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CRITICAL SUCCESS FACTORS AND SUSTAINABILITY OF PUBLIC-PRIVATE PARTNERSHIP HEALTH PROJECTS IN UASIN GISHU COUNTY, KENYA

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ABSTRACT

This study examined the critical success factors influencing the sustainability of Public–Private Partnership (PPP) projects in the health sector within Uasin Gishu County, Kenya. The research was guided by Transaction Cost Theory and Stakeholder Theory, focusing on how institutional frameworks, stakeholder engagement, financial management, capacity building, and technology adoption contribute to sustainable PPP health initiatives. The study adopted a descriptive research design, targeting key stakeholders involved in PPP health projects, including public officials, private partners, and health professionals. Data were collected using structured questionnaires and analyzed through descriptive and inferential statistics, including hierarchical regression analysis. The findings revealed that stakeholder engagement, financial management, and institutional frameworks are significant determinants of PPP project sustainability, with stakeholder collaboration exhibiting the strongest influence. Regression results showed that the inclusion of critical success factors increased the explanatory power of the model ($R^2 = 0.327$), although the overall model did not reach statistical significance ($p > 0.05$). Among demographic variables, cadre differences showed a notable effect, indicating variation in sustainability perception across professional categories. Despite the non-significant model, the findings underscore the strategic importance of structured collaboration, sound policy frameworks, and robust financial practices in sustaining PPP health projects. The study recommends harmonizing PPP policies, institutionalizing stakeholder engagement, diversifying financing mechanisms, and strengthening human resource and technological capacities. The results contribute to the growing body of knowledge on PPP sustainability in Kenya's health sector and provide practical insights for policymakers, private investors, and healthcare managers seeking to enhance long-term project viability.

Keywords: *Regulatory Framework, Stakeholder Engagement, Risk Management, Capacity Building*

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INTRODUCTION

Global support for public-private partnership (PPP) projects are at their peak, with PPPs accounting for 15 to 20 percent of investments, primarily in infrastructure. G20 discussions have emphasized the urgent need to boost investments, especially in low-income countries. The conventional view on public-private partnerships is that they should deliver better-quality services at lower costs compared to traditional public projects. While the private partner seeks to make a profit, the returns must remain fair. Projects that fall short of these expectations often face scrutiny from the government, media, user groups, and civil society. However, achieving a balance that meets the needs of all stakeholders is challenging (World Bank, 2018).

According to data from the European Investment Bank (2017), which analyzed trends across 28 EU nations, Turkey, and the Western Balkans from 1990 to 2016, public-private partnerships (PPPs) have been widely implemented beyond just the transport sector. Key public service areas such as healthcare, education, the environment, public safety, defense, housing, and telecommunications have also been supported through PPP models. Among these, healthcare, education, and environmental projects attracted a notably higher share of PPP investment. Globally, this shift toward adopting PPP frameworks has also been observed in countries across Asia, Latin America, and the Middle East (Kim, 2019).

Some of the key benefits of Public-Private Partnership (PPP) projects include facilitating government access to funding for development initiatives, transferring certain risks to the private sector, and leveraging private sector expertise and professionalism. PPPs also promote large-scale investment and infrastructure development, streamline business processes, and support the implementation of high-quality, institutionally managed projects that meet international standards. With all the aforementioned benefits, PPPs project are subject to, but not limited to the following challenges such as regulatory framework, risk allocation, and financial viability, Xiaohong, L. (2023).

Regional economic integration (REI) serves as a key development strategy across the African continent, which is home to numerous regional economic communities with differing levels of ambition, longevity, and success. In the 1970s, the formation of many of these agreements was shaped by political-economic principles rooted in the "developmental state" model. However, the shift in economic thinking during the 1980s, marked by the rise of neoliberalism, has significantly influenced the structure and design of most REI initiatives in Africa, including the New Partnership for African Development. World bank indicates that, "in the building Integrated Markets within the East African Community, 88484 report," East Africa is ranked among the world's fastest-growing economic regions. The Partner States of the East African Community (EAC) acknowledge that sustained and inclusive growth relies heavily on robust infrastructure development to ensure equitable distribution of benefits across the region. To support this goal, the EAC Secretariat is dedicated to fostering an integrated, dynamic regional economy anchored by a strong infrastructure that delivers efficient services, enhancing the region's competitiveness on the global stage.

Given the substantial investment demands in critical sectors like energy, transportation, and water, the Secretariat underscores the importance of private sector engagement—not only for financial support but also for technical expertise—to advance development goals. Currently, all East African Community (EAC) member states are implementing PPP initiatives to enhance infrastructure. Among these, the energy sector has seen the highest level of private sector involvement, driven by the urgent need across member states to expand electricity generation capacity to fuel economic progress. Although legal frameworks for PPPs have been established across these nations, many still encounter specific and complex challenges that impede sustainable development. These include limited financial resources, underdeveloped infrastructure, weak institutional capacity, and vulnerability to external economic and environmental disruptions (Cirolia, 2020).

Kenya introduced Public-Private Partnerships (PPPs) through the 2011 PPP Policy Statement, which was later institutionalized under the PPP Act No. 15 of 2013. This legislation provides key guidelines, including the government's mandate to retain overall strategic oversight of public services, the stipulation that infrastructure

developed under PPPs must revert to government ownership after the contract term, and the principle of assigning project and performance risks to the party most capable of managing them effectively.

Kenya is considered to have one of the most developed Public-Private Partnership (PPP) frameworks on the African continent. To overcome the shortcomings of the 2013 PPP Act, a revised version was passed in December 2021. The new law enhanced the implementation process by introducing specific timelines, diversifying procurement options, and providing structured procedures for managing Privately Initiated Investment Proposals (PIIPs). A notable example of a PPP initiative is the standard gauge railway connecting Nairobi and Mombasa, aimed at improving transport efficiency and supporting economic development. Additionally, as part of its sustainability agenda, Kenya continues to invest in renewable energy projects, such as geothermal and wind power (Mutuku, 2023).

Sustainability of PPP projects refers to the ability of these projects to continue delivering quality health services effectively, efficiently, and equitably over the long term, even after the contract period or withdrawal of private partners. The concept of "public-private partnership" (PPP) emerged in the early 1990s. A significant historical precedent can be found in Germany, where PPP-based projects were implemented in cooperative construction initiatives. The earliest non-commercial construction societies were established in the mid-19th century through private investment. These organizations, in collaboration with the public sector, had to adhere to specific regulations regarding their business operations and profit distribution. In return, the government provided them with support interms of tax incentives and exemptions. (Kolesnikov, Y. A. 2018).

As Am miles, G., Maksimovic, R., & Bunchic, S. (2020) note, the results of their study correspond to those of the research made by Public-Private Infrastructure Advisory Facility (PPIAF), which also highlights the necessity to develop a legislative framework by the means of PPP laws at the early stages of adopting and institutionalizing the PPP concept. The study by the researchers has also emphasized that an appropriate structure of legislation is an essential factor that determines successful development of sustainable Public-Private Partnerships in transitional conditions.

The studies by previous researcher have studied on possible aspect that can be used to measure PPP projects sustainability. While capacity building, governmental support and regulatory frameworks, risk management, financial support and stakeholder involvement/ engagement have been considered as CSFs for PPP project sustainability, possible indicator like stakeholder satisfaction; service continuity; infrastructure maintenance and value for money will be measured in this accord.

CSFs refer to the key elements or conditions that must be present or well-managed for PPP projects to achieve their objectives and sustainability. In his study, (G Amović,2020), Critical success factors (CSFs) are described as essential areas of activity where positive outcomes are crucial for a manager to successfully attain their objectives. Kenya, Uganda, Rwanda, and Tanzania have made significant strides in promoting, implementing, and maintaining Public-Private Partnership (PPP) initiatives. These governments have established specific legal frameworks to support infrastructure development through PPPs.

These legal structures typically outline the types of contracts permitted, define the responsibilities and coordination roles of various PPP agencies, specify the mandates of PPP units, and include guidelines on financial assistance, pricing mechanisms, transaction procedures, model contracts, and conflict resolution mechanisms. However, progress in PPP implementation continues to be hindered by limited capacity within the local private sector, which prevents it from fully engaging as a partner in such projects. Therefore, there is a growing need to enhance private sector capabilities and increase awareness of PPP opportunities (BizClim, 2022).

