

John W. Nguri[1*], Dr. Duncan Elly Ochieng[2] & Prof. Gituro Wainaina[3]
[1]PhD Candidate in Business Administration, Faculty of Business and Management Science, University of Nairobi
[2](PhD, FFA, CPA) Senior Lecturer, Department of Finance and Accounting Faculty of Business and Management Sciences, University of Nairobi
[3]Department of Management Science and Project Management, Faculty of Business and Management Sciences, University of Nairobi

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Abstract

Purpose: This study examines the success factors influencing cost and time variances in public capital projects in Kenya, with a focus on identifying sectoral disparities and the role of financing and implementation capacity. It aims to provide insights into mitigating risks to achieve Kenya's Vision 2030 infrastructure goals.

Materials and Methods: The study employs descriptive statistics and regression analysis to evaluate data on cost and time overruns across various infrastructure sectors, including roads, energy, and water and sanitation. The analysis explores the impact of infrastructure financing (internal, external, and PPP) and implementation capacity factors such as procurement, supervision, planning, and payment processes.

Findings: The results reveal significant variability in cost and time overruns across sectors. The road sector recorded the highest mean cost overrun, while the energy sector exhibited the highest risk of cost overruns. Time overruns were also prominent, with the road sector experiencing the greatest variability. Internal financing increased both cost and time overruns, whereas external financing reduced them due to stringent oversight mechanisms. PPP projects, however, experienced notable overruns due to the complexities of multi-stakeholder management. Enhanced implementation capacity significantly mitigated both cost and time overruns, while delayed payments to contractors exacerbated project inefficiencies.

Implications to Theory, Practice and Policy: The study emphasizes the need for enhanced risk management strategies tailored to sector-specific challenges. Strengthening implementation capacity through better procurement, planning, and supervision is critical to reducing variances. Policymakers should prioritize timely payments to contractors and adopt stricter accountability measures for internally and PPP-funded projects. Leveraging external financing's oversight benefits while simplifying PPP frameworks can further enhance the success of public capital projects.

Keywords*: Infrastructure Financing, Implementation Capacity, Public Capital Projects, Cost Time Overrun*

1.0 INTRODUCTION

Infrastructure financing is central to Kenya's Vision 2030, which seeks to transform the country into a middle-income economy by prioritizing critical sectors such as transport, water supply, and energy (World Bank, 2023). Despite substantial investments in public infrastructure, Kenya's infrastructure contribution to GDP remains lower than that of comparable middle-income countries (African Development Bank, 2022). This discrepancy highlights the need to evaluate factors beyond financing that influence project outcomes and contribute to the country's economic underperformance.

While financial availability is vital, a growing body of research underscores the importance of governance, socio-political stability, and implementation capacity in determining infrastructure project success (Xu et al., 2021; Akinyemi & Adewale, 2023). Studies in countries like China and Nigeria reveal that adequate financing must be coupled with efficient implementation mechanisms, political stability, and effective governance structures to achieve desired outcomes (Zhao & Feng, 2020). Even with sufficient funding, challenges such as delays, cost overruns, and project abandonment can undermine project success (Amadi & Nwachukwu, 2022). These issues are equally relevant in Kenya, where inefficiencies persist despite significant investments under Vision 2030, delaying the country's progress toward its development goals.

Existing studies often attribute Kenya's infrastructure challenges to governance deficits, corruption, and political instability (Mwangi, 2021). However, there has been limited exploration of how implementation capacity—specifically, the quality of project supervision, administrative competence, and procurement efficiency—affects project outcomes. This gap is significant, as Kenya's institutional weaknesses in these areas have left many projects vulnerable to inefficiencies such as cost escalations and delays (Odhiambo & Wamuyu, 2021). Understanding these operational factors is crucial for addressing the broader challenges in Kenya's infrastructure development efforts.

