PUBLIC PRIVATE PARTNERSHIP AND SUSTAINABLE DEVELOPMENT IN MURANG'A COUNTY, KENYA

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DECLARATION

I declare that this dissertation is my original work that has not been previously published or submitted elsewhere for award of degree. I also declare that this contains no material written or published by other people except where due reference and author duly acknowledged.

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And have certified that all the revisions that the dissertation panel and examiners recommended have been adequately addressed.

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ABSTRACT

Sustainable development is a complex and challenging issue. However, it is an important goal that all countries and counties must strive to achieve. The county government of Murang'a is committed to sustainable development. The county has developed a number of policies and programs to promote sustainable development. These include the Murang'a County Integrated Development Plan (2018-2022), the Murang'a County Green Growth Plan (2018-2030), and the Murang'a County Climate Change Action Plan (2018-2030). The county government is working with a number of partners, including the private sector, civil society, and the international community, to achieve its sustainable development goals. The objective of this research was to assess the effect of public private partnership on sustainable development in Murang'a County, Kenya. The specific objectives were; to determine the effect of project financing on sustainable development, to establish the effect of project service quality on sustainable development, to assess the effect of project governance on sustainable development and to determine the effect of project environmental sustainability on sustainable development of Murang'a County, Kenya. The research was based on three theories namely; the institutional theory, stakeholder theory, and systems theory. Descriptive research design was employed in this study. The target population of this study was the 10 PPP projects that have been implemented in Murang'a County as at August 2023. The unit of observation were the county government officials and private sectors partners for each PPP project. Census was used in this study where all the 10 PPP projects in Murang'a County were involved in this study. Questionnaire were utilized in primary data collection. Quantitative data was collected. The collected data was analysed through descriptive, correlational and multiple linear regression method. Regression results revealed that project financing, project service quality, project governance, and project environmental sustainability together account for 93.5% of the variation in the sustainable development in Murang'a County, Kenya. The explanatory power of the model was statistically significant as the p value was 0.000. Further the results revealed that project financing ($\beta = 0.326$, $p < 0.000$); project service quality ($\beta = 0.273$, $p < 0.000$); project governance ($\beta = 0.356$, $p = 0.004$); and project environmental sustainability ($\beta = 0.687$, $p < 0.000$) had a positive and significant effect on sustainable development in Murang'a County, Kenya. This study conclusively illustrates that project financing, service quality, governance, and environmental sustainability significantly influence sustainable development in Murang'a County, Kenya. Based on the findings, it is recommended that there should be an enhancement in project governance structures and financial management practices, rigorous adherence to environmental sustainability, and a relentless focus on improving service quality to ensure the successful implementation of sustainable development projects. Future research should consider diverse project types and settings, adopt longitudinal and experimental designs, and conduct more in-depth qualitative studies to explore the nuanced perspectives and experiences of project stakeholders.

Key words: Public private partnership, sustainable development, project financing, project service quality, project governance and project environmental sustainability

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DEDICATION

I dedicate this dissertation to my family, for their constant support during the duration of my studies. Their constant motivation, encouragement and understanding have been invaluable. Therefore, I thank you for being my pillars.

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ACRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variance
CLRM	Classical Linear Regression Model
ESG	Environmental, Social, and Governance
GDP	Gross Domestic Product
HDI	Human Development Index
KNBS	Kenya National Bureau of Statistics
PP	Public Participation
PPP	Public Private Partnership
SDG	Sustainable Development Goals
SPSS	Statistical Package for Social Sciences
WEF	Women Enterprise Fund

OPERATIONAL DEFINITION OF TERMS

Project environmental sustainability	Assesses the environmental impact and sustainability of PPP projects. They can include indicators such as carbon emissions, energy consumption and waste management practices, and adherence to environmental standards or certifications (Sharma, 2023).
Project financing	Assesses the financial viability, cost-effectiveness, and value for money of PPP projects. They include indicators such as project costs, revenue streams, financial returns (Ahmed, Dogara & Saleh, 2022).
Project governance	Evaluates the governance structure, decision-making processes, and transparency of PPP implementation (Debela, 2022).
Project service quality	Focuses on the quality and efficiency of services delivered through PPPs. They measure aspects such as service availability, accessibility, reliability, customer satisfaction, and compliance with service standards or benchmarks (Muhammad & Johar, 2019).

Public private partnership	Refers to a collaborative arrangement between the public sector and the private sector to jointly plan, finance, develop, and operate projects or deliver public services (Zhang, Shi & Ma, 2023).
Sustainable development	Refers to a holistic approach to societal progress that seeks to meet the needs of the present generation without compromising the ability of future generations to meet their own needs (Can & Ahmed, 2023).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Sustainable development is of paramount importance for both countries and counties in today's world. It encompasses the integration of economic growth, social progress, and environmental protection, with the goal of meeting the needs of the present generation without compromising the ability of future generations to meet their own needs (Can & Ahmed, 2023). In order to achieve long-term prosperity, sustainable development provides a framework that protects natural resources, lowers carbon emissions, and promotes social well-being (Al-Qudah, Al-Okaily & Alqudah, 2022). It also promotes resilience, innovation, and responsible resource management, creating opportunities for economic diversification, job creation, and enhanced quality of life. Ultimately, the pursuit of sustainable development is essential for the long-term survival, progress, and harmony of societies and the planet as a whole (Hailiang, Chau & Waqas, 2023).

Developing countries often face unique and complex circumstances that can hinder their sustainable development efforts. These difficulties include a lack of funding, poor infrastructure, weak institutions, and susceptibility to outside shocks (Alam, 2022). However, there are positive developments as well. Many developing countries have recognized the importance of sustainable development and have integrated it into their national policies and strategies. They are encouraging sustainable farming methods, applying conservation measures, and utilizing renewable energy sources more frequently (Bag, Gupta, & Kumar, 2021). In order to help poor nations, achieve sustainable development, there has also been a significant contribution from international cooperation

and partnerships. To make sure that sustainable development becomes a reality for all, however, there is still considerable work to be done to address poverty, inequality, climate change, and other urgent concerns (Sun & Razzaq, 2022).

Public-private partnerships (PPPs) have the potential to significantly contribute to sustainable development (Sharma, 2023). PPPs entail public and private sector cooperation to address development concerns and provide solutions that are advantageous to both parties. They may combine governmental resources, knowledge, and regulatory authority with private sector innovation, efficiency, and investment to take use of the strengths of both sectors (Gao, Ozturk & Ullah, 2023). PPPs can make it easier to undertake projects and programs that advance social inclusion, economic growth, and environmental sustainability in the framework of sustainable development. PPPs may encourage innovation, draw private sector participation, and guarantee the long-term viability of sustainable development programs by pooling resources, sharing risks, and aligning interests (Udeagha & Nicholas, 2023).

In the United States, PPPs have become more popular in a number of industries, including transportation, energy, water, and social infrastructure. There have been major PPP initiatives in recent years, including the development and management of toll roads, airports, and public buildings through collaborations between public and private organizations (Gifford, Bolaos, Daito, & Casady, 2023). By giving financing and launching programs like the Build America Bureau inside the Department of Transportation, the federal government has also promoted PPPs. PPPs have made it possible to build social infrastructure in the United States, including hospitals, schools, and projects for affordable

housing. These investments might increase social well-being and access to high-quality services, promoting sustainable development (Van Song et al., 2022).

In Malaysia, the government has demonstrated a rising interest in supporting PPPs. PPPs have the ability to fulfill infrastructure requirements, boost economic growth, and accomplish sustainable development objectives, according to the Malaysian government (Ismail, Mohamad, and Mohd Said, 2022). A number of PPP projects have been implemented, mainly in the fields of transportation, energy, and social infrastructure. For instance, the PPP-developed Kuala Lumpur Mass Rapid Transit project intends to enhance public transit while easing traffic congestion. As part of its vision for sustainable development, Malaysia has also demonstrated a commitment to renewable energy initiatives, such as solar and hydroelectric electricity (Muhammad & Johar, 2019).

In Nigeria, the government has acknowledged the potential of PPP to support sustainable development. The nation has struggled to draw in investments from the private sector and create efficient structures for PPP projects. However, initiatives have been undertaken to advance PPPs in industries including power, healthcare, transportation, and water resources (Ahmed, Dogara, & Saleh, 2022). PPP approaches, for instance, were used to build the Second Niger Bridge and the Lagos-Ibadan Expressway, both of which would strengthen the nation's transportation system. Additionally, the government has expressed interest in renewable energy projects and has put policies in place to entice private funding for solar and wind energy. Through the creation of organizations like the Infrastructure Concession Regulatory Commission, the Nigerian government has also made measures to improve the climate that supports PPPs (Owotemu, Daniel, & Abubakar, 2022).

The Kenyan government is aware of PPPs' potential to fill infrastructure shortages, spur economic expansion, and advance sustainable development objectives. A number of PPP projects have been implemented, mainly in the transportation, energy, water, and healthcare sectors (Kamau & Achuora, 2023). For instance, the PPP-developed standard gauge railway project between Nairobi and Mombasa intends to increase transportation effectiveness and promote economic growth. As part of its plan for sustainable development, Kenya has also demonstrated commitment to renewable energy projects, including geothermal and wind power (Mutuku, 2023).

In Murang'a, the county government has identified a number of industries where PPPs may be applied to enhance infrastructure, provide employment, and advance economic development. Water and sanitation, roads and transportation, agriculture and food security, health care, education, and tourism are some of these areas. Millions of people in Murang'a County can anticipate the PPP projects to improve their lives. They are anticipated to increase the availability of clean water, produce jobs, and stimulate economic growth. The county administration is dedicated to adopting PPPs to enhance the quality of life for its residents and to build a more prosperous future for the county (Murang'a County, 2023).

1.1.1 Public Private Partnership

A public-private partnership is a collaborative arrangement between the public sector (government or government agencies) and the private sector (businesses or private entities) to jointly plan, finance, develop, and operate projects or deliver public services (Akomea-Frimpong, Jin, Osei-Kyei & Kukah, 2023). PPPs are founded on a paradigm of shared responsibility and risk-sharing where both sectors contribute their unique

knowledge, resources, and capacities to accomplish shared goals. According to Zhang et al. (2023), these collaborations can involve a range of industries, including infrastructure development, healthcare, education, transportation, and energy. A PPP aims to combine the public sector's regulatory authority, public interest emphasis, and access to public money with the private sector's efficiency, creativity, and financial resources. The public and commercial entities engaged in the cooperation often sign a contract describing their respective obligations, roles, and risk allocations (Debela, 2022).

Public-private partnerships play a crucial role in addressing societal needs, fostering economic growth, and promoting sustainable development (Owotemu et al., 2022). PPPs combine the strengths of the public and private sectors, enabling effective resource allocation, creative solutions, and enhanced service delivery. PPPs are significant because they may correspond with the objectives and legal frameworks of the public sector while utilizing private sector experience, investment, and efficiency (Gifford et al., 2023). PPPs may speed up infrastructure construction, improve public services, and promote economic growth by pooling the resources and skills of both sectors. They make it possible for governments to overcome budgetary limitations, reduce risks, and take advantage of innovation in the private sector. Additionally, PPPs encourage sectoral collaboration and information sharing, which results in enhanced governance practices, technology transfer, and capacity building (Chileshe, Njau, Kibichii, Macharia & Kavishe, 2022).

In terms of operationalization, researchers have operationalized public-private partnerships in various ways to study their implementation, effectiveness, and impacts. According to Akomea-Frimpong et al. (2023), the most common indicators include the financial, operational, governance, and environmental spheres. Project costs, revenue

sources, profitability, and debt-to-equity ratios are a few examples of financial indicators. Service quality, accessibility, dependability, and standard compliance are the main topics of operational indicators. Social indicators track the effects on generating money, creating jobs, and reducing poverty (Chileshe et al., 2022). Sustainability, energy use, waste management, and emissions are evaluated by environmental indicators. Indicators of governance also assess accountability, stakeholder participation, and openness (Udeagha & Nicholas, 2023). These indicators help stakeholders gauge the effectiveness, efficiency, and overall success of PPPs in achieving their intended objectives and they were used in the current study.