The regulatory framework is the system of laws, guidelines, and institutional policies governing the planning, implementation, and operation of PPP projects in the health sector. It provides a procedural guide for Legal clarity and comprehensiveness; Consistency in policy application; PPP agreement and to some extent political

goodwill. Johnstone (2024) defines regulation as a set of authoritative rules enforced through a public agency responsible for monitoring and ensuring compliance. Contracts should clearly outline incentives and performance expectations while ensuring that the government maintains its responsibility, as citizens will continue to hold it accountable for the quality of healthcare and other services. To effectively oversee PPP arrangements, the government must retain adequate expertise within the implementing agency or a regulatory body. Deng, B., et al (2021), in their article on PPP Projects in China, they obtained 9 top CSFs, and Completeness of the legal framework was ranked sixth in importance.

Stakeholder Engagement is the degree to which stakeholders (government, private sector, community, healthcare providers) are involved in all phases of the PPP project—from planning to execution and monitoring through, stakeholder identification, decision-making: information sharing: Conflict resolution and relationship management. Khan (2019) explored stakeholder perspectives on PPP projects in healthcare service delivery within Sindh province, Pakistan, examining the motivations behind adopting these policies and the challenges faced during implementation. The study found that stakeholders had a limited understanding of the PPP concept, with key obstacles including insufficient stakeholder engagement and resistance from healthcare staff.

Risk management is the process of risk identification and assessment, risk prioritization, monitoring and evaluation, and mitigation of project risks between partners to ensure project continuity and success. Risk management is a structured approach to addressing risks (Edwards, 2021). An effective risk management system should include processes for identifying, classifying, and allocating risks. For a project to succeed, a robust risk management framework is essential, incorporating risk identification, analysis, and response (Burke, 2023) to ensure that emerging risks can be effectively managed. Risk management's foremost purpose is to identify potential challenges ahead of time so that preventive actions can be taken throughout a project's life cycle, thereby reducing their impact on delivering planned outcomes (UN, 2020).

Chileshe (2022) found that the top critical success factors were community buy-in and endorsement, rigorous project feasibility analysis, a solid legal and regulatory framework, access to capital markets, and the presence of a dedicated, well-organized public agency. Additionally, factors that received strong emphasis included effective and adequate allocation of resources, transparent and equitable procurement processes, and comprehensive, targeted employee training. The anticipated outcomes of PPPs involve optimizing the use of public funds, introducing innovative approaches to infrastructure development and service delivery, fostering competition, facilitating knowledge transfer from the private to the public sector, and ensuring sustained social benefits and service quality (Kanakoudis, 2007).

Uasin Gishu County—one of Kenya's 47 devolved governments—has taken a leading role in advancing sustainable development by putting in place several strategic plans: the IDP (2018–2022), the GGP (2018–2030), and the CCAP (2018–2030). In partnership with the private sector, civil society organizations, and international agencies, the county is working to meet its sustainability targets. It has identified priority areas for public–private partnerships— sanitation, transport, healthcare, education, and tourism—where such collaborations can strengthen infrastructure, create jobs, and stimulate economic growth. Supported by the national government, Uasin Gishu's administration is especially committed to deploying PPP models in health facilities sampled in this study to improve services and enhance residents' quality of life.

Problem Statement

Public-private partnerships projects (PPPs) are crucial for economic diversification and strengthening Kenya's resilience (Chileshe, 2020). The public health sector has struggled to meet growing healthcare demands due to resource shortages and management challenges. Chepkonga & Nyaga, (2019) concludes that financing universal health coverage through tax revenue has become unsustainable amid rising demand for quality healthcare and competing financial needs. As a result, the sector faces challenges such as underpaid staff, drug shortages, poorly maintained equipment, and inadequate personnel.

The decentralization of healthcare to county governments aimed to address these sectoral challenges, leading to a greater focus on public-private partnerships projects for funding and infrastructure development (Njoroge, 2019). But issues such as limited stakeholder involvement, poor management skills, risk management, inadequate capacity building threaten the long-term success and continuity of these initiatives. There are still limited researches on the critical success factors that influence the sustainability of PPP projects in the health sector. Uasin Gishu County's commitment to quality healthcare in its 2023–2027 CIDP, sustainability faces these obstacles to the effective delivery of preventive and rehabilitative health services, necessitating strong collaboration with development actors.

There is a growing need to closely examine CSFs that influences the sustainability of PPP health projects particularly in UGC. Therefore, this study has filled the knowledge gap by examining these key success factors that impact the sustainability of public-private partnerships (PPPs) ongoing projects in health within Uasin Gishu County. The insights gained will be beneficial to county officials and administrators, improving corporate governance and contributing to the attainment of county development goals.

Research Objectives

The main goal of this research was: to assess the CSFs for sustainability of public-private partnership projects in the health sector in Uasin Gishu County.

The study was guided by the following specific objectives:

- To evaluate the influence of the regulatory framework on the sustainability of PPP health projects in Uasin Gishu County.
- To establish the influence of stakeholder engagement on the sustainability of PPP health projects in Uasin Gishu County.
- To assess the influence of risk management on the sustainability of PPP health projects in Uasin Gishu County.
- To examine the influence of capacity building on the sustainability of PPP health projects in Uasin Gishu County.

The study was guided by the following research questions

- How does the regulatory framework influence the sustainability of PPP health projects in Uasin Gishu County?
- How does stakeholder engagement influence the sustainability of PPP health projects in Uasin Gishu County?
- How does risk management influence the sustainability of PPP health projects in Uasin Gishu County?
- How does capacity building influence the sustainability of PPP health projects in Uasin Gishu County?

LITERATURE REVIEW

Theoretical Review

Transaction Cost Theory (TCT)

Transaction Cost Theory (1937), developed by Ronald Coarse and later augmented by Oliver Williamson is founded on the idea that organizations are supposed to reduce costs incurred in carrying out economic transactions. Such expenses are negotiation expenses, monitoring expenses, enforce contract expenses, and uncertainty costs. TCT states the preference of the organizational forms like partnerships is based on the will to minimize these transaction expenses.

Therefore, in the circumstance of PPP initiatives applied in the health industry, TCT is especially suited to describe how the critical success factors can decrease inabilities and increase their sustainability in the long-

term vertical. This paper takes into consideration the roles that factors like stakeholder engagement, risk management, regulatory frameworks and capacity building play in determining transaction costs:

Engagement of stakeholder lowers the cost of negotiation and enforcement because the stakeholders understand one another, trust each other and are committed to that partnership. The risk management provides the risk to be allocated to those parties where it can be best handled, and this reduces the cost of monitoring and settling disputes. Regulatory regimes provide a clean law that limit the uncertainties of compliance and enforcement and Capacity building reduces the operational and organization coordination expenses through enhancing institutional and technical capacities of the public agencies. TCT as such gives a ground to evaluate the extent to which such critical factors, with adequate management, help to make PPP projects sustainable because of the prevention of transaction inefficiencies and improvement of governance.

Stakeholder Theory

Stakeholder Theory (1984), introduced by R. Edward Freeman, posits that the success and continuity of any project depend on the extent to which the interests of all relevant stakeholders are identified, considered, and addressed. In PPPs, especially those in the health sector, various stakeholders including government agencies, private investors, healthcare workers, patients, regulatory authorities, and local communities play vital roles in the project lifecycle.

This theory directly relates to the current study as it emphasizes the need for inclusive engagement and active participation of all stakeholders to achieve sustainable outcomes. The selected variables reflect core components of Stakeholder Theory as stakeholder engagement is fundamental to inclusive decision-making and ensures that project goals align with stakeholder expectations. While regulatory frameworks provide accountability structures to protect the interests of all involved parties, capacity building empowers stakeholders, particularly public institutions and local actors, to meaningfully contribute to project management and oversight. In addition, risk management benefits from diverse stakeholder perspectives in identifying, assessing, and mitigating risks equitably. Stakeholder Theory therefore supports the argument that a sustainable PPP project in the health sector must engage all relevant parties effectively and equitably throughout its planning, implementation, and operational phases.