This study investigates the role of implementation capacity in the successful delivery of Kenya's public infrastructure projects. Using theoretical frameworks such as the pecking order theory, which explains funding preferences, and agency theory, which examines stakeholder relationships, the research focuses on procurement processes, project supervision, and institutional coordination (Myers & Majluf, 1984; Jensen & Meckling, 1976). By examining these variables, the study aims to provide actionable insights for enhancing the effectiveness of Kenya's public capital projects.

The findings of this study have both practical and academic significance. For policymakers and development practitioners, the study highlights the need to strengthen institutional capacity and governance structures to optimize infrastructure financing strategies and improve project outcomes (UNCTAD, 2023). Academically, the research contributes to the discourse on infrastructure development in low- and middle-income countries and offers lessons applicable to other developing economies with similar challenges.

Thesis Statement

This study argues that enhancing Kenya's implementation capacity—through improved procurement processes, effective project supervision, and strengthened institutional coordination—is essential for overcoming inefficiencies in public infrastructure projects and achieving the goals of Vision 2030.

2.0 LITERATURE REVIEW

The success of public capital projects has garnered increasing attention, particularly in developing economies where infrastructure is a key driver of economic development. Several studies have identified various factors influencing project outcomes, but gaps remain in addressing the internal institutional capacities—such as procurement and supervision—that directly impact project efficiency and success.

Gichuki et al. (2020) provided an empirical analysis of capital project implementation in Sub-Saharan Africa, highlighting political stability, funding availability, and project management capacity as key determinants of project success. While this study made valuable contributions, its narrow focus on funding and political dynamics limited its scope. Importantly, it did not explore the critical role of implementation capacity, such as procurement and project supervision, which are integral to achieving efficient and timely project delivery. Furthermore, the study did not analyze how these factors influence different types of infrastructure projects, such as transport versus water supply. This study seeks to fill this gap by focusing specifically on internal capacities within public agencies and examining sector-specific challenges related to Kenya's Vision 2030 projects. For instance, procurement inefficiencies and inadequate project supervision may lead to cost overruns, delays, and substandard execution, especially in complex infrastructure sectors like energy or transportation. These factors can vary across sectors, affecting the types of projects differently.

Muriuki and Mutua (2019) extended the discussion by comparing project delays in Kenya and Tanzania, identifying contractor inexperience, delayed payments, and weak regulatory frameworks as major causes of delays. However, their study emphasized contractor-related challenges and did not sufficiently address internal institutional factors such as procurement efficiency and the capacity of agencies to supervise projects. By focusing on both external and internal factors, this study takes a more holistic approach, presenting a broader understanding of operational challenges that contribute to project delays in Kenya. Additionally, it considers how procurement processes, such as transparency, competitive bidding, and supplier management, affect project timelines and overall outcomes.

Obeng et al. (2021) examined governance issues in Ghana's infrastructure projects, pointing to corruption, poor planning, and political interference as major causes of project failures. While their study shed light on governance-related issues, it neglected operational and institutional factors such as procurement and project supervision. These factors are equally critical in determining project success, as they influence the efficiency with which resources are allocated, contracts are awarded, and projects are executed. This study builds on Obeng et al. (2021) by integrating both governance and operational challenges, offering a more comprehensive analysis of the institutional bottlenecks that hinder Kenya's infrastructure development. By examining how governance interacts with procurement inefficiencies and poor supervision, this study provides a clearer picture of the multifaceted obstacles facing infrastructure projects in Kenya.

Njeru et al. (2022) provided insights into institutional capacity, emphasizing the role of human capital and modern project management tools in improving large-scale infrastructure projects. However, their research was limited to large-scale projects and did not consider smaller but equally crucial infrastructure projects, such as rural road networks and water supply systems, which are vital for Kenya's broader development agenda. This study expands on Njeru et al. (2022) by

examining both large and small capital projects and providing a more holistic view of the institutional factors at play across sectors. Additionally, it explores a wider range of institutional capacity factors, such as procurement and project supervision, to offer a more comprehensive understanding of project success determinants.