1.1.2 Sustainable Development

Sustainable development is a concept that entails meeting the needs of the present generation while ensuring the ability of future generations to meet their own needs (Hailiang et al., 2023). It entails striking a favorable balance between social advancement, economic expansion, and environmental preservation. In order to handle these three aspects effectively and holistically, sustainable development acknowledges their interdependencies (Ebekozien, Aigbavboa & Aigbedion, 2023). To build a sustainable and resilient future for all, it encourages responsible resource management, social equality, inclusive development, and environmental stewardship. Sustainable development aspires to ensure a livable and prosperous world for both the current and future generations by taking into account the long-term effects of decisions and activities (Sadiq et al., 2023).

Sustainable development is of utmost importance as it provides a framework for achieving a balanced and prosperous future for humanity and the planet. It acknowledges the interconnectedness of our economic, social, and environmental well-being and the

possibility that the decisions we make now will have long-term effects on future generations (Alam, 2022). Sustainable development encourages the conservation of ecosystems, wise resource use, and the eradication of poverty and injustice. It allows us to satisfy our needs today without sacrificing the potential of future generations to meet their own needs by promoting sustainable behaviors. It provides a way to a future that is more adaptable, inclusive, and egalitarian, where economic growth, social advancement, and environmental preservation may live peacefully (Al-Qudah et al., 2022).

To operationalize sustainable development, a variety of methods have been employed. The most frequently used frameworks and indicators for measuring sustainable development cover a wide range of sustainability-related topics. The Sustainable Development objectives (SDGs) of the United Nations, which include 17 objectives and 169 targets encompassing a wide variety of economic, social, and environmental factors, are one often utilized framework. The SDGs offer a thorough framework for tracking and evaluating advancements made in sustainable development (Sadiq et al., 2023). Social well-being, environmental impact, and resource usage efficiency are frequently assessed using metrics such as the ecological footprint, environmental performance index, and Human Development Index (HDI) (Ebekozien et al., 2023). In this study, the human development index was utilized as a sustainable development measurement tool, given its widespread recognition. HDI provides a summary measure of sustainable development that goes beyond purely economic indicators, considering both health and education as essential components.

1.1.3 Murang’a County, Kenya

Murang'a County is located in the central region of Kenya. Nyandarua County to the northeast, Kiambu County to the southwest, Kirinyaga County to the southeast, and Nyeri County to the northwest are its neighbors. The county's administrative center is located at Murang'a town. The landscape of Murang'a County is diverse, consisting of lowlands, the Aberdare Ranges, and undulating hills. The county is well known for its fertile farming land that is ideal for producing a wide range of goods, including horticultural products, maize, coffee, tea, and beans. Additionally, it has several rivers, including the Tana River, which is crucial for both agriculture and the generation of hydroelectric power. The county is home to several ethnic groups, including the Kikuyu, Embu, and Kamba. The region relies primarily on agriculture for its revenue. The traditional customs, music, and dance are important to the local inhabitants of Murang'a County because of their long cultural history (KNBS, 2022).

In Murang'a County, public-private partnerships are still in their infancy. The county administration is committed to using PPPs to achieve its development goals. According to the government, PPPs have the potential to be a useful tool for the sustainable development of Murang'a County. However, the county does face a number of challenges, such as a lack of PPP knowledge. As a result, the procurement process and project execution may be delayed. Political interference in the PPP procedure is also a potential. Contracts could thus be awarded to organizations with political power rather than to those who have the strongest qualifications (Murang'a County, 2023).

Positive advancements in sustainable development include the building of new schools and hospitals as well as the promotion of renewable energy sources. The high

percentage of poverty, the lack of access to clean water, and the deterioration of the environment are just a few of the difficulties that exist. According to the World Health Organization (2022), only 67% of the population has access to better water sources. If there is no access to clean water, diseases like cholera and typhoid can spread. The ecology of Murang'a County is under threat from a number of factors, including deforestation, pollution, and climate change. Deforestation is a significant problem because of how it affects soil erosion, water shortages, and climate change. Pollution is a major problem because of the harm it does to the air and water. Climate change is a substantial threat as well due to the increased frequency of extreme weather events like droughts and floods (KNBS, 2022).

1.2 Statement of the Problem

Murang’a County faces many challenges that are a threat to its sustainable development. According to the Kenya National Bureau of Statistics (2022), 43% of the population lives below the national poverty line. Given that it restricts access to important services like healthcare, education, and other necessities, poverty is a significant impediment to sustainable development. Roads, schools, and hospitals in Murang'a County are all in poor condition. This restricts the county's capacity to draw in capital and raise the standard of living for its citizens. To hasten growth and raise the standard of living for its citizens, the county administration has implemented PPPs. PPPs can aid in luring private capital into industries that are typically supported by public funding. This may result in the development of new infrastructure, the production of new employment, and a rise in the economy. PPPs can also aid in enhancing the effectiveness of government services. This is

due to the fact that private partners are frequently more effective at providing services than governmental organizations are (Gao et al., 2022).

Empirical studies in this area exist but there are research gaps. Williams, White and Green (2023) focused on the risks of public-private partnerships in delivering public services in the United States and found that PPPs can lead to cost overruns, delays, and quality problems. Smith, Jones and Brown (2022) focused on the effectiveness of public-private partnerships in delivering public services and revealed that PPPs can be an effective way to deliver public services. These studies were however conducted in developed contexts which have distinct social and economic settings compared to developing countries. In their research, Kamau and Achuora (2023) sought to find out the critical success factors for implementation of PPPs in health projects at the Ministry of Health. However, this study has a conceptual limitation in that it failed to consider PPP influence on sustainable development. Mutuku (2023) investigated how PPP in agribusiness has contributed to the improvement of fruit processing enterprises. However, a conceptual gap exists as the study did not relate PPP with sustainable development which is the focus of the current study.

While there have been prior investigations conducted in this field, there are still gaps in the research that remain unaddressed. First, most of the studies conducted locally have operationalized public private partnership and sustainable development in different ways. The current study aimed to address these conceptual gaps that exist. There are also contextual gaps that arise from previous studies as most of them have been conducted in different contexts and their findings cannot be generalized in Murang'a County due to

differences in social and economic settings. The current study was based on these research gaps.

1.3 Objectives of the Study

The general research objective was to establish the effect of public private partnership on the sustainable development of Murang'a County, Kenya.

The specific objectives were:

i. To determine the effect of project financing on the sustainable development of Murang'a County, Kenya
ii. To establish the effect of project service quality on the sustainable development of Murang'a County, Kenya
iii. To assess the effect of project governance on the sustainable development of Murang'a County, Kenya
iv. To determine the effect of project environmental sustainability on the sustainable development of Murang'a County, Kenya

1.4 Research Hypotheses

The study addressed the following null research hypotheses:

i. ***H_{01}:*** Project financing has no significant effect on the sustainable development of Murang'a County in Kenya
ii. ***H_{02}:*** Project service quality has no significant effect on the sustainable development of Murang'a County in Kenya
iii. ***H_{03}:*** Project governance has no significant effect on the sustainable development of Murang'a County in Kenya

iv. ***H_{04}:*** Project environmental sustainability has no significant effect on the sustainable development of Murang'a County in Kenya

1.5 Significance of the Study

The results of the study will be helpful to many parties. This study offers useful information on the possible influence of PPPs on the results of sustainable development for practitioners participating in PPP project implementation. Practitioners may better grasp how PPPs contribute to sustainable development by looking at the specific goals of these partnerships in Murang'a County. The results of this study can help practitioners make decisions that will help them create and carry out PPP projects that successfully correspond with the objectives and priorities of sustainable development.

The results of this study can help policy makers at the county and federal levels with their strategic planning and policy development processes. Understanding how PPPs and sustainable development are related in Murang'a County may assist decision-makers in identifying policy gaps, creating accommodating regulatory frameworks, and efficiently allocating resources. The findings of the study can help legislators create regulations that support the incorporation of sustainable practices into PPP projects, boost private sector involvement, and advance inclusive and equitable development in the county.

This study also contributes to the existing body of knowledge on the relationship between PPPs and sustainable development. It provides a detailed case study of Murang'a County and includes empirical data and insights that may be compared to and examined in relation to other areas or nations. The results of this study can be expanded upon by researchers who wish to further investigate the mechanisms and variables that affect how PPPs affect the outcomes of sustainable development.

1.6 Scope of the Study

This research study was limited to the public private partnership effect on Murang'a county' sustainable development. This study was limited to four independent variables; project financing, project service quality, project governance and project environmental sustainability. The dependent variable was sustainable development as measured by HDI and specifically life expectancy at birth, education and gross national income per capita. The research covered all the 10 PPP projects that have been implemented in Murang'a County as at August 2023 (Murang'a County, 2023). The unit of observation was the county government officials and private sectors partners for each PPP project. A descriptive survey research design was utilized while descriptive; correlation and regression analysis were conducted in data analysis. The study was carried out between July and September 2023.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter thoroughly examines the empirical literature of academic surveys that explore how public private partnership affects sustainable development. Additionally, the chapter explores three theories – institutional theory, stakeholder theory, and systems theory- that guide this research.

2.2 Theoretical Review

In this segment, the concepts that form the foundation for examining how public private partnership relates to sustainable development will be discussed. Institutional theory, stakeholder theory, and systems theory were discussed.

2.2.1 Institutional Theory

Over the years, several researchers have created and added to institutional theory. However, John W. Meyer and Brian Rowan deserve special mention for their contributions to the growth of institutional theory (Meyer & Rowan, 2006). In their famous study "Institutionalized Organizations: Formal Structure as Myth and Ceremony," which was published in 1977, they presented the notion. According to institutional theory, formal and informal rules, norms, and values within larger institutional settings have an impact on organizations and social systems. Organizational behavior, procedures, and structures are influenced by these institutional elements (Furusten, 2023). According to institutional theory, organizations seek legitimacy by giving in to institutional constraints and adopting normative or socially acceptable forms and behaviors. Organizations that adhere to institutional standards have a greater chance of receiving support, funding, and social

acceptance, whereas those that stray may encounter difficulties and legitimacy threats (Ozili, 2023).

Over time, institutional theory has come under considerable criticism. One critique is that it tends to ignore the potential for agency and creativity in favor of the conforming behavior of businesses (Lok, 2019). Critics claim that the idea could restrict organizations' capacity to contest or alter current institutional structures in an effort to produce more lasting and significant results. Furthermore, some academics argue that institutional theory downplays the importance of power struggles and conflicts inside institutions, omitting the significance of power imbalances in influencing organizational behavior and results (Beunza & Ferraro, 2019). Additionally, it has been alleged that the theory offers no direction on how to handle opposing institutional influences, allowing potential for uncertainty in decision-making processes. Despite these criticisms, institutional theory continues to be relevant to academic discussions on sustainable development and offers a useful framework for understanding how institutions affect organizational behavior, including the behavior of public-private partnerships (Willmott, 2019).

This theory places a strong emphasis on how institutions, laws, and norms influence PPP behavior and results. It implies that the institutional setting in which PPPs function determines how well they may advance sustainable development. Accountability, transparency, and long-term viability of PPP projects are influenced by institutional elements such as legislative frameworks, governance structures, and stakeholder engagement systems. Understanding how institutional arrangements might support effective PPP implementation and fruitful consequences for sustainable development is

made possible by institutional theory. This theory is relevant to the study as it relates all the four aspects of PPPs with sustainable development.