Empirical Review

Miseda (2020) explored the CSFs associated with health-sector Public-Private Partnership (PPP) projects, with a specific focus on the Managed Equipment Services (MES) program. This initiative involved collaboration between the Kenyan government and private firms to equip hospitals in Narok County with specialized medical devices. The study utilized both qualitative and quantitative methods, including key informant interviews with PPP specialists and structured questionnaires administered to County and Sub-County Health Management Teams. Spearman's rank correlation analysis was used to explore relationships among the CSFs, while qualitative content analysis was employed to identify core themes. The results identified Political Goodwill, Stakeholder Engagement, Contractual Clarity, and Technical Expertise as critical elements, all of which demonstrated positive interrelationships. Notably, this research did not examine factors contributing to the long-term sustainability of PPP projects, which the current study seeks to investigate.

Sadeghi (2020) conducted a study on the feasibility of adopting PPPs to boost the services available in hospitals in Shiraz, Iran. The study used a descriptive survey design to gather data in 2016 in form of questionnaires to be distributed among hospitals affiliated to SUMS private hospitals, charitable organizations, and investors in the healthcare community. The participants were chosen by means of convenience sampling (56 were chosen). Various data were analyzed in the SPSS version 21 by means of Mann-Whitney, T-tests, and Chi-square tests with the level of significance of 0.05. Capacity development (mean score 2.60 +/minus 0.39) and socio-cultural aspects (2.58 +/minus 0.40) were the most favourable elements according to the public sector. On the other hand, there were participants in the private sector whose

priority was related to financial and capital considerations (2.64 +/- 0.46). View between the financial-capital and socio-cultural factors in PPP adoption was statistically significant ($P < 0.05$) with regards to the views by the public and the private sector.

Nyakundi (2020) carried out a study in Kenya on the relationship between stakeholder engagement and the management of relationships on the success of HIV and AIDS interventions in Kisii County. Out of 14 strategically selected high-volume hospitals, data in the study was collected using 89 respondents identified as being healthcare professionals, organizational representatives dealing with HIV and AIDS programs. Mixed data collection methods were used to collect data including the focus group discussions and the questionnaires. The findings showed the lack of coherent and systematic methods of reaching out to people. Furthermore, the prowess of stakeholder associations was dilapidated by the little engagement and consultation of healthcare workers by benefactor organizations and government authorities at the local levels.

Edwards (2021) describes risk management as a formal procedure of identifying and managing possible risks. A comprehensive risk management plan would normally involve the process of identifying, classifying and the allocation of responsibilities to different risks. According to Burke (2023), an effective project should always have an effective risk management strategy that involves identification of risks, its analysis, and planning actions to respond to the risk in case it occurs and that when risk occurs it is well managed. According to the United Nations (2020), the fundamental goal of risk management is to identify issues before they occur, so that there can be direct planning and implementation of the mitigation strategy before the project or product lifecycle to minimize the negative effects of risk and enable the realization of the project deliverables.

Dogan (2024) in Turkey examined and determined the critical risk factors that affect the performance of PPP city hospital project. The study was conducted with adequate research in literature of identifying potential risk variables and then a survey was conducted that measured their likelihood and degree of impact. The results obtained were put to analysis with the aim of prioritising the risks. The research found five leading causes of risks, which include the change in foreign exchange rates, fluctuations or instability in the prices of the inflation, high costs of financing, financial challenges, and instability in the whole economy. On the other hand, the problem of equipment shortages did not find the most significant position among the assessed risks.

All these empirical research findings underscore the fact that risk management is a critical element in economic sustainability of PPP initiatives. The healthcare industry that faces immense level of uncertainty in projects and large scale of expectation by the community requires well-designed plans of risk discovery, risk allocation, and risk reduction. PPP project where the risk sharing arrangements can be well-defined, in line with the abilities of the parties, tend to be more predictable in delivery of service, fewer disputes occur, and stakeholder confidence is likely to be raised.

The majority of the existing studies, however, are inclined to concentrate on risk management as a contractual or financial idea, disregarding operational and contextual risks one may encounter in environments of decentralized care. Low institutional capacity and poor monitoring systems may impede work to avert the risks in Kenya, where county governments are assuming a greater role in the provision of healthcare services.

As such, although the literature findings point to the implication of risk management in improving the outcomes of a project, there is a need to further understand the implications of risk management in maintaining the PPP health projects even after the implementation process. The current study will fill this gap as it looks into the role of risk management practices on the long-term sustainability of PPP health projects within the context of Uasin Gishu County.

Capacity building refers to the development and strengthening of human resources, institutional systems, technical skills, and organizational competencies necessary for the effective planning, implementation, and management of PPP projects. In the health sector, where PPPs involve complex service delivery mechanisms,

capacity building ensures that public officials, healthcare workers, and private partners are equipped with the knowledge and skills required to navigate contractual, financial, and operational demands.

Technical and managerial capacity shortages therefor have been cited as one of the barriers to successful implementation and management of PPPs especially at the county level in Kenya. Having local institutions being empowered through training, mentorship and the transfer of knowledge is therefore crucial in making sure that the PPP health projects are not only properly established but also manageable in the long run. Decision-making, monitoring, and accountability are all capacities built through capacity building, which is required to ensure sustainability and good service delivery of the project.

In their article which was titled Identification of Critical Capacity Building Challenges in Public-Private Partnerships (PPPs) Projects: The Case of Tanzania, Chileshe et al. (2021) investigated the capacity development problems that hinder PPP projects. The research study found out that participants that have had the PPP experience, as well as those that have not had the experience, rated eight capacity-building constraints in significantly different ways. The four most important barriers were; scarce domestic experiences, insufficient funds, unavailability of successful models of PPP, and unavailability of long-term trainers in PPPs. Conversely, the insufficient political will towards the promotion of PPPs was discovered as the least influential obstacle. Moreover, there appeared the significant positive dependency between poor qualifications and the absence of practical training possibilities. In order to solve them, the study singled out four focus areas of solutions: (1) training and education, (2) benchmarking and lessons learning based on the experience of existing projects, (3) knowledge sharing and exchange in experiences, and (4) institution reform and establishment of enabling environment. The insights contribute to better understanding of the capacity development themes and give operational advice to the stakeholders during PPP projects lifecycle stage.

The definition of sustainability in PPP health projects implies the long-term sustainability of the concept, i.e. the ability of such initiatives to provide quality healthcare services with maintenance of infrastructure and service standards, and value-added money way past some contract period. It comprises monetary sustainability, institutional sustainability, stakeholder contentment as well as flexibility to changing health.

In 2022, Moore et al., carried out research to understand what factors affect the sustainability of community mental health assets. The study entailed carrying out systematic reviews to examine the available literature on sustainability in this regard. A critical analysis of evidence concerning sustainability at the micro, meso and macro level was done through narrative synthesis. The results indicated several facilitators and barriers affecting sustainability at these levels to provide knowledge to the voluntary sector organizations and policymakers to work on improving community mental health support. Among the important factors identified on all three levels, it is noteworthy that both connectedness and funding are of utmost importance in keeping the activities and benefits of the organizations aimed at supplementing community mental health at the required level.

The study by Ilesanmi et al. (2022) was aimed at assessing the sustainability of donor-financed health initiatives in Africa during the termination of their funding security and identifying the factors that helped them to keep going or prevented their further functioning. The study protocol was developed, followed by a systematic review in which the researchers conducted a search in databases, including Google Scholar, PubMed, and Medline, between January 27 th and February 15, 2022. A total of nine articles out of the initially retrieved 4,876 papers passed the inclusion criteria due to the removal of duplicates. The review listed some of the drivers of sustainability to include a actively involved community through a stakeholder representation in both the implementation and planning processes, utilization of local resources, effective infrastructure, and application of interdisciplinary team to facilitate capacity building. Conversely, the major obstacles to sustainability were frail health systems that were characterized by poor documentation and integration, poor financial leadership, scarce resources, political influence, poor feedbacks, as well as, lack of participation between donors and communities.