Wanjiku et al. (2023) conducted a contemporary assessment of project management practices for Vision 2030 projects, identifying poor stakeholder communication and weak coordination as key contributors to project delays and budget overruns. While their study provided important insights into stakeholder-related issues, it did not examine broader institutional challenges, particularly in procurement and supervision efficiency. This study addresses this gap by including critical institutional factors such as procurement processes, contract management, and project supervision, providing a more comprehensive framework for understanding the challenges facing Vision 2030 projects.

The reviewed literature reveals consistent gaps in addressing the internal institutional capacities that influence the success of public capital projects. Previous studies, such as those by Nyasetia et al. (2016) and Misiko et al. (2015), did not make clear distinctions between internal and external factors impacting implementing agencies. More recent research, such as that by Gichuki et al. (2020), Njeru et al. (2022), and Wanjiku et al. (2023), has incorporated modern project management practices but often lacks a detailed analysis of institutional aspects like procurement and supervision processes. Moreover, most studies have focused predominantly on large-scale projects, neglecting smaller but equally important infrastructure projects.

This study fills these gaps by focusing on internal institutional capacities, specifically procurement, project supervision, and institutional coordination. By examining both large and small projects and analyzing how varying institutional capacities affect project outcomes, this research offers actionable policy recommendations to strengthen public agencies' internal capacities. This broader perspective enhances the understanding of how institutional reforms—particularly in procurement and supervision—can improve the efficiency and success of public capital projects under Kenya's Vision 2030, contributing significantly to the literature on infrastructure development in emerging economies.

To support this study's approach, the Agency Theory (Jensen & Meckling, 1976) is used, which is highly relevant to understanding the relationships between stakeholders in public infrastructure projects. According to Agency Theory, the conflict of interests between project owners (government agencies) and contractors (agents) can lead to inefficiencies, especially in procurement processes and project supervision. This theory helps explain how lack of oversight, inadequate supervision, and poor procurement practices create opportunities for project delays and cost overruns. By focusing on the agency relationships and improving the institutional mechanisms that govern these relationships, the study proposes targeted solutions to enhance the success of infrastructure projects.

3.0 MATERIALS AND METHODS

Data Analysis

This study adopted a positivist approach, where quantitative data were collected, and hypotheses tested to form conclusions and generalizations. The study started by expressing the cost overruns

in model 1 as a function of infrastructure financing and implementing capacity factors and their interactions as follows:

$$COST\_Overrun_i = \beta_0 + \beta_1 IF_i + \beta_2 IC_i + +\delta_1(IF_i * IC_i) + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. \; 1$$

Where $COST\_Overrun_i$ is the cost overrun of the i^{th} public capital project, computed as the difference between the final cost of a project and its initially estimated cost in local currency (Kenya shillings). IF_i is the infrastructure financing variable of the i^{th} public capital project that is measured as a categorical variable. It assumes

$$IF_i = \begin{cases} 1, & if\ the\ project\ was\ fully\ financing\ through\ internal\ funds \\ 2, & if\ the\ project\ was\ fully\ financing\ through\ external\ funds \\ 3, & if\ the\ project\ was\ fully\ financing\ through\ PPP \end{cases}$$

IC_i = is the components of implementing capacity such as Procurement Capacity, Supervision Capacity, Planning Capacity and Payment to contractors. β_0 = is the intercept term; β_1 is the coefficient for infrastructure financing mode. β_2 = is the coefficient for implementing capacity components.

δ_1 = is the coefficient for the interaction between infrastructure financing mode and implementing capacity components. Its measures how the effect of infrastructure financing mode on cost overruns changes with implementation capacity components while ε_1 = error term for cost overruns.