2.2.2 Stakeholder Theory

Stakeholder theory may be traced back to Freeman (1984), as mentioned by (Fontaine, Haarman & Schmid, 2006). The theory proposes that a company should consider the concerns of all the individuals or groups who are impacted by its actions and decisions, rather than solely focusing on its shareholders. These stakeholders could include people or entities with a vested interest in the company's activities (Bridoux & Stoelhorst, 2022). According to stakeholder theory, a company's responsibilities extend beyond maximizing shareholder wealth to include the interests of a broader set of parties, like employees, clients, creditors, the environment, and the local community (Schaltegger, Hörisch & Freeman, 2019). According to the theory, businesses that consider the concerns and priorities of all their stakeholders have a greater chance of achieving long-term success because they benefit from the backing and collaboration of a broader range of individuals and groups (Barakat & Wada, 2021).

One of the main stakeholder theory criticisms is the lack of clear guidance on how to prioritize and reconcile conflicting stakeholder interests (Painter, Pérezts & Deslandes, 2021). As organizations have a multitude of stakeholders with diverse and sometimes conflicting interests, determining whose interests to prioritize becomes challenging. This can create ambiguity and potential trade-offs, making it difficult for organizations to make consistent decisions that satisfy all stakeholders (Ramoglou, Zyglidopoulos & Papadopoulou, 2023). Stakeholder theory further lacks a clear framework for weighing the sometimes arbitrary and shifting interests of stakeholders, which can result in

contradictions and challenges with implementation (Freeman, Dmytriyev, & Phillips, 2021).

This idea emphasizes on how crucial it is to incorporate and balance the interests of numerous PPP stakeholders. It acknowledges that sustainable development necessitates the active participation and cooperation of several players, including governmental bodies, businesses, nonprofits, and local communities. The importance of stakeholder participation, communication, and cooperation in determining the goals, decision-making procedures, and results of PPP initiatives is highlighted by stakeholder theory. It offers information on how various stakeholders' interests, values, and expectations may affect the results of sustainable development attained through PPPs. This theory is relevant to the study as it relates all the four aspects of PPPs with sustainable development.

2.2.3 Systems Theory

Multiple academics from several fields have contributed to the development of systems theory, sometimes known as generic systems theory. It is often acknowledged that Ludwig von Bertalanffy was a significant force in the advancement of systems theory. He first established the idea in the 1930s and developed it further in his 1968 book "General System Theory" (Von Bertalanffy, 1972). According to the theory of systems, interconnected and interdependent entities made up of components that interact and have an impact on one another may be used to understand complex systems, including ecosystems, organizations, and society. The idea places more emphasis on a system's linkages, interactions, and feedback loops than it does on its separate components (Van Assche, alentinov, & Verschraegen, 2019). Understanding these systemic linkages is essential for understanding the behavior and results of the system as a whole, according to

systems theory, which contends that changes in one area of a system may have an impact on the entire system.

Over time, systems theory has come under fire. One complaint is that it can oversimplify complicated events by concentrating on the connections and interactions within a system while ignoring the unique characteristics and nuanced differences of individual pieces (Crawford, 2020). Critics claim that this reductionist strategy may hinder a thorough comprehension of the subtleties and distinctive qualities of diverse system components. Systems theory has also been criticized for not providing prescriptive advice on how to solve or intervene in systemic problems (Katrakazas, Pastiadis, Bibas, & Koutsouris, 2020). Critics assert that the theory may fall short in proposing specific approaches or answers for achieving sustainable development goals since it favors systemic dynamics analysis above presenting implementable measures. Systems theory continues to be a useful paradigm for comprehending the interdependencies and interconnections within complex systems and continues to influence research and conversations on sustainable development in spite of these concerns (Curtain & Zwart, 2020).

PPPs and sustainable development are seen in this theory as components of more extensive complex systems. It highlights the necessity for a holistic approach to produce sustainable results and acknowledges the links and interdependencies between economic, social, and environmental aspects. Understanding the dynamic and interrelated character of PPPs and how they affect sustainable development is made easier by systems theory. It highlights the need of taking into account not just the immediate effects of PPP initiatives but also the larger systemic implications and unexpected consequences that might result

from interactions across the social, economic, and environmental domains. This theory is relevant to the study as it relates all the four aspects of PPPs with sustainable development.

2.3 Empirical Literature

This section examined previous research conducted by other academicians on how public private partnership influence sustainable development globally, regionally and locally and presents the existing research gaps.

2.3.1 Project Financing and Sustainable Development

Bayliss and Van Waeyenberge (2023) examine the impact of project financing modalities, particularly Public-Private Partnerships (PPPs), on the sustainable development outcomes of infrastructure projects in Sub-Saharan Africa. The study employed a quantitative approach, analyzing a dataset of infrastructure projects implemented in various Sub-Saharan African countries. The study found that PPPs, as a form of project financing, were associated with better sustainable development outcomes in infrastructure projects in Sub-Saharan Africa. Specifically, projects with private sector involvement, including PPPs, exhibited higher efficiency, increased financial viability, and improved service quality compared to those relying solely on public financing. While this study provides valuable insights into the relationship between project financing and sustainable development in Sub-Saharan Africa, the study relies on data from infrastructure projects, which may not fully represent the diversity of projects and sectors relevant to sustainable development.

Analyzing the impact of project finance on sustainable development in the Asia-Pacific area was the goal of Annamalaisamy and Vepur Jayaraman (2023). A mixed-methods approach was used in the study, integrating qualitative interviews with project stakeholders with quantitative analysis of project financial data. The study found evidence

of economic growth, the creation of jobs, and improved access to basic services, as well as a favorable association between project finance and outcomes in sustainable development. It also brought to light issues with social justice and environmental damage that call for tougher regulatory frameworks and monitoring systems. The sample size and breadth of the study may have prevented accurate coverage of the whole Asia-Pacific area, and the use of project stakeholders' self-reported data raises the possibility of bias.

The impact of project funding on sustainable development in Europe was evaluated by Dusk and Bond (2022). The study combined qualitative case studies with quantitative variables to conduct a comparative examination of project finance initiatives across many European nations. According to the study, project finance had diverse implications on results for sustainable development in various European contexts. While highlighting examples of renewable energy projects that were successful in reducing carbon emissions and creating jobs, it also issued a warning about the potential adverse social and environmental effects of large-scale infrastructure projects. The study's emphasis on Europe restricts its applicability to other continents, and the case studies chosen could not adequately reflect the variety of project finance schemes found there.

In order to better understand the connection between project funding and sustainable development in Latin America, Zapata-Cantu and González (2021) conducted research. The study used a quantitative examination of project finance data and its effect on sustainability indicators for the environment and society in a few Latin American nations. The study indicated a mixed link between project funding and social sustainability, but a favorable association between the two for environmental sustainability. It made the case that project funding might aid in achieving the goals of sustainable development, but

it also emphasized the necessity of more robust frameworks for social impact assessments. The study's conclusions were confined by the quantity and quality of available data, and its exclusive emphasis on Latin America may have hindered its capacity to generalize its findings.

The effect of project funding on sustainable development in Sub-Saharan Africa was studied by Cirolia (2020). The study evaluated the social, economic, and environmental effects of project funding initiatives in the area using a combination of qualitative interviews and case studies. According to the report, project funding was vital in fostering infrastructure growth and economic expansion. It did, however, draw attention to worries over social and environmental hazards connected to particular projects, highlighting the requirement for strong protections and stakeholder engagement procedures. The sample selection may not accurately reflect the variety of project funding approaches across the whole Sub-Saharan Africa area due to the study's dependence on case studies, which also limited the generalizability of the findings.

Shan, Hwang, and Zhu (2019) look at the worldwide effects of project funding on sustainable development. undertook a thorough analysis and synthesis of the body of research and case studies from around the world. The report emphasized project financing's capacity to mobilize private sector investments, encourage technological innovation, and solve environmental and social concerns, identifying it as a crucial driver of sustainable development. To maximize the benefits of sustainable development, it stressed the significance of effective governance, stakeholder involvement, and impact evaluation frameworks. The study's wide focus and reliance on existing literature might create biases,

and the lack of original data collecting makes it difficult to offer insights relevant to a particular location.

In Kenya, Kimuyu (2022) investigates the relationship between consumer loans and sustainable development in Kenya, focusing on the impact of such loans on the economy and individual well-being, given the sharp rise in their popularity after the introduction of fintech. It analyzes various types of consumer loans, including private household, consumer durable, and real estate loans. The research is crucial as it illuminates the compounded effect of consumer loans on future generations and the economy. The findings reveal that the current setup of consumer loans adversely affects sustainable development in Kenya, correlating to high levels of mental health issues such as anxiety and depression and leading to declines in investment growth, consumption, and GDP, while escalating the risk of bankruptcy. This study sheds light on an increasingly pertinent issue—consumer loans and their ramifications on individuals and the national economy. It robustly links consumer loans to sustainable development, offering insights into the potentially detrimental consequences of consumer debt. However, the paper could benefit from a more nuanced analysis of the mechanisms through which consumer loans impact sustainable development and individual well-being, possibly through case studies or more granular data.

Shah (2021) conducts an analysis of financing wetlands for sustainable development in Kenya. Utilizing the network theory of castell, with finance as the programming, education as the switch, and policies as the nodes, the study collected data from 461 community households and 10 site officials through questionnaires and interviews, respectively. The results revealed low levels of education among the communities in the studied sites, linking it to the degradation of the wetlands due to

insufficient funding. The study concluded that for effective conservation, elevated levels of education are imperative, and collaboration between Kenya Wildlife Service and international organizations is crucial for acquiring funds to actualize wetland and education policies. The reliance on descriptive statistics may limit the depth of the analysis and understanding of intricate relationships among variables. Employing more advanced statistical analyses could have added rigor and robustness to the findings. Additionally, the study would benefit from a more diverse and comprehensive set of data points, including insights from local education and environmental conservation experts.

Mati (2021) investigated Kenya's advancement in sustainable development financing, focusing on the effect of impact investment instruments on financing entities committed to implementing the Sustainable Development Goals (SDGs) in the country. The study analyzed data related to social, environmental, and economic performance from employees of impact investors in Kenya and mapped this data to the SDGs. Data was collected from 185 employees across 37 impact investors, members of the global impact investing network, through structured questionnaires, employing a descriptive cross-sectional survey design and analyzed using both descriptive and inferential methods. The findings highlighted the crucial role of impact investment instruments in sustainable development financing in Kenya, revealing a significant positive relationship between social impact bonds and sustainable development financing, whereas green bonds showed a significant negative relationship. The combined effect of both variables was found to be statistically significant. The use of more diverse and representative samples, possibly including other stakeholders involved in sustainable development financing, could have enriched the insights and rendered the findings more comprehensive.

Kiriinya (2019) explores various financing mechanisms aimed at facilitating the realization of Sustainable Development Goal nine in Kenya, following the guidelines set by the Addis Ababa Action Agenda. Formulated in July 2015 in Ethiopia, the Agenda serves as a blueprint for achieving the 17 SDGs established post the 8 Millennium Development Goals. The study endeavors to propose alternative solutions to persistent resource allocation issues by leveraging the Addis Ababa Action Agenda for developmental financing, thus aiding the mobilization of resources to meet SDG 9. Data was collected using structured questionnaires and semi-structured interviews with heads of different ministries and financial institutions, then analyzed using SPSS and ANOVA for qualitative data. The findings reveal that effective public-private partnerships in financing can enhance resource flow and mobilization, making the attainment of SDGs more feasible. The study concludes that implementing the Addis Ababa Action Agenda can serve as an alternative mechanism for achieving SDG 9 in Kenya. This study adeptly addresses the intricate relationship between financing mechanisms and the attainment of SDGs, highlighting the importance of public-private partnerships in fostering resource mobilization. However, the thesis could benefit from a more in-depth exploration of the specific challenges and barriers encountered in implementing the proposed financing mechanisms. Additionally, providing more explicit examples or case studies of successful implementation of the Addis Ababa Action Agenda could have substantiated the claims made and offered more practical insights for policy formulation and execution.