Conceptual Framework

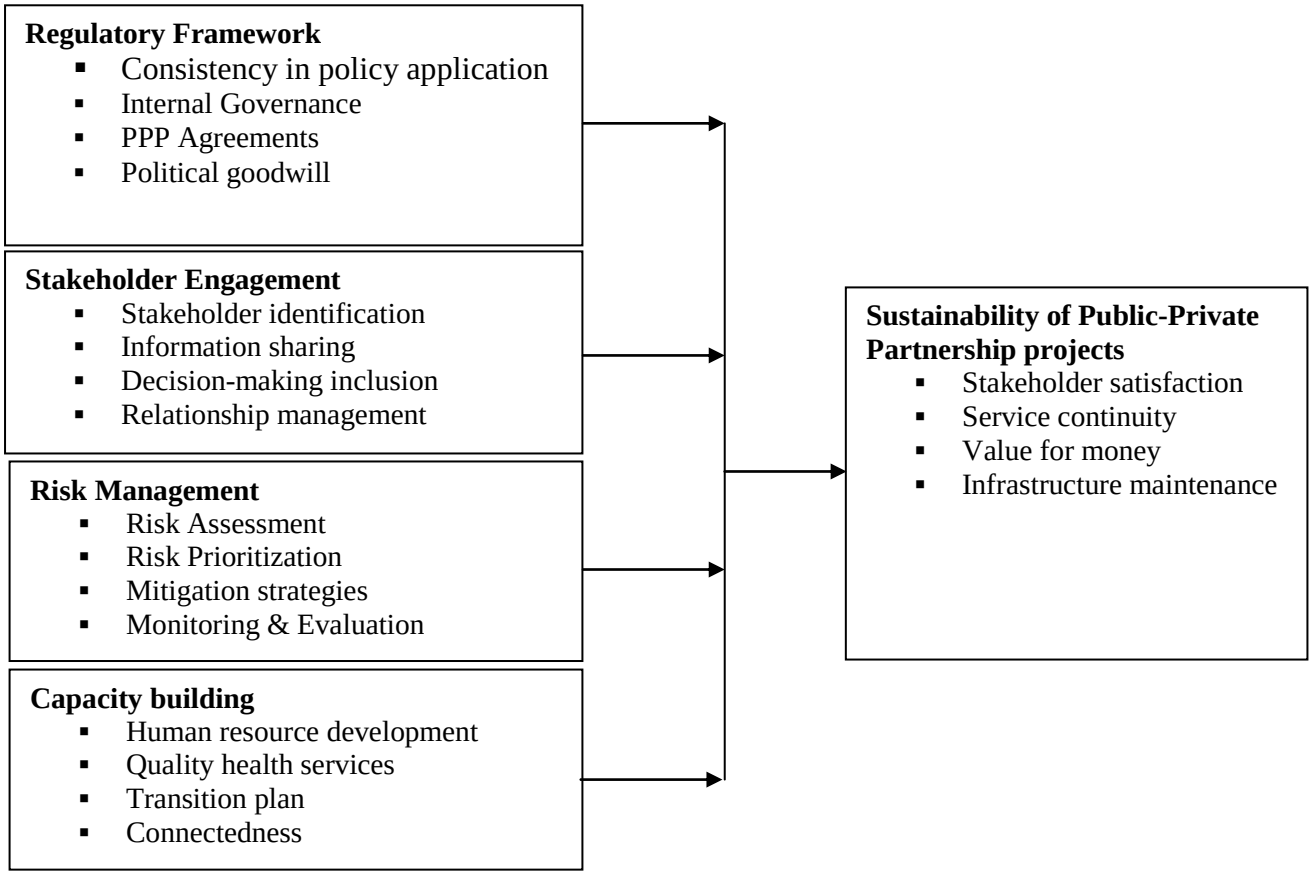

Figure 1: Conceptual Framework
Source: Author (2025)

METHODOLOGY

This study adopted both descriptive and explanatory research designs, which were appropriate for exploring the interconnection among variables and for explaining the CSFs that impact the sustainability of Public-Private Partnership (PPP) projects.

This study constituted a small population hence census was applied. This implied that all 72 top managers and departmental heads would be the study respondents. Neuman (2021) states that a census entails gathering data from every individual within a population, ensuring a comprehensive and precise representation.

Self-administered questionnaires were used to collect primary data in this study. The pilot study for this research was undertaken in Tans-Nzoia County which shares the same ecological location with Uasin Gishu County. As a result, questionnaires were administered to seven top managers at Kiminini Subcounty Tier-4 Hospital.

Validity is crucial for any study as it directly impacts the integrity and credibility of the research. Without it, the research findings may not accurately represent the phenomena being studied, thereby making the results and conclusions unreliable. Face validity, a form of validity, relates to the extent to which a test or measure appears, on its face, to assess the construct it is supposed to assess. It is the most basic type of validity and it is determined by expert judgment. In the current study, face validity will be ensured through expert judgment. To ensure accurate measurement of the variables, experts in the field reviewed and expressed judgement about the instruments and methods in the study.

Cronbach's Alpha coefficient was analyzed in this study as it is one of the most widely recognized methods for evaluating the internal consistency of research instruments. A Cronbach's Alpha value of 0.7 was be used as the acceptable threshold for reliability. The reliability coefficients was calculated using fully completed pilot questionnaires, administered in Trans-Nzoia County.

Data analysis was conducted using the Statistical Package for Social Sciences (SPSS), version 25.0. All completed questionnaires were reviewed before analysis, and the responses coded to facilitate data entry. The results were presented in tabular form and included descriptive statistics such as frequencies, means, standard deviations, and percentages. Means and standard deviations were specifically used to interpret the descriptive data. For inferential analysis, the study employed both correlation analysis and linear regression. Linear regression will be particularly useful in examining the influence of independent variables on the dependent variable. The regression model to be used in the study is as follows:

$$Ý=\beta_0+\beta_1 \chi_1+\beta_2\chi_2+ \beta_{3\chi3}+ \beta_4\chi_4+e_t$$

Where:

Ý= dependent variable (Sustainability of Public-Private Partnership project)

$X_1, X_2, X_3, X_4,$ are independent variables

X_1= Regulatory framework

X_2= Stakeholder engagement

X_3= Risk management

X_4= Capacity Building

e_t= Error term

β_0 is the constant term, β_1, β_2, β_3, β_4 are the Beta coefficients

Before commencing the research, all required authorizations were secured. This includes ethical clearance and an introductory letter from KU. Additionally, a research permit was acquired from NACOSTI as well as approval from the Uasin Gishu County Government. Participants were provided with a letter indicating the main aim of the study and assuring them of the confidentiality of their opinions, allowing them to give informed consent.

FINDINGS AND DISCUSSIONS

Results of Descriptive Statistics

Regulatory Framework

Across the eight regulatory items, means ranged from 3.06 to 4.00 with standard deviations between 0.70–1.42, reflecting moderate dispersion (see Table 1). The overall scale mean was 3.56 (SD = 0.73; valid n = 71), indicating generally *agreeing* perceptions of the regulatory setting. Agreement was strongest for the need to improve the framework (R8; M = 4.00), and relatively high for being informed on signed agreements (R6; M = 3.81) and the impact of political goodwill (R7; M = 3.78). Mid-range agreement appeared for regulatory monitoring/support (R4; M = 3.58) and County-level agreements (R5; M = 3.64), while governance structure (R1; M = 3.06) and clear legal/policy guidance (R2; M = 3.19) trailed. Overall, respondents view the regulatory environment as workable but see clear room for strengthening governance clarity and policy guidance, a thread you can carry forward into recommendations.

Table 1: Descriptive Statistics for Regulatory Framework Items

Item	N	Mean	SD
R1. Regulatory: governance structure overseeing PPP	71	3.06	1.42
R2. Regulatory: clear legal & policy guidance	69	3.19	1.24
R3. Regulatory: framework supports sustainability	69	3.39	1.20
R4. Regulatory: regulators monitor & support	67	3.58	1.16
R5. Regulatory: agreements signed at County level	67	3.64	1.30
R6. Regulatory: facility informed on signed agreement	69	3.81	1.10
R7. Regulatory: political goodwill impacts implementation	69	3.78	1.12
R8. Regulatory: need to improve framework	67	4.00	0.70
Regulatory framework (mean scale)	71	**3.56**	**0.73**

Note. Scale: 1 = Strongly disagree … 5 = Strongly agree. Ns reflect valid responses per item; the overall mean scale is based on valid cases (n = 71).