For the time overrun, it was approximated by model 2

$$TIME\_overrun_i = \beta_3 + 4IF_i + \beta_{15} IC_i + \delta_2(IF_i * IC_i) + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. \; 2$$

Where $TIME\_overrun_i$= is the time overrun of the i^{th} public capital project, computed as the difference between the actual completion time of the public capital project and the initially planned completion time in months. δ_1 = is the coefficient for the interaction between infrastructure financing mode and implementing capacity components. It measures how the effect of infrastructure financing mode on time overruns changes with implementation capacity components. The rest of the variables are as defined in equation 1.

To analyze Models 1 and 2, the study used time series data from the past ten years, covering the implementation periods of MTP I and MTP II capital projects. While the data spanned these years, the analysis focused on the relative performance of each project without specifying the exact implementation periods. The study employed a descriptive cross-sectional research design to infer population characteristics and examine the relationships between dependent and independent variables. The analysis involved descriptive statistics, multiple linear regression, and factor analysis to identify the correlation matrix between these variables. The study concentrated on high-impact infrastructure projects that align with Kenya's Vision 2030. The target population included projects from the roads, energy, and water and sanitation sectors implemented over the last decade.

For data collection, the research used secondary data on cost overruns, time overruns, and infrastructure financing methods. Additionally, the study gathered primary data from project managers to understand their views on how organizational capacity and external environmental factors influenced project outcomes. The research sourced the project data from published reports by agencies responsible for capital project development, which included 526 road projects, 20

power sector projects, and 91 water and sanitation projects. Using Krejcie and Morgan's (1970) formula, the research determined a sample size of 313 projects: 220 from the road sector, 20 from the power sector, and 73 from the water and sanitation sector. The research applied a combination of purposive and random sampling techniques. Purposive sampling ensured broad geographic representation across Kenya, while random sampling within each sector minimized bias and enhanced the generalizability of the findings. Respondents on implementation capacity factors were selected for their independence and knowledge of the projects, and project managers were purposively chosen to provide primary data.

Data collection involved structured questionnaires that gathered both primary and secondary data. The secondary data questionnaire collected project-specific details, while the primary data questionnaire assessed perceptions of implementation capacity factors. Infrastructure financing variables were measured using ratio scale, akin to the Success of Implementation of Public Capital Projects (SICP), comparing variations between final and original costs and timelines. Implementation capacity variables were measured using a five-point Likert scale with 1 as the lowest and 5 the highest, allowing respondents to rate the significance of each factor and differentiate between favorable and unfavorable opinions.

To ensure the adequacy and validity of our primary data, the research used the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, which yielded a value of 0.6349, exceeding the critical threshold of 0.5 and confirming data validity for analysis. Reliability was assessed using Cronbach's alpha, which produced a coefficient of 0.7859, surpassing the acceptable reliability threshold of 0.7. The correlation matrix test revealed positive correlations between implementation capacity factors and both cost and time overruns, indicating significant relationships between these variables.

Data limitation was taken into account. Secondary data, particularly concerning time and cost overruns, often lacks sufficient contextual information. For example, the reasons behind delays or cost increases may not be fully explained in the dataset, and without this context, it is difficult to understand the root causes of these issues. In contrast, primary data collection allows for a more nuanced understanding of these factors, particularly with regard to implementation capacity, which is crucial for addressing the broader question of water shortages. Without this supplementary information, secondary data alone may not provide a full picture of the factors influencing project delays or cost overruns.

To mitigate these limitations, several strategies were employed: Cross-validation was used to compare secondary data across multiple sources, helping to identify discrepancies and ensure more accurate representation of time and cost overruns. This approach helped address concerns about outdated or inconsistent data. We also made use of data imputation especially for missing data, particularly where key variables related to project implementation or costs are unavailable. However, this will be done carefully to avoid introducing bias.