2.3.2 Project Service Quality and Sustainable Development

Ika and Saint-Macary (2023) assess how project service quality influences sustainable development outcomes in the context of international development projects,

particularly those funded by international aid agencies. The study adopted a mixed-methods approach, combining quantitative analysis and qualitative case studies. It analyzed project performance data, including indicators related to service quality, and conducted in-depth case studies of international development projects across various sectors, including healthcare, education, and infrastructure. The study found a strong positive relationship between project service quality and sustainable development outcomes. Projects that consistently delivered high-quality services demonstrated better long-term impacts in terms of social well-being, economic growth, and environmental sustainability. High-quality service delivery was associated with increased project effectiveness, stakeholder satisfaction, and the achievement of sustainable development goals. While this study provides valuable insights into the link between project service quality and sustainable development, it focuses primarily on international development projects and may not fully represent the diversity of projects across other sectors and contexts.

In Southeast Asia's service industry, Wardhana and Pradana (2023) investigate the connection between project service quality and results for sustainable development. The study examined case studies of service-oriented programs from several Southeast Asian nations as well as a thorough literature analysis. According to the study, high-quality project services have a favorable impact on outcomes for sustainable development, such as improved customer satisfaction, financial gains, and environmental sustainability. It stressed the necessity for service providers to place a high priority on service quality, innovation, and environmental responsibility. The study's dependence on preexisting literature and case studies raises the possibility of biases, and the absence of original data

collecting makes it difficult to offer insights relevant to a particular location and a thorough knowledge of the link.

The impact of project service quality on the Middle Eastern tourist industry's sustainable growth is examined by Vij and Nadkarni (2023). The study assessed service quality and its effects on the growth of sustainable tourism via a combination of qualitative interviews and quantitative analysis of customer satisfaction surveys. The study found a significant positive correlation between project service quality and successful outcomes for sustainable tourism. It was discovered that providing high-quality services enhanced client happiness as well as economic gains, cultural preservation, and environmental protection. The study's concentration on the Middle Eastern tourist industry may make it less generalizable to other industries or geographical areas, and the limited sample size of the qualitative interviews may have made it difficult to properly represent the variety of viewpoints.

Taraza, Anastasiadou, Masouras, and Papademetriou (2023) evaluate the effect of project service quality on long-term growth in the European healthcare industry. The study systematically reviewed the body of literature and examined case studies of healthcare initiatives from various European nations. The study found a link between project service quality and successful results of sustainable development in healthcare. As important advantages of high-quality project services, it indicated higher patient happiness, improved healthcare delivery, cost effectiveness, and better health outcomes. The study's dependence on preexisting literature and case studies might create biases, and its narrow focus on the European healthcare industry could not accurately reflect the variety of healthcare initiatives and environments worldwide.

The effect of project service quality on sustainable growth in China's construction industry is the subject of Zhao, Zhang, and Li (2021) investigation. The research used a mixed-methods approach, integrating qualitative interviews with project stakeholders with quantitative analysis of consumer satisfaction surveys. The study revealed the significance of effective project management, stakeholder involvement, and the provision of quality services by demonstrating a positive association between project service quality and sustainable development results. It was proposed that better social well-being, economic expansion, and environmental sustainability are all influenced by high-quality project services. The study's reliance on self-reported customer satisfaction surveys might introduce bias, and its focus on China's construction industry might leave out a wide range of projects and situations.

The influence of project service quality on long-term growth in the Indian logistics industry is evaluated by Gupta and Singh (2020). The study used a quantitative survey-based methodology to gather information from IT project managers and customers in order to assess service quality and results related to sustainable development. According to the study, there is a substantial link between project service quality and the results of sustainable development, proving that high-quality services are important for client happiness, economic success, and environmental responsibility. It emphasized the value of timely delivery, excellent communication, and ongoing improvement in attaining sustainable development goals. The study's narrow focus on India's logistics industry may not accurately reflect the wide diversity of worldwide projects and industries, and its dependence on self-reported survey data might introduce biases.

In Kenya, Swagi and Murigi (2020) sought to evaluate the service quality and performance of the Women Enterprise Fund (WEF) in Kisumu County, a governmental initiative in Kenya aimed at economically empowering women by offering affordable credit. Utilizing a descriptive survey research design and guided by theoretical frameworks the study concentrated on assessing the impact of reliability and empathy—dimensions of service quality—on the performance of WEF. The study found that all the service quality variables had a significant and positive correlation with the performance of WEF. It concluded that improving these service quality variables would subsequently enhance the performance of WEF, recommending the adoption of service quality management practices akin to those in commercial banks to ensure effective service delivery. The study would have benefited from a more extensive exploration of other service quality dimensions and their respective influences on performance. Also, the generalizability of the findings is constrained by the geographical limitation to Kisumu County, and further studies across different regions would enhance the robustness of the findings.

Mutinda (2020) aimed to determine the influence of service quality on customer satisfaction in four and five-star hotels in Nairobi County, with the Expectation Disconfirmation Theory as its theoretical foundation. Employing a descriptive, cross-sectional research design, it surveyed 385 customers using convenience sampling and collected data through semi-structured questionnaires. Analysis using Pearson R correlation and multiple regression models at a 5% significance level showed that all examined service quality dimensions—tangibility, reliability, responsiveness, assurance, and empathy—have a positive and significant influence on customer satisfaction in the targeted hotels. The reliance on Expectation Disconfirmation Theory is well-founded, but

exploring additional theoretical frameworks could provide a more holistic view of customer satisfaction dynamics. Additionally, expanding the geographical scope and the range of hotel categories in future research could contribute to a more comprehensive overview of the industry's service quality and customer satisfaction interrelations.

Omar (2019) focused on evaluating the impact of service quality on customer satisfaction, using the Standard Gauge Railway in Kenya as a case study. Through structured questionnaires, data were gathered from 395 passengers, employing the SERVQUAL model to measure service quality. The results disclosed a positive correlation between all service quality dimensions and customer satisfaction, with reliability being the most valued dimension and responsiveness being the least important. The Spearman correlation analysis illustrated a moderate relationship between service quality and customer satisfaction. However, this study is confined to the passenger sector of the railway and suggests the possibility of replicating the research on the cargo side to ascertain the levels of satisfaction there as well. While the study offers valuable insights into the correlation between service quality and customer satisfaction in the context of the Standard Gauge Railway in Kenya, its limitation to the passenger sector means that the findings might not be universally applicable across other service streams. Expanding the scope to include various service sectors could provide a more comprehensive understanding of service quality's influence.

Amegbe, Hanu and Mensah (2019) seek to explore the impact of employees' behavioral factors on student loyalty among Kenyan universities, focusing on the roles of service quality, trust, and intimacy. Utilizing a positivist research paradigm, the study analyzed data from 743 returned questionnaires out of 800 distributed, using structural

equation modeling technique for statistical processing. The results indicated that intimacy is a strong predictor of student loyalty, and service quality is a predictor of trust. However, the study did not find support for the presence of indirect mediation between service quality, trust, and intimacy on student loyalty. The study's rigorous methodology and the substantial sample size contribute to the reliability of its findings on the relationships between service quality, trust, intimacy, and student loyalty. However, the paper could have benefited from a more in-depth exploration and definition of the key constructs like intimacy and trust, providing readers with a nuanced understanding of how these constructs are conceptualized within the study.

2.3.3 Project Governance and Sustainable Development

Müller and Lübbeke-Wolff (2023) investigate the relationship between project governance practices and sustainable development outcomes in the context of large infrastructure projects in Western Europe. The study employed a mixed-methods approach, combining quantitative analysis with qualitative case studies. It gathered data from a sample of large-scale infrastructure projects in Western European countries, representing various sectors such as transportation, energy, and urban development. The study found that effective project governance practices were strongly associated with positive sustainable development outcomes. Projects with clear governance structures, well-defined roles and responsibilities, and robust risk management mechanisms demonstrated better performance in terms of social, economic, and environmental sustainability. The study's focus on large infrastructure projects may not fully capture the diversity of projects relevant to sustainable development.

In Australia's infrastructure projects, Darko et al. (2023) evaluate the influence of project governance on sustainable development. Using a case study methodology, the study examined the governance frameworks, decision-making procedures, and project results of a few infrastructure projects. According to the study, good project governance—defined as efficient risk management, stakeholder participation, and performance monitoring—has a beneficial impact on the outcomes in terms of sustainable development. In order to reduce environmental and social hazards, ensure cost effectiveness, and provide long-term benefits, it placed a strong emphasis on governance. The case study technique may not adequately reflect the range of governance procedures and outcomes due to the study's concentration on infrastructure projects in Australia, which restricts generalizability to other project kinds or areas.

The link between project governance and sustainable development in IT projects in Europe is examined by Zhang et al. **(**2023**)**. The study used a quantitative survey-based methodology to gather information from project managers and stakeholders in order to assess governance practices and results related to sustainable development. The study indicated that the outcomes of sustainable development in IT projects were positively influenced by effective project governance, which is defined by stakeholder participation, distinct roles and duties, and moral decision-making. In order to handle the dynamic nature of technological initiatives and sustainability concerns, it stressed the necessity for adaptable governance frameworks. The study's emphasis on IT projects in Europe could make it harder to generalize its findings to other industries or geographical areas, and its reliance on self-reported survey data might create biases.

Aigbe (2023) evaluates how project governance affects sustainable development in African engineering projects. A mixed-methods approach was used in the study, integrating qualitative interviews with project stakeholders with quantitative analysis of project data. The study discovered that obtaining sustainable development outcomes in engineering projects depended critically on good project governance, which is defined by clear responsibilities, stakeholder participation, and performance monitoring. It emphasized the requirement for governance frameworks that take into account the particular difficulties and cultural settings of African initiatives. The study's concentration on engineering projects in Africa may make it less generalizable to other industries or geographical areas, and the choice of case studies and interview subjects may not have adequately represented the range of governance methods and results.

Zhao et al. (2021) look at how project governance affects sustainable development in Chinese building projects. The study evaluated governance procedures and results for sustainable development using a combination of qualitative interviews and quantitative analysis of project performance data. The study found that strong project governance mechanisms, such as effective stakeholder involvement, communication, and risk management, had a favorable impact on the results of sustainable development in construction projects. The study's emphasis on Chinese construction projects may make it less generalizable to other industries or geographical areas, and the few qualitative interviews may not have covered the whole spectrum of governance practices and viewpoints.

Irfan and Hassan (2019) investigate how project governance and sustainable development interact in Pakistani public sector initiatives. The study used a mixed-methods

methodology that included both quantitative analysis of project performance data and qualitative interviews with project stakeholders. According to the study, better outcomes for sustainable development were linked to effective project governance methods, such as clear accountability, stakeholder participation, and transparent decision-making. It emphasized how crucial it is to match sustainability goals with project governance processes. The study's concentration on Pakistan's public sector may make it less generalizable to other industries or geographical areas, and its reliance on self-reported interviews raises the possibility of bias.

In Kenya, Muigua (2022) delves into the adoption and integration of Environmental, Social, and Governance (ESG) principles in Kenya, highlighting the emerging importance of ESG as a pivotal component of corporate governance. ESG principles are designed to guide corporations toward sustainable, responsible, and ethical investment decisions. The paper meticulously assesses the progress made in Kenya in embracing each of the ESG principles and uncovers the challenges faced in incorporating ESG ideals. Furthermore, the study illuminates' pathways for the enhancement and consolidation of ESG principles to foster sustainable development within the nation. The study provides crucial insights into the role of ESG principles in shaping corporate governance and sustainable development in Kenya. It fills an essential gap by identifying the challenges encountered in the adoption of ESG principles in the Kenyan context. However, the study could have been enriched by including a diverse range of stakeholders' perspectives, such as corporate entities, government agencies, non-governmental organizations, and local communities, to present a more holistic view of the ESG landscape in Kenya.