The results showed that respondents generally agreed the regulatory framework supporting PPP health projects in Uasin Gishu County is functional, with a mean score of **3.56**. This indicates that while the existing legal and institutional structures are supportive, there are still noticeable gaps in governance clarity and policy implementation. The highest agreement was recorded on the need to improve the framework and the importance of political goodwill.

These findings suggest that PPP operations rely heavily on government commitment and consistent enforcement of regulations. Weaknesses in governance structures and unclear policies could reduce project accountability and efficiency. Thus, strengthening regulatory oversight and providing clear legal guidance would enhance the sustainability of PPP initiatives in the health sector.

These findings align with Johnstone (2024), who emphasized that clear, enforceable legal frameworks are crucial for successful PPP implementation. Similarly, the Kenya Healthcare Federation (2024) highlighted the importance of strong regulation and continuous monitoring to ensure accountability and mitigate risks. Deng et al. (2021) also ranked completeness of the legal framework among the top determinants of PPP success, confirming the importance of regulatory consistency observed in the current study. However, the results contrast with Maosa (2019), who reported that governance structures were the strongest predictor of PPP performance. In the present study, the regulatory framework was only moderately effective, suggesting that while national legislation exists, implementation at the county level remains uneven.

Stakeholder Engagement

The five stakeholder engagement items produced mean scores ranging from 3.35 to 3.46, with standard deviations between 1.28–1.39, indicating moderate variation across responses. The overall scale mean was 3.43 (SD = 1.00; valid n = 71), suggesting that participants generally *agreed* that engagement practices in Public–Private Partnerships (PPPs) were reasonably well implemented, though not uniformly strong. The highest-rated item was private involvement in decision-making (R3; M = 3.46), followed closely by being informed throughout the lifecycle (R1; M = 3.44) and open, transparent communication (R2; M = 3.43). Lower means were observed for addressing stakeholder interests/concerns (R4; M = 3.35) and having client feedback mechanisms (R5; M = 3.42). These findings indicate that while engagement efforts are fairly consistent, feedback and two-way communication mechanisms could be strengthened to promote inclusivity and trust in PPP management processes.

Table 2: Descriptive Statistics for Stakeholder Engagement Items

Item	N	Mean	SD
R1. Stakeholder ENG: informed through lifecycle	71	3.44	1.28
R2. Stakeholder ENG: open transparent communication	69	3.43	1.37
R3. Stakeholder ENG: private involved in decisions	70	3.46	1.34
R4. Stakeholder ENG: interests/concerns addressed	69	3.35	1.35
R5. Stakeholder ENG: client feedback mechanism	69	3.42	1.39
Stakeholder engagement (mean scale)	71	**3.43**	**1.00**

Note. Scale: 1 = Strongly disagree … 5 = Strongly agree. Ns reflect valid responses per item; the mean scale is based on valid cases (n = 71).

Stakeholder engagement scored a mean of 3.43, indicating moderate agreement that engagement practices are in place but not uniformly strong. Respondents recognized transparency and communication between partners as fair, but they expressed concern over weak feedback mechanisms and limited involvement in decision-making processes.

This implies that while there are efforts to include key stakeholders—such as government officials, private partners, and community representatives—participation remains somewhat top-down. Effective stakeholder engagement should emphasize two-way communication, inclusivity, and collaborative decision-making to foster trust, transparency, and ownership among all parties.

The results corroborate earlier studies by Khan (2019) and King'ori (2022), which found that limited stakeholder involvement impedes PPP performance and sustainability. Nyakundi (2020) also observed weak consultation and engagement structures in HIV and AIDS projects, underscoring the need for improved communication channels—similar to what this study found. The outcomes also align conceptually with Stakeholder Theory (Freeman, 1984), which advocates for inclusive participation of all parties for project continuity. Conversely, the results differ from Sadeghi (2020), who reported stronger stakeholder participation in Iran's PPP hospital projects. This contrast indicates that while stakeholder involvement is recognized as important in Kenya, its implementation remains less structured compared to global best practices.

Risk Management

The five risk management indicators showed mean scores between 2.99 and 3.44, with standard deviations from 0.80–1.37, reflecting moderate variability in perceptions across respondents. The overall scale mean was 3.24 (SD = 0.77; valid n = 71), suggesting a generally *neutral-to-agreeing* stance toward the effectiveness of risk management in PPP implementation. The strongest area was having contingency plans in place (R3; M = 3.44, SD = 1.37), closely followed by use of findings to improve projects (R4; M = 3.42, SD = 1.31) and communication of identified risks (R5; M = 3.31, SD = 0.80). Comparatively lower means were seen for early identification of risks (R1; M = 2.99, SD = 1.13) and clarity of fair risk-sharing (R2; M = 3.01, SD = 1.12). These results imply that while risk handling mechanisms exist, early identification and equitable allocation of risk remain weaker points, suggesting the need for clearer documentation and proactive mitigation frameworks.

Table 3: Descriptive Statistics for Risk Management Items

Item	N	Mean	SD
R1. Risk Mgt: risks identified at beginning	71	2.99	1.13
R2. Risk Mgt: risk-sharing fair & clear	69	3.01	1.12
R3. Risk Mgt: contingency plans	68	3.44	1.37
R4. Risk Mgt: findings used to improve projects	69	3.42	1.31
R5. Are identified risks documented and communicated to all relevant stakeholders?	71	3.31	0.80
Risk Management (Mean Scale)	71	**3.24**	**0.77**

Note. Scale: 1 = Strongly disagree … 5 = Strongly agree. Ns reflect valid responses per item; the mean scale is based on valid cases (n = 71).

The study found that risk management practices were moderately implemented, with a mean score of **3.24**. Respondents agreed that some risk identification and contingency planning mechanisms exist, but these are inconsistently applied across different projects. Communication about risks and their mitigation remains limited.

This indicates that although PPP stakeholders acknowledge the importance of managing risks, practical implementation is often fragmented. For sustainability, risk management should be systematic—covering identification, allocation, mitigation, and monitoring. Strengthening risk-sharing agreements between public and private partners could improve confidence and reduce project uncertainties.

These findings are in agreement with Burke (2023) and Edwards (2021), who argued that structured risk identification and monitoring are essential for sustaining PPP projects. Similarly, Mwange (2023) found that strategic risk planning and governance enhance PPP outcomes, consistent with the current study's emphasis on the need for clear risk-sharing frameworks. Nzioka (2023) also reported that risk-sharing processes significantly influence healthcare service delivery, which aligns with the present findings. However, the results contrast with Dogan (2024), whose research in Turkey found risk management to be a major determinant of PPP performance. In the Kenyan context, risk management was perceived as only moderately effective, highlighting the difference in institutional capacity and experience between developing and developed PPP systems.

Capacity Building

The five capacity building indicators recorded mean values ranging from 3.22 to 3.76, with standard deviations between 1.09–1.24, suggesting moderate variability across responses. The overall scale mean was 3.46 (SD = 0.83; valid n = 69), reflecting an overall *agreeing* perception that capacity building efforts have contributed positively to PPP performance. The highest rating was observed for capacity initiatives strengthening partnerships (R5; M = 3.76, SD = 1.22), followed by adequate skilled personnel (R4; M = 3.49, SD = 1.18) and initiatives improving efficiency (R1; M = 3.42, SD = 1.09). Slightly lower averages were seen for existence of formal transition plans (R2; M = 3.40, SD = 1.17) and training of both partners (R3; M = 3.22, SD = 1.24). These findings indicate that while capacity-building programs are generally effective, there remains a need for more structured training and transition planning to ensure institutional sustainability of PPP initiatives.