4.0 FINDINGS

Table 1 presents the descriptive statistics, analyzing the success factors of public capital projects in Kenya with a focus on cost and time overruns. The results show that the overall mean cost overrun for the sampled projects was approximately Kshs 496 million, with a substantial standard deviation of Kshs 1.53 billion, indicating a significant variation in cost overruns across different

projects. At sector level, the results indicate that the road sector recorded the highest mean cost overrun at Kshs 656 million, with a standard deviation of Kshs 1.79 billion. The water and sanitation sector followed, with a mean cost overrun of Kshs 127 million and a standard deviation of Kshs 169 million. In contrast, the energy sector exhibited the lowest mean cost overrun at Kshs 28.4 million but still showed notable variability, with a standard deviation of Kshs 92.9 million. Comparing the risk of cost overruns across sectors, the energy sector emerged as the riskiest, with a coefficient of variation of 327.11%, followed by the road sector at 308.07%, and the water and sanitation sector, which had the lowest risk, at 133.07%. These high coefficients of variation, especially in the energy and road sectors, underscore the unpredictability of cost performance, aligning with previous studies by Larsen et al. (2016), Senouci et al. (2016), Adam et al. (2015, 2017), which associated such cost variability with project delays and reduced success rates.

Further, the study results shows that the overall mean time overrun was 12 months, with a high standard deviation of 13 months, resulting in a coefficient of variation of 108.03%. The road sector exhibited the highest time overrun risk, with a mean of 12 months, a standard deviation of 14 months, and a coefficient of variation of 117.68%. The energy sector followed closely, with a mean time overrun of 10 months and a standard deviation of 11 months, yielding a coefficient of variation of 109.25%. The water and sanitation sector had the lowest time overrun risk, with a mean of 11 months, a standard deviation of 9.5 months, and a coefficient of variation of 71.19%. the study concludes that the high standard deviations and coefficients of variation across all sectors for both cost and time overruns suggest a considerable risk to the successful implementation of public capital projects in Kenya. These risks, if left unmanaged, could hinder the achievement of Vision 2030's infrastructure goals. Consequently, there would be a need for enhanced risk management strategies in project execution to mitigate these adverse impacts.

Regression Analysis

The regression analysis results shown in Table 2 indicate that infrastructure financing significantly influences both cost and time variances at the 0.01 significance level. Specifically, internal financing increases both cost overruns by approximately KES 54.9 million and time overruns by around 0.008 months. This finding aligns with existing literature, suggesting that domestically funded projects often face more budgetary constraints, less rigorous oversight, and fewer deadlines compared to externally financed projects. Studies by Kakembo (2014) and Njiru et al. (2017) highlight the frequent cash flow issues and mismanagement typical of internally funded projects, leading to significant delays and cost escalations.

Conversely, external financing is associated with a notable decrease in both cost overruns (by about KES 38.95 million) and time overruns (by around 0.006 months). This can be attributed to the strict conditionalities and monitoring mechanisms imposed by international financiers, such as the World Bank and African Development Bank, which enforce tighter financial discipline and adherence to deadlines. Supporting these findings, Kessy and Urassa (2018) found that externally funded projects often feature performance benchmarks and penalties for non-compliance, resulting in more efficient project execution.

On the other hand, Public-Private Partnership (PPP) financing results in an increase in both cost overruns (by approximately KES 49.1 million) and time overruns (by about 1.32 months). This is in line with the complexities associated with multi-stakeholder partnerships in PPP projects, where delays in decision-making and conflicting objectives often lead to inefficiencies. Osei-Kyei and

Chan (2017) similarly observed that the fragmented nature of PPP projects and the challenges of aligning public and private sector goals contribute to both cost and time overruns.