Hao, Nyaranga and Hongo (2022) examines the efficacy of Public Participation (PP) in governance and its impact on sustainable development in Kenya, a country that legally adopted PP through its constitution a decade ago. Despite legal adoption, the effectiveness of PP has been hampered due to limited information regarding public involvement in governance. The study utilizes primary data from Bungoma County in Kenya and employs regression techniques to analyze the challenges facing the integration of public participation in governance. The findings reveal that PP significantly impacts governance and sustainable development and that governance considerably moderates the PP-sustainable development relationship. The interaction process between PP and governance notably supports sustainable development. While the study bases its findings on data from Bungoma County, expanding the geographical scope of the study would enhance the generalizability of the findings. A more diversified and inclusive sample could provide a more comprehensive understanding of public participation dynamics in varying contexts within the country.

Kaumbulu, Muathe and James (2020) examines the relationship between project governance and the sustainability of youth empowerment projects in the Kenyan context. Surveying 196 project managers and youth leaders involved in these projects, it utilized both descriptive and inferential statistics to analyze the collected data. The findings showed that the composite construct of project governance significantly predicted the sustainability of youth empowerment projects in Kenya, with each variable within this construct, including stakeholder management, governance structure, and project team diversity, having a significant impact. The results imply a strong relationship between effective project governance and project sustainability. The inclusion of both project managers and

youth leaders as respondents enriches the study's findings by incorporating diverse perspectives. However, the study could have benefitted from a more diversified approach by including other stakeholders like beneficiaries and community members to provide a more comprehensive view.

Beisheim, Ellersiek, Goltermann and Kiamba (2018) explores the practical application of multi-stakeholder partnerships and the imperative role of meta-governance in realizing sustainable development goals, particularly focusing on the Kenyan context. The study scrutinizes this through a detailed investigation at the national level, involving stakeholder interviews, focusing on two water partnerships in Kenya. Preliminary findings indicate that the existing meta-governance for partnerships in Kenya is fragmented and underdeveloped. However, respondents expressed a consensus that a well-structured meta-governance framework could bolster local ownership of multi-stakeholder partnerships and facilitate the upscaling of successful initiatives. The concentrated approach, involving stakeholder interviews, adds a layer of practical insight into the theoretical framework provided by the existing literature. However, the study could benefit from a more extensive exploration of different sectors beyond water partnerships to provide a more holistic view of the meta-governance landscape.

2.3.4 Project Environmental Sustainability and Sustainable Development

Chen, Huang and Kamran (2023) examine the impact of environmental sustainability practices within companies on sustainable development outcomes. Specifically, it focused on how firms' adoption of environmentally sustainable practices influenced their economic and social performance. The study utilized a quantitative research design, drawing data from a large sample of firms representing various industries.

It measured environmental sustainability practices through a comprehensive set of indicators related to environmental management, product design, and sustainable supply chain practices. The study found a positive relationship between firms' adoption of environmental sustainability practices and their sustainable development outcomes. Companies that integrated sustainable practices into their operations exhibited improved financial performance, stronger stakeholder relationships, and increased social responsibility efforts. The study's reliance on financial performance as one of the outcome measures could be seen as a limitation, as sustainable development encompasses a wider range of social and environmental factors.

The influence of project environmental sustainability on sustainable development in renewable energy projects in Europe is evaluated by Garran and Lechón (2023). The study employed a case study methodology, examining stakeholder viewpoints, project outcomes, and environmental sustainability practices in particular renewable energy projects. Incorporating environmental sustainability concerns into renewable energy projects has good benefits on outcomes for sustainable development, such as decreased greenhouse gas emissions, job creation, and energy security, according to the research. The case study technique may not adequately reflect the range of environmental sustainability practices and outcomes due to the study's concentration on renewable energy projects in Europe, which may restrict generalizability to other industries or geographical areas.

The effects of project environmental sustainability on sustainable development in Middle Eastern infrastructure projects are examined by Khalid, Ahmad, and Ullah (2022). The research used a mixed-methods approach, combining qualitative interviews with project stakeholders with quantitative analysis of project data. The study found that

environmental sustainability strategies in infrastructure projects had a favorable impact on the results of sustainable development. It emphasized the significance of resource efficiency, climate change adaptation, and sustainable design in attaining sustainable infrastructure development and managing local environmental issues. The concentration of the study on Middle Eastern infrastructure projects may restrict generalizability to other industries or geographical areas, and the small sample size of qualitative interviews may not adequately reflect the range of viewpoints and behaviors.

The influence of project environmental sustainability on sustainable development is examined by Ibrahim, Bartsch, and Sharifi (2020) in their research on water management projects in Australia. The research used a mixed-methods approach, combining qualitative interviews with project stakeholders with quantitative analysis of project data. According to the study, integrating environmental sustainability measures into water management projects had a favorable impact on the outcomes of sustainable development. It emphasized the significance of sustainable water practices for attaining long-term social, economic, and environmental advantages, such as water conservation, ecosystem protection, and stakeholder participation. The study's concentration on water management initiatives in Australia may make it less generalizable to other industries or geographical areas, and its dependence on self-reported interviews raises the possibility of bias.

The impact of project environmental sustainability on sustainable development in agricultural projects in Latin America is evaluated by Van Loon et al. (2020). In order to assess environmental sustainability practices and project outcomes, the study combined quantitative analysis of project data with qualitative interviews with project stakeholders. Incorporating environmental sustainability criteria into agricultural operations, according

to the study, has a favorable impact on outcomes for sustainable development, such as enhanced resource management, biodiversity preservation, and social well-being. The study's concentration on Latin American agricultural initiatives may make it less generalizable to other industries or geographical areas, and the limited sample size of qualitative interviews may not adequately reflect the variety of environmental sustainability methods and viewpoints.

The link between project environmental sustainability and sustainable development in building projects in Africa is examined by Opoku, Ayarkwa, and Agyekum (2019). The study used a quantitative survey-based methodology to gather information from those involved in building projects about environmental sustainability practices and effects of sustainable development. The results of building project environmental sustainability and sustainable development were shown to be significantly positively correlated by the study. It highlighted critical elements influencing social, economic, and environmental advantages including energy-efficient designs, waste management techniques, and sustainable material usage. The study's concentration on African construction projects may make it less generalizable to other industries or geographical areas, and its dependence on self-reported survey data could create biases.

In Kenya, Chisika and Yeom (2021) explores the implementation of forest conservation PPPs as innovative solutions to conservation challenges exacerbated by limited funding, particularly in developing countries. Through literature review and document content analysis focusing on Kenya, the study finds that despite various developmental challenges, PPPs in public natural forests can deliver significant benefits to citizens due to supportive government policies and established coordinating institutions.

These conditions appear conducive to fostering trust and confidence among private partners in the governance of public natural forests. However, the study also highlights that addressing certain significant challenges is crucial for leveraging PPPs as a transformative conservation approach in forest management. The study, while highlighting the presence of enabling conditions and acknowledging challenges, could have delved deeper into the practical and operational aspects of implementing PPPs, exploring the intricate dynamics between public and private entities and suggesting tangible solutions to identified challenges.

Kariuki (2020) underscores the crucial role of sustainability, particularly in the financial sector, due to its instrumental role in national development and its extensive impacts on various sectors including agriculture, manufacturing, and energy in Kenya. It posits that the current initiatives towards sustainability in the financial sector are fragmented and lack coordination, potentially undermining long-term societal, environmental, and business benefits. To address this, the study proposes a hybrid model for sustainable banking in Kenya that combines market-driven and compliance approaches to regulation. This would entail the formulation of industry-developed voluntary codes and guidelines and the establishment of a regulatory entity to ensure adherence to such guidelines, aiming for a more synergistic and effective approach to sustainability in the financial sector. The study's focus on sustainability in the financial sector is timely and relevant, emphasizing the necessity for an integrated approach in a sector with significant societal, environmental, and economic impacts. The proposed hybrid model offers a pragmatic solution, balancing flexibility and compliance, which can potentially foster widespread adoption and adherence. However, the study would benefit from a more in-

depth exploration of the practicalities of implementing the proposed model, including potential challenges, stakeholders' roles, and strategies to foster collaboration and coordination among them.

Dal Maso, Olsen, Dong, Pedersen and Hauschild (2020) provides a comprehensive analysis of the synergies and trade-offs between environmental, social, and economic impacts of mini-grids, using the Initiative for Climate Action Transparency Sustainable Development Methodology. This paper investigates the implications beyond greenhouse gas impacts of 146 solar PV mini-grids under construction in Kenya and how they align with the Sustainable Development Goals and Kenya's nationally determined contributions. The qualitative and quantitative analyses presented aim to offer evidence-based support to policymakers for formulating sustainable rural electrification policies. This study is pivotal, providing comprehensive insights into the multifaceted impacts of mini-grid projects and their alignment with national and global sustainability goals. By focusing on the under-researched area of the interplay between environmental, social, and economic implications of mini-grids, it contributes valuable knowledge to the field of sustainable development and energy policy. However, the study could benefit from broader geographical coverage, examining a diverse range of environments and community settings to enhance the generalizability of its findings.

Munene (2019) conducted a study on Strathmore University contributions to sustainable development in Kenya through reduction of carbon emissions. Strathmore University in sub-Saharan Africa has notably achieved a zero-carbon footprint, boasting the largest rooftop solar installation in the region with 2,400 panels set atop six buildings. Located in Kenya, an equatorial region with consistent sunlight, the university effectively

utilized financial support from the French Government to install a 600kW grid-connected solar photovoltaic power system. This system not only fulfills the university's electricity needs but also generates surplus power which is sold to the utility through a power purchase agreement. This study is impactful, shedding light on the vast potentials of renewable energy within educational institutions and demonstrating how universities can be pioneers in environmental preservation and energy transformation, particularly in regions with optimal conditions for solar power. However, a more detailed analysis of the economic and social impact arising from such green energy projects would offer a more comprehensive insight into the benefits and potential challenges of such endeavors.

2.4 Summary of Literature Review and Research Gaps

The link between public private partnership and sustainable development has been worked upon in countless theoretical frameworks. Institutional theory, stakeholder theory, and systems theory are some of the theories used in this examination. Several empirical research on public private partnership and sustainable development of organizations have been conducted locally and abroad. From the reviewed literature, the relationship between public private partnership and sustainable development in the context of Murang'a County presents several research gaps that can be addressed through further study.