Table 4: Descriptive Statistics for Capacity Building Items

Item	N	Mean	SD
R1. Capacity: initiatives improve efficiency	69	3.42	1.09
R2. Capacity: formal transition plan	68	3.40	1.17
R3. Capacity: both partners trained	67	3.22	1.24
R4. Capacity: enough skilled personnel	68	3.49	1.18
R5. Capacity: outcomes strengthen partnerships	68	3.76	1.22
Capacity building (mean scale)	69	**3.46**	**0.83**

Note. Scale: 1 = Strongly disagree … 5 = Strongly agree. Ns reflect valid responses per item; the mean scale is based on valid cases (n = 69).

Capacity building achieved a relatively strong mean score of approximately **3.5**, showing that most respondents recognized its importance in sustaining PPP health projects. Respondents agreed that training programs, human resource development, and institutional strengthening are key to effective project implementation. However, they also noted that such initiatives are irregular and underfunded.

This finding underscore that the success of PPP projects depends not only on infrastructure or financing but also on the competencies of personnel managing them. Continuous training, mentorship, and institutional support are therefore critical to enhancing performance and ensuring project continuity beyond private-sector involvement.

This outcome strongly supports Kirunga and Kirima (2024), who identified capacity building as the strongest predictor of PPP sustainability in Kenya. It also aligns with Chileshe et al. (2021), who highlighted the lack of training and local expertise as major barriers to PPP success, and Martin (2024), who emphasized that knowledge sharing and institutional strengthening enhance project effectiveness. In contrast, Chileshe (2022) ranked regulatory frameworks and financing structures above capacity building as key success factors. The current study, however, found that capacity building plays a relatively stronger role in the sustainability of PPP health projects in the devolved context of Uasin Gishu County, where human capital and institutional competencies remain central to project success.

Results of Inferential Statistics

Pearson Correlations

Bivariate correlations among the composites indicated moderate-to-strong positive interrelations among the critical success factors (CSFs): Regulatory framework correlated with stakeholder engagement, risk management, and capacity building at $r = .585–.749$, $p < .001$; stakeholder engagement correlated with risk management and capacity building at $r = .541–.591$, $p < .001$; and risk management correlated with capacity building at $r = .589$, $p < .001$ (see Table 4.5.2). Importantly, the sustainability composite was coded 1 = true, 2 = false (lower scores reflect greater sustainability). Accordingly, negative correlations indicate that higher CSF scores are associated with greater endorsement of sustainability indicators. Sustainability was significantly associated with regulatory framework ($r = −.274$, $p = .023$) and stakeholder engagement ($r = −.327$, $p = .006$), while associations with risk management ($r = −.157$, $p = .196$) and capacity building ($r = −.165$, $p = .179$) were not statistically significant.

Table 5: Correlations of Main Study Constructs

Study Constructs	1	2	3	4	5
1. Regulatory framework					
2. Stakeholder engagement	.585**				
3. Risk management	.686**	.541**			
4. Capacity building	.749**	.591**	.589**		
5. Sustainability	-.274*	-.327**	-0.157	-0.165	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Multiple Regression Results

A two-block hierarchical OLS regression was estimated with Sustainability (DV mean; 1 = True, 2 = False) as the outcome. Model 1 entered demographic controls (age, cadre, tenure dummies; reference categories as specified). The model was not significant, $F(12, 53) = 1.27$, $p = .264$, with $R^2 = .223$ (adjusted $R^2 = .047$, see Table 4.5.3.1). The model summary indicated that Model 2 improved explained variance from $R^2 = .223$ to $R^2 = .327$ ($\Delta R^2 = .103$), with a reduction in the standard error of the estimate (from .266 to .258).

Table 6: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
Model 1 (Controls)	0.473	0.223	0.047	0.266	0.223	1.270	12	53	0.264
Model 2 (+ Predictors)	0.571	0.327	0.107	0.258	0.103	1.878	4	49	0.129

Notes. Dependent variable: Sustainability (DV mean scale). Model 1 predictors: tenure_d4, cadre_d4, age_d4, cadre_d6, age_d1, cadre_d5, age_d2, cadre_d2, tenure_d2, cadre_d3, age_d5, tenure_d3. Model 2 adds: Risk management (mean scale), Stakeholder engagement (mean scale), Capacity building (mean scale), Regulatory framework (mean scale).

The *F*-change tests suggested that the additional predictors yielded a non-significant increment in fit ($F = 1.878$, $df = 4, 49$, $p = .129$), consistent with the ANOVA results (Model 2 overall: $F = 1.485$, $p = .144$, see Table 4.511).

Table 7: Analysis of Variance (ANOVA)

Model	Source	SS	df	MS	F	Sig.
Model 1 (Controls)	Regression	1.078	12	0.090	1.270	0.264
Model 1 (Controls)	Residual	3.751	53	0.071		
Model 1 (Controls)	Total	4.830	65			
Model 2 (+ Predictors)	Regression	1.577	16	0.099	1.485	0.144
Model 2 (+ Predictors)	Residual	3.253	49	0.066		
Model 2 (+ Predictors)	Total	4.830	65			

Notes. ANOVA tables correspond to the regression models above. 'Sig.' denotes p-values.

Within controls, only Cadre (Lab tech vs. reference) showed a significant effect ($B = −.383$, $SE = .169$, $\beta = −.338$, $p = .027$), implying greater sustainability endorsement (lower DV score) for laboratory technicians relative to the reference cadre (medical doctor). Among CSFs, Stakeholder engagement showed a trend-level association with greater sustainability endorsement ($B = −.091$, $SE = .045$, $\beta = −.334$, 95% CI [−.182, .000], $p = .051$, see Table 4.5.3.3). Regulatory framework ($B = −.050$, $p = .560$), Risk management ($B = −.023$, $p = .725$), and Capacity building ($B = .051$, $p = .434$) were not significant. Below is the regression equation. Below is the regression equation:

$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e_t$

Where:
$\hat{Y}$ = Sustainability of Public-Private Partnership projects
X_1 = Regulatory Framework
X_2 = Stakeholder Engagement
X_3 = Risk Management
X_4 = Capacity Building
e_t = Error term
β_0 = Constant term (intercept)
β_1, β_2, β_3, β_4 = Regression coefficients

Estimated Model

Based on the regression results, the estimated model was expressed as:

$\hat{Y} = 1.298 - 0.050X_1 - 0.091X_2 - 0.023X_3 + 0.051X_4 + e_t$

α = Constant coefficient – 1.298

The fitted equation indicates that, after accounting for age, role, and tenure, the four implementation factors nudge sustainability only modestly: capacity building aligns with slightly higher sustainability, while stakeholder engagement shows a small negative association, often a sign of reactive or low-follow-through engagement rather than a true drag on performance, and regulatory framework and risk management carry slight negatives that likely reflect procedural burden or "catch-up" documentation where projects are already under pressure. The standout signal is a cadre-specific shortfall (Lab tech performing lower than the reference group of medical doctors), pointing to role-targeted fixes as the most immediate lever. Practically, the results argue for focused support to the underperforming cadre, shifting engagement from volume to issue-closure and timeliness, streamlining compliance and risk routines, and prioritizing hands-on capacity that protects day-to-day continuity.

The multiple regression analysis sought to establish the combined influence of the identified critical success factors on the sustainability of Public–Private Partnership projects in the health sector in Uasin Gishu County. The results showed that while the predictors—Regulatory framework, Stakeholder Engagement, Risk Management and Capacity Building—jointly explained a modest proportion of the variation in project sustainability, the overall model was not statistically significant at the 0.05 level. Among the predictors, Capacity Building exhibited a positive relationship with sustainability, whereas the other factors showed negative associations. These findings imply that although the examined success factors contribute to sustainability, their effects may be influenced by contextual conditions, institutional practices, or interaction effects not captured in the model. Consequently, the results underscore the need for further investigation using larger samples and complementary qualitative approaches to gain deeper insights into the determinants of sustainable PPP projects in the health sector.