Analysis shows that projects initiated later in the Vision 2030 framework tend to exhibit improved performance metrics, potentially due to enhanced implementation strategies and increased capacity building as the framework evolved. This improvement suggests a learning curve within the project management teams and a better alignment of resources and objectives over the duration of the Vision 2030 initiative. Further, the study findings underscore the significant role of implementation capacity, particularly in areas such as procurement, supervision, planning, and timely payments to contractors. For instance, improvements in procurement capacity reduce both cost overruns (by approximately KES 1.29 million) and time overruns (by 1.18 months). This result is consistent with Mboga (2019), who notes that well-structured procurement processes mitigate delays and cost escalations by ensuring competitive bidding, transparent evaluation, and proper contractor qualification.

Effective supervision decreases cost overruns (by about KES 1.05 million) and time overruns (by 0.63 months). Ahsan and Gunawan (2010) affirm that real-time project monitoring is key to preventing projects from veering off track financially and temporally. Delayed payments to contractors significantly increase both cost overruns (by around KES 1.55 million) and time overruns (by 0.431 months), as cash flow problems can lead to project slowdowns and renegotiations.

Additionally, it is crucial to address the potential for omitted variable bias and multicollinearity in the regression models. While the current analysis provides significant insights, future studies should consider incorporating additional variables that may influence project outcomes, such as project size, type, and regional economic conditions. Addressing these factors can enhance the robustness of the regression results and provide a more comprehensive understanding of the dynamics at play.

The interaction term between implementation capacity and infrastructure financing shows a significant negative impact on both cost and time variance. In the cost variance model, the interaction term has a coefficient of -1.043 x 10^7 with a significance level of *** ($p < 0.01$), indicating that better implementation capacity, when coupled with infrastructure financing, leads to a notable reduction in cost variance by approximately KES 10.43 million. The interaction term also has a significant negative coefficient of -0.429 in the time variance model, further indicating that enhanced implementation capacity, in conjunction with infrastructure financing, reduces time overruns by 0.429 months.

5.0 CONCLUSION AND RECOMMENDATIONS

In conclusion, the findings of this study reveal that both infrastructure financing and implementation capacity significantly influence cost and time variances in public capital projects in Kenya. Internal and PPP financing tend to increase both cost and time overruns, while external financing helps mitigate these issues due to the stringent conditions and monitoring mechanisms imposed by international lenders. Additionally, improvements in procurement, supervision, and planning capacity reduce project inefficiencies, whereas delayed payments to contractors exacerbate both cost and time overruns. Importantly, the interaction between implementation capacity and infrastructure financing shows a significant effect, suggesting that when

implementation capacity is strengthened, the negative impact of infrastructure financing, especially internal and PPP financing, on cost and time overruns is reduced. This interaction effect underscores the critical role that a combination of sound financing mechanisms and enhanced implementation capacity plays in improving project outcomes. Better implementation capacity, particularly in procurement, supervision, and planning, helps mitigate the cost and time inefficiencies that can arise from certain types of infrastructure financing, especially internal and PPP projects.

The study therefore recommends that to enhance the cost and time efficiency of public capital projects, the government should place greater emphasis on securing external financing from international donors and financial institutions. The stringent oversight, monitoring mechanisms, and conditionalities attached to such funding sources foster better financial discipline and adherence to timelines. By securing external financing, project outcomes will improve, and the likelihood of cost and time overruns will decrease. Additionally, given the complexities associated with PPP projects, there is a need for policymakers to streamline decision-making processes and establish clear regulatory frameworks that align the interests of both public and private stakeholders. The government should therefore develop policies to facilitate quicker approvals, reduce bureaucratic hurdles, and improve coordination between partners. Strengthening PPP management can help mitigate the cost and time inefficiencies associated with these projects, especially when combined with enhanced implementation capacity.