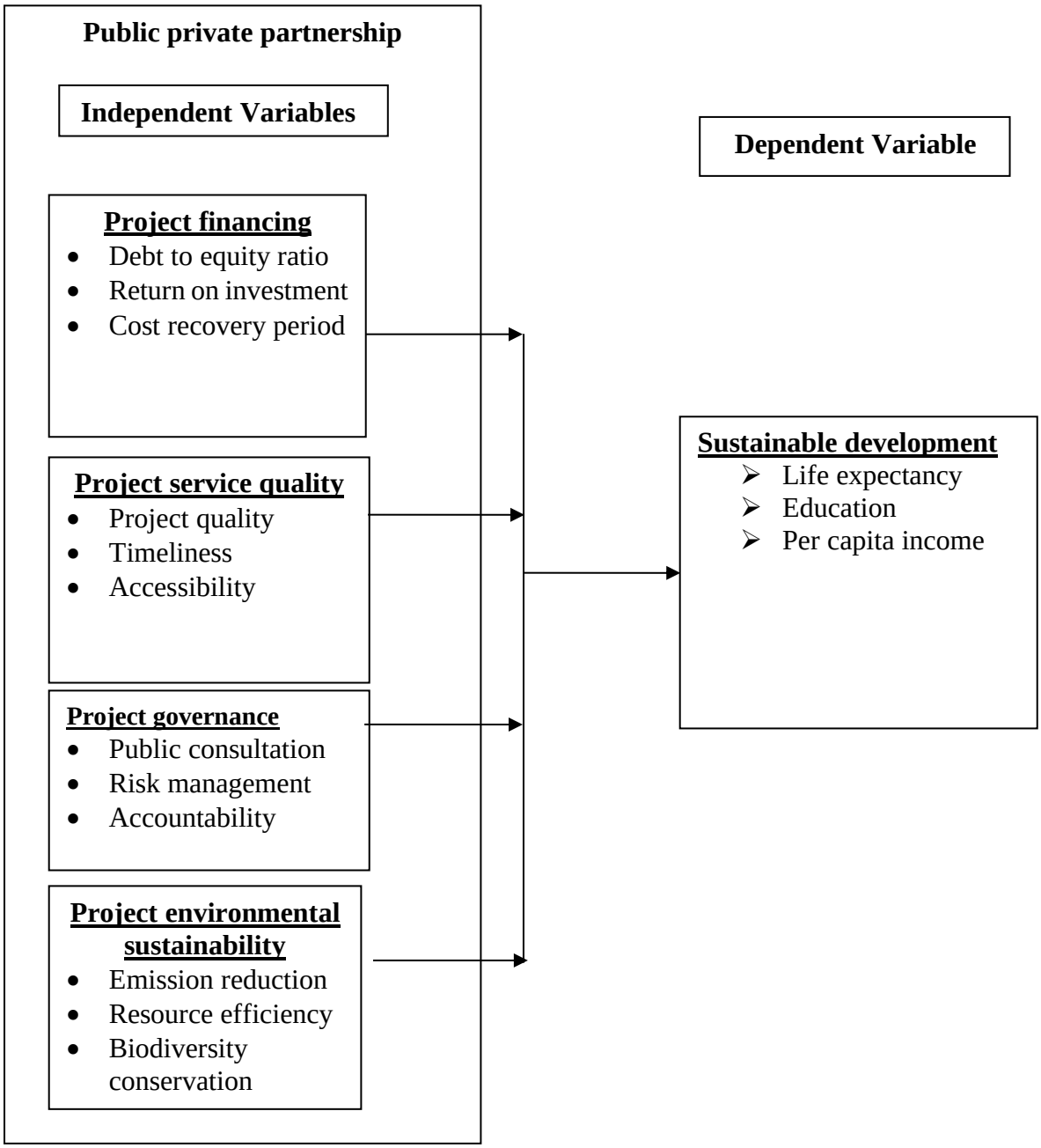
First, most of the studies conducted locally have operationalized public private partnership and sustainable development in different ways. The current study aimed to address these conceptual gaps that exist. There are also contextual gaps that arise from previous studies as most of them have been conducted in different contexts and their findings cannot be generalized in Murang'a county due to differences in social and economic settings. The current study was based on these research gaps.

2.5 Conceptual Framework

The model developed shows the survey's variables. Project financing, project service quality, project governance and project environmental sustainability were all independent variables. The dependent variable was sustainable development.

FIGURE 2.1:

Conceptual Framework



2.6 Operationalization of Variables

TABLE 2.1

Operationalization of Variables

Variable type	Variable	Indicators	Measurement scales
Dependent	Sustainable development	• Life expectancy • Education • Per capita income	Likert/ordinal
Independent	Project financing	• Debt to equity ratio • Return on investment • Cost recovery period	Likert/ordinal
Independent	Project service quality	• Project quality • Timeliness • Accessibility	Likert/ordinal
Independent	Project governance	• Public consultation • Risk management • Accountability	Likert/ordinal
Independent	Project environmental sustainability	• Emission reduction • Resource efficiency • Biodiversity conservation	Likert/ordinal

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this section, the focus was on the research design that was employed as a guideline for this research. Other sections discussed include the target population for the research, the method of sampling, the instruments and procedures for collecting data, and finally, the collection and analysis of data, and how the findings were presented.

.3.2 Research Design

The conceptual context surrounding the carrying out of the survey refers to research design. A descriptive cross-sectional research design was employed to address the study's research problem. Descriptive research was geared towards recognizing the occurrence of a particular phenomenon and its attributes, encompassing factors like its nature, timing, and manner of occurrence (Cooper & Schindler, 2018). This design was suitable since it permitted the researcher to use quantitative data to determine the effect of public private partnership on the sustainable development of Murang'a County.

3.3 Target Population

The term target population can be defined as a collection of items or people with identical structures or qualities (Kothari, 2019). The characteristic is commonly shared by all population members. The target population of this study was the 10 PPP projects that have been implemented in Murang'a County as at August 2023. The unit of observation was the county government officials and private sectors partners for each PPP project.

Census was used in this study where all the 10 PPP projects in Murang'a County were involved in this study.

3.4 Sample Size and Sampling Procedure

Sampling refers to the entire procedure of picking out individuals or objects from a larger population. The technique used to choose the sample is called the sampling technique. The study used a census sampling approach to investigate the 10 PPP projects that have been implemented in Murang'a County. Since the target population was relatively small, the study adopted a census sampling method concerning the element of investigation, which was the 10 PPP projects that have been implemented in Murang'a County. The unit of observation were 3 county government officials and 3 private sectors partners for each PPP project giving a total of 60 respondents

3.5 Research Instruments

Data collection involves the structured process of acquiring and scrutinizing data linked to specific variables of interest. Its objective is to address research inquiries, test hypotheses, and assess outcomes (Burns & Burns, 2018). The type of information required dictates the selection of research tools. Survey participants were requested to complete a questionnaire to gather primary data. This primary data played a crucial role in depicting the actual relationship between the dependent and independent variables. Opting for a questionnaire was justified due to its affordability, reliability, and efficiency in swiftly collecting data. The questions were designed in a manner that encourages closed-ended responses, enabling the researcher to obtain precise answers.

3.6 Data Collection Procedures

Data collection involves the systematic process of gathering empirical information with the intention of gaining unique insights into a particular scenario and addressing the queries that instigated the study (Khan, 2018). Permission to gather data was obtained from relevant authorities. The individuals providing information were expected to possess adequate expertise; therefore, a thoughtfully crafted questionnaire was employed for data collection. The researcher distributed the questionnaire to three county government officials and three private sector partners for each public-private partnership (PPP) project, assuming their familiarity with such collaborations. The questionnaire delivery was facilitated using Google Forms. Efforts were made to conduct follow-ups to ensure a substantial response rate. The entire process was conducted while upholding ethical considerations.

3.7 Pilot Test

Accuracy and relevance of the research instrument is critical. In this regard this study conducted a pilot study. A pilot study was done in determining the feasibility of conducting a complete study. To establish the reliability and validity of the questionnaire, a pilot study was conducted on a sample of 10% of the 60 target respondents, which involved 6 participants. The researcher distributed the questionnaire to the 6 respondents in order to obtain their feedback on the questions as well as any areas where the respondents believe changes are required, to make it more consistent and reliable in answering the research objectives. The 6 respondents were not involved in the final study.

3.7.1 Validity of Data Collection Instrument

The validity of an Instrument pertains to its capability to accurately gauge a specific concept (Cooper & Schindler, 2018). On the flip side, construct validity is utilized to ascertain whether the practical interpretation of variables corresponds to the intended theoretical significance of a concept. To accomplish this, the researcher adapted an existing questionnaire from prior research endeavors to align it with the research objectives. Simultaneously, the input of experts authenticated content validity. This involved engaging study supervisors who meticulously reviewed the questionnaire and provide their informed judgments to ensure comprehensive coverage of all study variables. They also cross-verified the study to confirm that the theoretical aspects were presented in alignment with their original conceptualization.

3.7.2 Reliability of Data Collection Instrument

Reliability is a metric that is utilized in describing the overall instrument consistency (Cooper & Schindler, 2018). A measure is considered to have high reliability when it consistently produces similar results when applied in the same circumstances. The use of Cronbach alpha analysis assisted in evaluating the dependability of the research tools by revealing the precision of the internal data gathering instrument. A reasonable reliability statistic that shows a true "base" score is Cronbach's Alpha. Cronbach's Alpha is crucial to a researcher in verifying the validity and reliability of the questionnaire, even if comparable questions are substituted for some of the original ones (Khan, 2018). A reliability rating between 0.7 and 0.8 is typically regarded as adequate, and over 0.8 as exceptional. The study was subjected to this threshold. The reliability test results are as shown in Table 3.1

TABLE 3.1

Reliability Results

Variables	Items	Cronbach Alpha	Remark
Project financing	6	.859	Reliable
Project service quality	6	.782	Reliable
Project governance	6	.807	Reliable
Project environmental sustainability	6	.826	Reliable
Sustainable development	6	.914	Reliable

3.8 Data Analysis and Presentation

The procedure of refining and organizing that raw data into a clear systematic and scientific form in which it can easily be interpreted hence understood is referred to as data analysis (Burns & Burns, 2018). According to Kothari (2019), it entails a series of closely linked operations aimed at summarizing as well as arranging gathered data in such a way that it addresses the research query. The researcher reviewed the questionnaires, numbering them, and ensuring that they were adequate and complete. Based on their suitability, the questionnaires were sorted. Each question received a different code, which was then scored. To determine the strength of emergent themes, the data was subsequently reviewed and summarized using a computer. The mean, as a central tendency measure, as well as standard deviation, as a measure of dispersion was utilized in analyzing the descriptive elements of the data while correlation and regression was utilized to conduct analysis on existence of relationships between and among variables. SPSS version 27 was utilized.

3.8.1 Model Summary

The regression model below was used:

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$$

Where: Y = Sustainable development

α =y regression intercept.

β_1, β_2, β_3, β_4= Model coefficients

X_1 = Project financing

X_2= Project service quality

X_3= Project governance

X_4= Project environmental sustainability

ε =error term

3.9 Pretesting of Multiple Regression Assumptions

Before continuing to the calculation of the equations, diagnostic tests were run to guarantee that no violations of the classical linear regression model principles had occurred. When the conventions of a classical regression model are violated, skewed as well as inefficient model parameters result. As a result, diagnostic checks were carried out to guarantee that the regression analysis conventions were not violated.

3.9.1 Normality Test

A normality test was conducted to determine whether the data is normally distributed. This was important because many statistical tests, such as t-tests, ANOVA, and regression, are based on the assumption that the data is normally distributed. If the data is not normally distributed, the results of these tests may be inaccurate. The study utilized statistical tests like the Shapiro-Wilk test or the Kolmogorov-Smirnov test to test for normality.

3.9.2 Multicollinearity Test

Multicollinearity was determined in the analysis using a correlation matrix, with an optimal 0.8 multicollinearity threshold (Cooper & Schindler, 2018). When

multicollinearity is not taken into account, infinite standard errors and undetermined regression coefficients arise, resulting in high standard errors. This impacts the precision with which the null hypothesis is rejected or not rejected. The magnitude of the multicollinearity has an effect on the estimation process. As a result, a correlation coefficient of greater than 0.8 indicates extreme multicollinearity.

3.9.3 Heteroscedasticity

If heteroscedasticity occurs, it must be checked and completely accounted for in the Classical Linear Regression Model (CLRM). The error term has a constant variance, according to the CLRM. If the error variance is not constant, the data is said to be homoscedastic. If a regression analysis is run before checking for heteroscedasticity, the estimated coefficients will be unbiased and the standard errors will be incorrect. In this research, panel level heteroscedasticity was assessed via the Likelihood Ratio (LR) test invented by Khan (2018). The null hypothesis in this test was presence of homoscedastic error variance.

3.10 Ethical Considerations

The researcher addressed the following ethical issues: participant's consent, confidentiality and anonymity throughout the research process and reporting. The researcher obtained approval from KCA University. The approval was presented to the Murang'a County government by the researcher to obtain the final authority. The respondents were requested to participate in the study voluntarily. The researcher notified the participants of their rights for information, asking questions, and that they can withdraw from the research at will. The respondents were also assured of their anonymity and that the information they provide towards the study would be treated with confidentiality and

for the sole purpose of this study. Information received was also treated objectively and was not altered for a desired objective.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

In this chapter, the survey's outcomes are presented. This section of the chapter are general information sections, which include demographic data and the response rate. The chapter also emphasizes the descriptive and inference statistics in relation to the aims of the research.