Relationship between the Findings and the Theoretical Framework

The study anchors in Transaction Cost Theory (TCT) and Stakeholder Theory, arguing that regulatory clarity, inclusive engagement, risk governance, and capacity strengthening jointly support the sustainability of PPP health projects. The conceptual framework specifies these as the critical success factors (CSFs) influencing sustainability outcomes, stakeholder satisfaction, service continuity, infrastructure maintenance, and value for money. TCT posits that organizations select and manage governance arrangements to reduce the costs of negotiating, monitoring, and enforcing exchanges under uncertainty. In PPP health projects, regulatory frameworks lower uncertainty by setting rules, roles, and oversight; stakeholder engagement reduces bargaining and enforcement frictions through shared information and trust; risk management allocates risks to

parties best able to manage them, thereby reducing dispute and monitoring costs; and capacity building lowers coordination costs by strengthening institutional and technical capabilities.

Table 8: Hierarchical Regression Predicting Sustainability

Predictor	*B*	*SE B*	β	*t*	*p*	95% CI for *B*
Model 1 (Controls)						
Constant	1.298	.145	—	8.95	<.001	[1.007, 1.589]
Age dummies (ref = Age 35–44)						
Age 18–24	.247	.180	.218	1.37	.177	[−.115, .608]
Age 25–34	.101	.094	.152	1.07	.291	[−.089, .290]
Age 45–54	−.038	.097	−.055	−0.39	.699	[−.232, .157]
Age 55+	.233	.205	.248	1.14	.261	[−.179, .645]
Cadre dummies (ref = Medical Doctor)						
Nurse	−.047	.107	−.079	−0.44	.660	[−.261, .167]
Clinical officer	.047	.109	.081	0.43	.668	[−.172, .266]
Public health	−.106	.126	−.135	−0.85	.401	[−.359, .146]
Pharm tech	−.014	.183	−.010	−0.08	.941	[−.380, .353]
Lab tech	−.383	.169	−.338	−2.27	.027	[−.722, −.044]
Tenure dummies (ref = 0–5 yrs.)						
6–10 yrs.	.026	.130	.045	0.20	.843	[−.234, .286]
11–15 yrs.	.094	.134	.168	0.70	.488	[−.175, .362]
>15 yrs.	.036	.194	.041	0.18	.854	[−.354, .425]
Model fit: R^2 = .223; adj. R^2 = .047; $F(12, 53)$ = 1.27, p = .264						
Model 2 (Controls + CSFs)						
Constant	1.738	.274	—	6.35	<.001	[1.188, 2.289]
(All controls retained; see Model 1)						
Regulatory framework (mean)	−.050	.085	−.132	−0.59	.560	[−.222, .121]
Stakeholder engagement (mean)	−.091	.045	−.334	−2.00	.051	[−.182, .000]
Risk management (mean)	−.023	.066	−.066	−0.35	.725	[−.156, .109]
Capacity building (mean)	.051	.064	.156	0.79	.434	[−.079, .180]

Note. Sustainability coded 1 = True (greater endorsement), 2 = False; negative *B*/*β* values therefore indicate greater sustainability.

The empirical results align with these propositions in two ways. First, the significant bivariate associations between sustainability and both regulatory framework (r = −.274, p = .023) and stakeholder engagement (r = −.327, p = .006) indicate that stronger rules/oversight and more inclusive engagement co-occur with greater endorsement of sustainability indicators (lower DV score), consistent with TCT's prediction that clearer governance and lower sustained performance. Second, the absence of strong incremental effects for risk management and capacity building in the multivariable model, despite their moderate positive levels in descriptive, may reflect implementation heterogeneity documented in the instrument and context (e.g., infrequent formal risk assessments and sporadic training), which would blunt their cost-reducing benefits at system level.

Stakeholder Theory holds that sustained project success depends on identifying, engaging, and addressing the interests of all salient parties throughout the project lifecycle. The approved thesis links this to PPP health projects by emphasizing inclusive decision-making, transparent communication, and relationship

management, supported by enabling regulation and capacity development. The study's findings mirror this logic. The negative correlation between stakeholder engagement and the sustainability DV (coded 1 = "True") suggests that higher engagement is associated with more frequently met sustainability indicators, a result that remains directionally evident in the regression ($\beta = -.334$, $p \approx .051$). At the same time, descriptive evidence that direct client/beneficiary involvement is relatively low signals an engagement gap that Stakeholder Theory would expect to attenuate sustainability gains, an interpretation consistent with the thesis's qualitative synthesis and with observed reliance on institution-centric channels.

The pattern that regulatory clarity and stakeholder engagement are the most consistently connected to sustainability is congruent with the thesis's conceptual model and literature review, which highlight regulatory completeness, oversight, and inclusive participation as recurrent facilitators of sustained PPP outcomes. Regional and Kenyan evidence cited in the proposal similarly reports material roles for regulation, engagement, and capacity in sustaining PPP performance, while noting capacity and procedural unevenness as common constraints.

Implications for theory and practice. Taken together, the results support a complementary reading of TCT and Stakeholder Theory for PPP health projects in Uasin Gishu County. Where rules are clearer and stakeholders are more engaged, transaction and coordination frictions are lower, and sustainability indicators are more likely to be met, consistent with both theories.

Conversely, episodic risk assessment and limited, non-routine capacity building, as documented in the instrument and descriptive findings, suggest pathways through which the cost-reducing and inclusion-enhancing mechanisms remain partially realized, helping explain weaker statistical signals for those constructs in multivariable models. Strengthening routine risk processes and institutionalized training therefore remains theoretically warranted by TCT (lowering monitoring/enforcement costs) and Stakeholder Theory (improving meaningful participation and shared accountability).

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to determine how various critical success factors influence the sustainability of PPP projects in the health sector. The study employed a descriptive research design and targeted management and technical staff engaged in PPP health projects in Uasin Gishu County. Data were collected through structured questionnaires and analyzed using descriptive and inferential statistics.

The study revealed that the regulatory framework significantly influences the sustainability of PPP projects. Respondents agreed that the existence of clear policies, standardized procedures, and effective legal frameworks enhances accountability and transparency in project implementation. The findings further showed that policy consistency, timely review of contractual agreements, and adherence to national PPP guidelines improve the long-term viability of health infrastructure projects.

The study established that stakeholder engagement has a strong positive effect on PPP sustainability. Effective collaboration among government agencies, private investors, community representatives, and healthcare professionals was shown to promote trust, ownership, and collective responsibility. Regular communication, involvement in decision-making, and conflict resolution mechanisms were key factors enhancing the sustainability of projects.

The study found that risk management practices moderately influence PPP sustainability. Proper identification, assessment, and mitigation of financial, operational, and political risks ensure that projects remain stable throughout their life cycle. The findings suggested that projects with defined risk-sharing agreements, contingency plans, and flexible financial models are better able to adapt to unexpected challenges and maintain service continuity.

The results indicated that capacity building strongly contributes to PPP project sustainability. Continuous training and development of both public and private sector staff improve technical competence and managerial efficiency. Capacity enhancement initiatives in areas such as project planning, contract management, and monitoring and evaluation were found to strengthen institutional readiness for PPP operations and long-term maintenance.

Overall, the findings of this study corroborate the majority of previous research, reaffirming that a strong regulatory framework, effective stakeholder engagement, sound risk management, and robust capacity building are fundamental determinants of PPP project sustainability. However, the degree of influence varies, with the present study emphasizing that capacity building and stakeholder engagement exert greater impact within the local Kenyan context compared to earlier international studies that prioritized legal and financial frameworks.

This variation highlights that while Kenya has developed comprehensive PPP laws and guidelines, implementation gaps—particularly in stakeholder inclusion, risk-sharing, and human capacity development—still hinder full sustainability. Strengthening these dimensions could therefore enhance the long-term viability and effectiveness of PPP health projects across counties.

It is concluded that a well-defined and consistently enforced regulatory framework forms the foundation for sustainable PPP projects. Proper governance structures, adherence to legal provisions, and transparent oversight mechanisms are essential for effective project management and accountability.

The study concludes that active stakeholder participation ensures inclusivity, builds public confidence, and enhances commitment to project goals. The sustainability of health PPPs is dependent on meaningful dialogue, transparency, and coordination among all involved stakeholders.

The research concludes that structured risk management strategies safeguard PPP projects against uncertainties that could compromise sustainability. Proper allocation of risks between partners reduces financial exposure and promotes long-term project stability.