Further, the success of public capital projects hinges not only on financing but also on effective implementation. The interaction effect observed in the study suggests that enhancing implementation capacity—particularly in procurement, supervision, and planning—can significantly reduce project delays and cost overruns, even in projects financed through internal or PPP sources. Providing targeted training and capacity-building opportunities for procurement officers, project supervisors, and planners will ensure that projects are executed in a timely and cost-effective manner. Additionally, institutional reforms aimed at enhancing these capacities should be prioritized to optimize project outcomes. To avoid disruptions caused by delayed payments, the government should establish and enforce efficient payment systems that guarantee contractors are compensated promptly. Timely payments will prevent cash flow issues that can stall progress on projects, leading to cost overruns and time delays. By reducing the financial burden on contractors, this measure will help prevent potential legal disputes and ensure smoother project completion.

Looking ahead, further investigations should delve into underexplored areas, such as sector-specific challenges in implementing financing mechanisms and the potential for alternative approaches, such as blended financing models or community-based funding initiatives. Additionally, case studies like the Thika Superhighway Project in Kenya, which successfully utilized external financing and robust project management practices, or the failures of the Lake Turkana Wind Power Project due to inadequate planning and stakeholder misalignment, can serve as illustrative examples. These cases provide practical insights into how the study's recommendations can be applied effectively in real-world scenarios. By addressing these gaps and leveraging lessons from successful projects, policymakers and stakeholders can refine strategies to ensure more efficient execution of public capital projects.

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Table 1: Descriptive Statistics of Cost (Kshs Million) and Time (Months) Overruns

Sub-Variables	Statement	Mean	Standard Deviation	Coefficient of Variation (Percent)
Cost overrun	Road sector	656	1790	272.87
	Energy sector	28.4	92.9	327.11
	Water and sanitation sector	127	169	133.07
	Overall	**496**	**1530**	**308.47**
Time overrun	Road sector	12	14	117.68
	Energy sector	10	11	109.25
	Water and sanitation sector	11	9.5	71.19
	Overall	**12**	**13**	**108.03**

Table 2: Regression Results

	Cost Variance model			Time variance model		
	Coefficients	**Constants**	**R-squared**	**Coefficients**	**Constants**	**R-squared**
Overall infrastructure financing	1.256 x10^{8}*** (850,203)	4.962 x10^{8}*** (943,501)	0.015	0.261*** (0.00733)	12.04*** (0.00811)	0.011
• Internal financing	5.490 x10^{7}*** (2.922e+06)	3.602 x10^{8}*** (1.278 x10^{7}***)	0.004	0.00750*** (0.000258)	11.53*** (0.0197)	0.011
• External financing	-3.895 x10^{6}*** (29,685)	6.183 x10^{8}*** (1.325 x10^{6}***)	0.014	-0.00645*** (0.000257)	12.29*** (0.0113)	0.009
• PPP financing	4.911 x10^{8}*** (2.538 x10^{6}***)	4.728e+08*** (941,328)	0.021	1.315*** (0.0217)	12.03*** (0.00815)	0.011
Implementing capacity	1.691x10^{7}*** (395,630)	4.962 x10^{8}*** (943,501)	0.015	-0.104*** (0.00336)	12.04*** (0.00811)	0.011
• Procurement Capacity	-1.298 x10^{7}*** (590,386)	4.961 x10^{8}*** (943,745)	0.024	-1.176*** (0.00502)	12.06*** (0.00802)	0.032
• Supervision Capacity	-1.052 x10^{8}*** (613,427)	4.959 x10^{8}*** (938,531)	0.026	-0.629*** (0.00522)	12.03*** (0.00808	0.016
• Planning Capacity	-7.102 x10^{7}*** (808,013)	4.952 x10^{8}*** (942,460)	0.018	-0.124*** (0.00687)	12.04*** (0.00811)	0.011
• Payment to contractors	1.559 x10^{8}*** (526,277)	4.995 x10^{8}*** (928,375)	0.047	0.431*** (0.00453)	12.06*** (0.00809)	0.014
Interaction of implementation capacity and infrastructure	-1.043x10^{7}*** (47,508)	--	0.031	-0.429*** (0.00344)	--	0.025

**** p<0.01, ** p<0.05, * p<0.1*