4.2 Response Rate

In a research study, the response rate is calculated as the number of received replies divided by the number of target participants. The response rate, which is frequently expressed as a percentage, is also known as the completion rate or return rate. Details on the response rate for this research are provided in Table 4.1.

TABLE 4.1

Response Rate

Response Rate	Frequency	Percent
Returned	48	80
Unreturned	12	20
Total	**60**	**100**

Table 4.1 shows that 60 questionnaires were distributed to 3 county government officials and 3 private sectors partners for each of the 10 PPP projects in Murang'a County. Only 48 of the 60 questionnaires dispersed to the target respondents were fully filled and returned, translating to 80 percent study response rate, according to the study's conclusions. This supports Khan (2018) assertion that analysis and conclusion-drawing are appropriate for studies with a response rate of 70% or more.

4.3 Demographic Characteristics

Demographic information provides a snapshot of the characteristics of the respondents. This information helps to describe the sample or population under study and provides a basis for analyzing and interpreting the data in relation to these demographic variables. It allows researchers to understand the demographic composition of the sample and identify any potential biases or limitations in the data. The first questionnaire segment intended to get data of the general information concerning the profile of the respondents. The segment covered age, gender, highest levels of education and number of years dealing with PPPs.

4.3.1 Gender of the Respondents

The target respondents were implored to state their gender. Table 4.2 displays the findings.

TABLE 4.2

Gender Distribution

Gender	Frequency	Percentage
Male	27	56.3
Female	21	43.7
Total	**48**	**100**

The findings revealed that there are slightly more males (56.3%) than females (43.7%) involved in PPP projects in Murang'a County, Kenya. This is a positive finding, as it suggests that women are increasingly being involved in these important projects. However, women are still underrepresented in PPP projects, and there is room for improvement.

4.3.2 Age of the Respondents

The study wanted to establish the age of the participants involved in this research. Age is closely tied to the respondent's stage in the lifecycle and their corresponding developmental milestones, responsibilities, and priorities. Different age groups may have different needs, aspirations, and challenges based on their life stage (young adulthood, middle age, or older adulthood). Knowing the respondents' ages is crucial since a person's age might affect how they respond to the survey. The results are shown in Table 4.3.

TABLE 4.3

Respondents' Age Composition

Age	Frequency	Percentage
Below 30 years	2	4.2
31-40 years	14	29.2
41-50 years	22	45.8
Above 50 years	10	20.8
Total	**48**	**100**

Table 4.3 shows the age composition of the respondents in the study. The majority of respondents (45.8%) are in the 41-50 age group, followed by the 31-40 age group (29.2%). Only a small percentage of respondents are below 30 years old (4.2%) or above 50 years old (20.8%). This age composition suggests that the study respondents are a relatively experienced group of people. They are likely to be established in their careers and have a good understanding of the topic of the study. This is beneficial for the study, as it means that the data collected is likely to be reliable and informative.

4.3.3 Highest Level of Education

The participants were expected to input their highest education level. The finds are illustrated in Table 4.4.

TABLE 4.4

Highest Level of Education

Education	Frequency	Percentage
Diploma	8	16.7
Degree	26	54.2
Masters	13	27.1
PhD	1	2.0
Total	**48**	**100%**

Table 4.4 shows that the majority of respondents (54.2%) have a degree, followed by those with a master's degree (27.1%). A smaller percentage of respondents have a diploma (16.7%) or a PhD (2.0%). This educational profile suggests that the study respondents are a relatively well-educated group of people. They are likely to have a good understanding of the topic of the study and be able to provide valuable insights. This is beneficial for the study, as it means that the data collected is likely to be reliable and informative.

4.3.4 Years of Experience with PPP

The participants were requested to designate how long they had been working with PPPs in Murang'a County. The results are as shown in Table 4.5.

Table 4.5
Years of Experience with PPP in Murang'a County

Number of years	Frequency	Percentage
0-1 years	3	6.3
2-3 years	5	10.4
4-5 years	39	81.3
Above 5 years	1	2.0
Total	**48**	**100%**

Table 4.5 shows the years of experience with PPPs in Murang'a County of the respondents in the study. The vast majority of respondents (81.3%) have 4-5 years of experience, with a small percentage having 0-1 years (6.3%), 2-3 years (10.4%), or above

5 years (2.0%). This suggests that the majority of respondents have significant experience with PPPs in Murang'a County. This is a positive finding, as it means that the data collected is likely to be reliable and informative. The respondents are likely to be able to provide valuable insights into the effects of PPPs on sustainable development in Murang'a County.

4.4 Descriptive Statistics

The researcher was able to synthesize and define the key traits, patterns, and distributions of the gathered data using descriptive statistics. Statistical summaries that transmitted crucial information about central tendency, variability, and the shape of the data distribution were supplied by measures like mean and standard deviation. Each variable under study's descriptive data are reported in the subheading as percentages, means, and standard deviations.

4.4.1 Project Financing

Table 4.6 gives the mean as well as standard deviation for the definite project financing indicators. The overall mean score for the statements is 4.07 with a standard deviation of 0.52, indicating a generally positive perception of project financing among the respondents with moderate variability in the responses across the different statements. From Table 4.6, it is clear that respondents generally rated project financing elements positively, as all mean values are relatively high, ranging from 3.88 to 4.38 on an assumed 5-point scale. The number of responses for each statement is consistent at 48, representing data collected from officials related to each of the ten PPP projects in the county. The statement “The project financing structure is appropriately balanced between debt and equity” received the highest average rating of 4.38 with a standard deviation of 0.48, suggesting high agreement among respondents with relatively little variation in their

responses. This implies a general consensus that the projects have a well-balanced financing structure which is integral for sustainable development.

TABLE 4.6

Descriptive Statistics for Project Financing

Statements	N	Mean	Std. Dev
a) The project financing structure is appropriately balanced between debt and equity.	48	4.38	0.48
b) The project has secured adequate financial resources to ensure its successful implementation.	48	4.00	0.50
c) The project financing plan includes provisions for managing financial risks effectively.	48	3.88	0.33
d) The project has a clear and realistic plan for achieving financial sustainability.	48	4.00	0.71
e) The project's financial management practices comply with relevant regulatory frameworks.	48	4.25	0.43
f) The project has established mechanisms for monitoring and reporting financial performance.	48	3.88	0.33
Overall mean Score	**48**	**4.07**	**0.52**

Regarding the adequacy of financial resources, the statement, “The project has secured adequate financial resources to ensure its successful implementation,” has a mean score of 4.00 and a standard deviation of 0.50. This indicates that the majority of respondents believe that the projects have secured sufficient funds, with a moderate level of variation in responses. The provisions for managing financial risks effectively in the project financing plan are represented with a mean of 3.88 and a standard deviation of 0.33. This lower mean score, along with the lower standard deviation, suggests that while respondents generally agreed with the statement, there’s a lower level of variability and possibly some concerns regarding risk management provisions.

Similarly, the lowest mean of 3.88 with a standard deviation of 0.33 is associated with the statement addressing the establishment of mechanisms for monitoring and reporting financial performance. This implies that this area, much like risk management provisions, might need more attention, as it holds importance in maintaining financial transparency and accountability in projects. The notion that the project has a clear and realistic plan for achieving financial sustainability and that the project's financial management practices comply with relevant regulatory frameworks are both highly agreed upon, with mean values of 4.00 and 4.25 and standard deviations of 0.71 and 0.43 respectively. The higher standard deviation in the financial sustainability plan may suggest a greater spread in the responses, implying varying opinions or understandings on the clarity and realism of the financial sustainability plans among respondents.

4.4.2 Project Service Quality

Table 4.7 aims to represent the descriptive statistics concerning Project Service Quality of the public-private partnership projects in Murang'a County, Kenya. The statement "The project consistently meets or exceeds customer expectations regarding service delivery" received an average rating of 3.63 with a standard deviation of 0.70. Similarly, "The project maintains high standards of service quality throughout its duration" received the same mean value and a close standard deviation of 0.86. This suggests a moderate level of agreement with a fairly high spread in the responses, indicating varying opinions among respondents about whether projects consistently meet customer expectations and maintain high standards of service quality. The statement "The project team demonstrates responsiveness and proactiveness in addressing customer needs" received a slightly lower mean of 3.50 with a high standard deviation of 0.87, implying

lesser agreement and higher variability in responses about the project team's responsiveness and proactiveness, possibly pointing to areas that might need improvement in customer service responsiveness and proactivity.

TABLE 4.7

Descriptive Statistics for Project Service Quality

Statements	N	Mean	Std. Dev
a) The project consistently meets or exceeds customer expectations regarding service delivery.	48	3.63	0.70
b) The project team demonstrates responsiveness and proactiveness in addressing customer needs.	48	3.50	0.87
c) The project maintains high standards of service quality throughout its duration.	48	3.63	0.86
d) Customers perceive the project's services as reliable, efficient, and of high quality.	48	4.25	0.43
e) The project has effective communication channels in place to address service-related concerns.	48	4.75	0.43
f) The project regularly evaluates and improves its service quality based on customer feedback.	48	4.50	0.50
Overall Mean Score	**48**	**4.04**	**0.62**

Conversely, the statement "Customers perceive the project's services as reliable, efficient, and of high quality" was met with strong agreement, having a mean of 4.25 and a relatively lower standard deviation of 0.43. This shows that the perceived reliability, efficiency, and quality of the project's services are generally rated highly by respondents with less variability in responses, suggesting a strong consensus in this area. The highest level of agreement was with the statement, "The project has effective communication channels in place to address service-related concerns", receiving a mean value of 4.75 and a standard deviation of 0.43. This demonstrates a strong positive perception of the project's

communication channels, with little variation in the responses, pointing to the effectiveness of the project's communication strategies in addressing service-related concerns.

Additionally, the statement "The project regularly evaluates and improves its service quality based on customer feedback" received a high mean of 4.50 with a standard deviation of 0.50. This signifies that there is a strong consensus among respondents that the project is proactive in evaluating and improving its services based on customer input, which is crucial for continuous improvement and customer satisfaction. The overall mean score of the six statements is 4.04, with a standard deviation of 0.62, indicating a generally favorable perception of project service quality among the respondents. However, the variability in individual statements' means and standard deviations highlight certain areas where there are differing opinions and where there might be room for improvement, especially regarding meeting customer expectations, maintaining service quality, and project team responsiveness.

4.4.3 Project Governance

The mean as well as standard deviation for the precise attributes of project governance are as presented in Table 4.8. Statement a), asserting that "Project stakeholders are actively involved in decision-making processes, ensuring transparency and inclusiveness," and statement b), positing that "The project has established clear roles and responsibilities for all stakeholders involved," both received a mean score of 3.75. Statement a) has a standard deviation of 0.66, and statement b) has a lower standard deviation of 0.43, indicating that responses regarding clear roles and responsibilities were more concentrated around the mean. The shared mean value suggests a moderate level of

agreement that the projects have inclusive decision-making processes and clear role demarcation, vital components for effective governance.