The study concludes that capacity building is a vital enabler of PPP sustainability. Skilled and knowledgeable personnel can efficiently oversee project implementation, manage resources, and ensure that health facilities continue to deliver quality services after the project handover.

Based on the findings and conclusions, the following recommendations are made to enhance the sustainability of PPP projects in the health sector.

The national and county governments should strengthen the PPP regulatory framework by ensuring policy consistency, clear legal provisions, and periodic reviews of contractual guidelines. Legislative amendments should also be considered to streamline approval processes and improve regulatory oversight.

PPP implementers should institutionalize participatory frameworks that allow continuous stakeholder consultation throughout all project phases. Mechanisms for conflict resolution, transparency in communication, and joint monitoring should be emphasized to foster trust and accountability.

Project planners should develop comprehensive risk management frameworks, including tools for early identification and mitigation of financial, political, and operational risks. Risk-sharing models should be clearly stipulated in contracts to ensure fairness and sustainability.

Regular training programs should be established for public health administrators and PPP coordinators to improve their technical, financial, and managerial skills. Partnerships with academic institutions and professional bodies should be encouraged to support continuous professional development.

Suggestions for Further Studies

The study recommends that future research should be conducted in other counties and sectors, such as energy, transport, and education, to compare how critical success factors influence PPP sustainability across various contexts. Further studies could also examine the mediating role of governance and innovation on the relationship between PPP frameworks and project outcomes. A longitudinal study approach could provide deeper insights into the long-term impact of PPP models on healthcare service delivery and community welfare.

REFERENCES

Amović, G., Maksimović, R., & Bunčić, S. (2020). Critical success factors for sustainable public-private partnership (PPP) in transition conditions: An empirical study in Bosnia and Herzegovina. *Sustainability*, *12*(17), 7121.

Burke, R. (2023), Project Management-Planning and Control Techniques (Fourth Edition) Chichester: John Wiley & Sons Ltd.

Chepkonga, P., & Nyaga, J.G. (2019). Leadership Style, Culture and Service Delivery in Public Health Sector: A Case Study of Mbagathi District Hospital, Nairobi City County.

Chileshe, N., Kavishe, N., & Edwards, D. J. (2021). Identification of critical capacity building challenges in public-private partnerships (PPPs) projects: the case of Tanzania. *International Journal of Construction Management*, *23*(3), 495–504. https://doi.org/10.1080/15623599.2021.1892947

Chileshe, Nicholas & Njau, Carol & Kiptoo, Brian & Macharia, Lyn & Kavishe, Neema. (2020). Critical success factors for Public-Private Partnership (PPP) infrastructure and housing projects in Kenya. International Journal of Construction Management. 22. 1-12. 10.1080/15623599.2020.1736835.

Cirolia, L. R. (2020) Fractured fiscal authority and fragmented infrastructures: Financing sustainable urban development in Sub-Saharan Africa. Habitat International, 10(4); 102- 123.

Dogan Erdem, T., Birgonul, Z., Bilgin, G., & Akcay, E. C. (2024). Exploring the Critical Risk Factors of Public–Private Partnership City Hospital Projects in Turkey. *Buildings*, *14*(2), 498. https://doi.org/10.3390/buildings14020498

Edwards, Benjamin, Supreme Risk (August 18, 2021). Benjamin P. Edwards, Supreme Risk, 74 Fla. L. Rev. 543 (2022), Available at SSRN: https://ssrn.com/abstract=3907534 or http://dx.doi.org/10.2139/ssrn.3907534

Freeman, R. & Mcvea, John. (2001). A Stakeholder Approach to Strategic Management. SSRN Electronic Journal. 10.2139/ssrn.263511.

Ilesanmi OS, Afolabi AA. Sustainability of Donor-Funded Health-Related Programs Beyond the Funding Lifecycle in Africa: A Systematic Review. Cureus. 2022 May 1;14(5):e24643. doi: 10.7759/cureus.24643. PMID: 35663674; PMCID: PMC9156348.

Johnstone, R (2024): Regulation; Enforcement and Compliance

Kanakoudis, V., Papotis, A., Sanopoulos, A., & Gkoutzios, V. (2007). Crucial parameters for PPP projects successful planning and implementation (pp. 167-184).

Karnes, Y. (2020). Are There Optimal Forms of Public-Private Partnerships? *Journal of Behavioral and Applied Management, 20* (2), 51-68.

Kenya Healthcare Federation (2024): Public Private Partnerships Committee of Kenya Healthcare Federation; defining PPP. https://khf.co.ke/public-private-partnership/

Khan, N. N., & Puthussery, S. (2019). Stakeholder perspectives on public-private partnership in health service delivery in Sindh province of Pakistan: a qualitative study. *Public health*, *170*, 1–9. https://doi.org/10.1016/j.puhe.2019.02.004

Kim, J. H. (2019). Multicollinearity and misleading statistical results. *Korean Journal of Anesthesiology*, *72*(6), 558. https://doi.org/10.4097/kja.19087

King'ori (2022): Stakeholders' Participation and Performance of Medical Managed Equipment's Services Project in Nairobi County, Kenya

Kirunga, J. N., & Nteere, K. K. (2024). Public Private Partnerships And Sustainability Of Healthcare Infrastructure Projects In Isiolo County, Kenya. *International Journal Of Social Sciences Management And Entrepreneurship (Ijssme)*, *8*(3).

Kolesnikov, Y. A., Pavlyuk, A. V., Radachinsky, Y. N., & Rodionova, N. D. (2018). Problems of implementation of public-private partnership in Russia.

Maosa (2019): factors influencing performance of public-private partnerships in healthcare provision in Kenya; the case of Nyamira County.

Miseda, J. O. (2020). Analysis of critical success factors for Health Public-Private Partnerships: A case of the Managed Equipment Services (MES) in Narok County [Thesis, Strathmore University].

Moore A, Bertotti M, Hanafiah A, Hayes D. Factors affecting the sustainability of community mental health assets: A systematic review. Health Soc Care Community. 2022 Nov;30(6):e3369-e3383. doi: 10.1111/hsc.13929. Epub 2022 Jul 28. PMID: 35900123; PMCID: PMC10087471.

Mutuku, K. M. (2023) The Contribution of Public-Private Partnership to Agribusiness in Kenya: A Case Study of Fruit Processing Enterprises. *International Journal of Research and Innovation in Social Science, 7(3), 316-327.*

Mwange, A. (2023). Determinants of Public-Private Partnership Success in The Health Sector in Zambia: Key Success Variables Analysis. Research Journal of Finance and Accounting. 14. 2023. 10.7176/RJFA/14-15-04.

Neuman, W. L. (2008). Social Research Methods: Qualitative and Quantitative Approaches. Istanbul: Yayinodasi.

Njoroge, M. W. (2019). Effect of Public Private Partnership on Efficiency of Healthcare Services Delivery in Kenyan Public Hospitals: A Case of Public Hospitals in Kiambu County (Doctoral dissertation, United States International University-Africa).

Nyakundi (2020): Stakeholder engagement and management as a determinant of health intervention outcomes: the varied messages communicated during HIV and aids interventions in Kisii county, Kenya. https://doi.org/10.1079/PAVSNNR202116029

Nzioka (2023): Influence of public-private partnership on healthcare service delivery in Nairobi County, Kenya.

Sadeghi, A., Barati, O., Bastani, P. *et al*. Feasibility of implementing public–private partnership (PPP) in the development of hospital services and optimizing resource allocation in Iran. *Cost Eff Resour Alloc* 18, 25 (2020). https://doi.org/10.1186/s12962-020-00221-z

World Bank. (2018, February). Public-Private Partnerships in Developing Countries: The Emerging Evidence-based Critique. *Oxford University Press, 33*(1).

World Bank (2024): Public-Private Partnership in Health https://ppp.worldbank.org/public-private-partnership/ppp-health

Xiaohong, L. (2023). Addressing Challenges and Enhancing Sustainability in Public Private Partnerships (PPPs) in China. *Journal of Digitainability, Realism & Mastery (DREAM), 2*(04), 24-28.