TABLE 4.8

Descriptive Statistics for Project Governance

Statements	N	Mean	Std. Dev
a) Project stakeholders are actively involved in decision-making processes, ensuring transparency and inclusiveness.	48	3.75	0.66
b) The project has established clear roles and responsibilities for all stakeholders involved.	48	3.75	0.43
c) The project demonstrates strong accountability mechanisms for effective governance.	48	3.38	0.70
d) The project's governance framework ensures efficient coordination among stakeholders.	48	3.88	0.60
e) The project maintains effective risk management practices to mitigate governance-related risks.	48	3.50	1.00
f) The project adheres to relevant laws, regulations, and ethical standards in its governance practices.	48	3.13	0.78
Overall Mean Score	**48**	**3.57**	**0.73**

Statement c) addresses accountability mechanisms with, “The project demonstrates strong accountability mechanisms for effective governance,” and has a mean of 3.38 and a standard deviation of 0.70. This lower mean indicates a lesser agreement among respondents about the strength of accountability mechanisms in place, and the higher standard deviation suggests diverse opinions, potentially highlighting a critical area for improvement in project governance. The statement, “The project's governance framework ensures efficient coordination among stakeholders,” obtained the highest mean score of 3.88 with a standard deviation of 0.60. This reveals a relatively higher level of agreement

among respondents that the governance framework is effective for stakeholder coordination, crucial for the successful execution of any project.

Regarding risk management practices, statement e), "The project maintains effective risk management practices to mitigate governance-related risks," secured a mean value of 3.50 with a higher standard deviation of 1.00, the highest in this set. This illustrates a medium level of agreement but with considerable disparity in responses, reflecting varied perceptions about the effectiveness of risk management practices in governance. The lowest mean value of 3.13, associated with a standard deviation of 0.78, is for statement f) which states, "The project adheres to relevant laws, regulations, and ethical standards in its governance practices." This lower mean with a moderately high standard deviation suggests less consensus and possibly raises concerns over adherence to laws, regulations, and ethical standards within the project governance, indicating a potential area requiring attention and rectification.

The overall mean score across all statements is 3.57, with an overall standard deviation of 0.73, signifying a moderate, but not strong, positive perception of project governance amongst respondents, accompanied by some variability in their responses. The variance in individual scores and standard deviations accentuates areas that might be performing well, like stakeholder coordination, and those that may need improvement, such as adherence to laws and regulations and the establishment of strong accountability mechanisms.

4.4.4 Project Environmental Sustainability

Table 4.9 presents the descriptive statistics for Project Environmental Sustainability within the Public-Private Partnership projects in Murang'a County, Kenya, with each

statement evaluated by 48 respondents. The statement, “The project engages stakeholders in promoting and achieving environmental sustainability goals,” reveals a higher mean of 4.25 and a lower standard deviation of 0.66, indicating that there is substantial agreement amongst respondents, with minimal variability, about the engagement of stakeholders in promoting and achieving sustainability goals. This implies that involving stakeholders is deemed a crucial and well-executed element in environmental sustainability for these projects.

TABLE 4.9

Descriptive Statistics for Project Environmental Sustainability

Statements	N	Mean	Std. Dev
a) The project incorporates measures to reduce its carbon footprint and minimize greenhouse gas emissions.	48	4.13	1.05
b) The project actively promotes resource conservation and efficient use of natural resources.	48	4.00	1.00
c) The project implements sustainable waste management practices throughout its lifecycle.	48	3.88	0.93
d) The project considers the protection and preservation of biodiversity in its planning and operations.	48	3.88	1.05
e) The project complies with environmental regulations and standards in its activities.	48	3.63	0.99
f) The project engages stakeholders in promoting and achieving environmental sustainability goals.	48	4.25	0.66
Overall Mean Score	**48**	**3.96**	**0.92**

Statement a), “The project incorporates measures to reduce its carbon footprint and minimize greenhouse gas emissions,” has a mean value of 4.13, with a somewhat high standard deviation of 1.05. This suggests that there is generally a positive perception of the project’s efforts to mitigate environmental impact through carbon footprint reduction,

albeit with significant variation in responses, possibly reflecting differences in opinions or understanding of the measures implemented. Regarding resource conservation, the statement, “The project actively promotes resource conservation and efficient use of natural resources,” garnered a mean of 4.00 and a standard deviation of 1.00, indicating a positive consensus on resource conservation, but also showing notable variation in the opinions of respondents.

For statements c) and d), which respectively refer to the project implementing sustainable waste management practices and considering the protection and preservation of biodiversity in its planning and operations, both share a mean value of 3.88. However, they have varying standard deviations, 0.93 and 1.05 respectively. This denotes a moderate agreement among respondents but suggests the presence of diverse views, particularly concerning biodiversity protection, emphasizing potential areas for further improvement in waste management and biodiversity preservation strategies. The statement e), “The project complies with environmental regulations and standards in its activities,” has a lower mean of 3.63 and a high standard deviation of 0.99. This implies that there might be concerns or varied perceptions regarding the project's compliance with environmental regulations, warranting closer scrutiny and possible enhancement in adherence to environmental norms and standards.

The overall mean score for the statements related to environmental sustainability is 3.96, with a standard deviation of 0.92, reflecting generally favorable attitudes towards the projects' environmental sustainability initiatives. However, the relatively high standard deviations in most statements suggest a considerable dispersion in the responses, pointing to different interpretations, experiences, or levels of awareness among the respondents

regarding the environmental sustainability efforts of the projects. In conclusion, while the projects are generally perceived as environmentally sustainable, there are evident discrepancies in opinions, particularly in areas such as compliance with environmental regulations and biodiversity preservation, that may necessitate further exploration and addressal.

4.4.5 Sustainable Development

Table 4.10 provides an in-depth look into the respondents' perception of sustainable development across various dimensions in Murang'a County, Kenya. Each statement evaluates different aspects of sustainable development, with both mean and standard deviation values included for each statement.

TABLE 4.10

Descriptive Statistics for Sustainable Development

Statement	N	Mean	Std. Dev.
The overall well-being and quality of life in the community/country has improved over time.	48	4.38	0.70
Access to education and knowledge has expanded, leading to better opportunities for personal and societal development.	48	3.75	0.97
There has been a significant reduction in poverty and inequality, promoting a more inclusive society.	48	3.88	1.05
The healthcare infrastructure and services have improved, leading to increased life expectancy and better health outcomes.	48	4.00	1.00
Environmental conservation and sustainability practices are prioritized, ensuring the protection of natural resources for future generations.	48	3.88	1.05
Economic development has resulted in increased income levels, job opportunities, and overall economic well-being.	48	4.38	0.48
Average	**48**	**4.05**	**0.89**

The statement, “The overall well-being and quality of life in the community/country has improved over time,” and “Economic development has resulted in increased income levels, job opportunities, and overall economic well-being,” both exhibit a high mean value of 4.38. However, they have different standard deviations, with 0.70 and 0.48, respectively, indicating that respondents largely agree on the positive impact on overall well-being and economic development, but there is slightly more variability in responses about overall well-being. The proposition that “Access to education and knowledge has expanded, leading to better opportunities for personal and societal development,” has a mean of 3.75 and a standard deviation of 0.97, suggesting moderate agreement among respondents but also notable variability in perceptions or experiences regarding access to education and knowledge, signaling potential discrepancies in educational opportunities or access to knowledge in the community.

Regarding poverty and inequality reduction, the statement, “There has been a significant reduction in poverty and inequality, promoting a more inclusive society,” exhibits a mean value of 3.88 with a high standard deviation of 1.05, implying a moderate consensus but substantial variability among respondents about the projects’ contribution to reducing poverty and inequality. This could reflect varying experiences or perceptions of inclusion and equality within society. The statement, “The healthcare infrastructure and services have improved, leading to increased life expectancy and better health outcomes,” has a mean of 4.00 and a standard deviation of 1.00. This indicates a relatively favorable perception of improvements in healthcare infrastructure and services, albeit with considerable differences in opinions or experiences among respondents.

The proposition related to environmental conservation, "Environmental conservation and sustainability practices are prioritized, ensuring the protection of natural resources for future generations," reveals a mean of 3.88 and a high standard deviation of 1.05, similar to the statement regarding poverty and inequality. This denotes that while there is some level of agreement on environmental conservation and sustainability practices, there exists considerable divergence in the responses, suggesting differing perspectives or experiences regarding the prioritization and effectiveness of such practices.

Finally, the overall average mean score for the statements is 4.05, with an average standard deviation of 0.89. This demonstrates that, on average, there is a positive perception of the impact of the projects on sustainable development. However, the variability in responses for individual statements, especially those related to education, inequality, and environmental conservation, indicates that experiences and perceptions are not uniform among respondents, hinting at areas that may require further attention and enhancement to ensure the projects' contributions to sustainable development.

4.5 Correlation Analysis

The correlation result reveals significant relationships between sustainable development and the independent variables, specifically project financing, project service quality, project governance, and project environmental sustainability in Murang'a County, Kenya. The results are as shown in Table 4.11. A strong positive correlation of .717, significant at the 0.01 level, is observed between sustainable development and project financing, indicating that an improvement in project financing is associated with an enhancement in sustainable development. The p-value of .000 suggests that this correlation

is statistically significant, providing strong evidence that the relationship between these variables is not due to random chance.

A very strong positive correlation exists between sustainable development and project service quality, represented by a Pearson correlation coefficient of .933, which is also significant at the 0.01 level. The significance value of .000 indicates a high level of confidence in this correlation, reflecting those high-quality services, demonstrated responsiveness, and effective communication in projects are critical components in enhancing sustainable development.

TABLE 4.11

Correlation Results

		sustainable development	Project financing	Project service quality	Project governance	Project environmental sustainability
sustainable development	Pearson Correlation	1				
	Sig. (2-tailed)					
Project financing	Pearson Correlation	.717**	1			
	Sig. (2-tailed)	.000				
Project service quality	Pearson Correlation	.933**	.537**	1		
	Sig. (2-tailed)	.000	.000			
Project governance	Pearson Correlation	.566**	.618**	.417**	1	
	Sig. (2-tailed)	.000	.000	.000		
Project environmental sustainability	Pearson Correlation	.951**	.551**	.629**	.460**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).
b. Listwise N=48

The correlation coefficient between sustainable development and project governance is .566, denoting a moderate to strong positive relationship, which is significant at the 0.01 level, with a p-value of .000. This signifies that effective governance mechanisms, transparency, accountability, and adherence to relevant laws and ethical standards in project implementation, are influential factors in achieving sustainable development. Project environmental sustainability shows a very strong positive correlation with sustainable development, with a correlation coefficient of .951, significant at the 0.01 level. The p-value of .000 confirms the statistical significance of this correlation, indicating that implementing measures for environmental conservation, resource efficiency, and adherence to environmental regulations are imperative for achieving sustainable development.

4.6 Diagnostic Tests

Assuming that the data follows all the assumptions of ordinary least square when performing statistical modus operandi such as correlations, regression, t-tests, and variance analysis. These analyses need to be verified since they include statistical flaws. To check for these statistical mistakes, this study checked for normalcy, multicollinearity, and heteroskedasticity. This was done to see whether the data set could be effectively modelled. To test normality, we used Shapiro-Wilk's test. Variance inflation factors and tolerance were used to examine multicollinearity and Levene's test was used to examine heteroskedasticity. The outcomes of various statistical tests are shown in this subsection.

4.6.1 Tests of Normality

The Shapiro-Wilk test was used to look for normalcy. This test looks for skewness, kurtosis, or both to evaluate how normal the data are. The Shapiro-Wilk statistic has a range

of 0 to 1, and values higher than 0.05 are indicative of normal data. The data significantly deviates from the normal distribution when it is less than 0.05. Data normality was verified using the Shapiro-Wilk test, and the results indicated that all variables had a p-value larger than 0.05 ($p > 0.05$). The notion that the sample distribution of the mean is normal is referred to as "normality". Table 4.12's findings show that all of the p values are higher than the threshold value of 0.05, supporting the theory that the data came from a population with a regularly distributed distribution.

TABLE 4.12

Test of Normality

	Shapiro-Wilk		
Study variables	Statistic	Df	Sig.
Project financing	0.829	48	0.173
Project service quality	0.874	48	0.180
Project governance	0.880	48	0.192
Project environmental sustainability	0.898	48	0.203
Sustainable development	0.929	48	0.222

4.6.2 Tests of Multicollinearity

Multicollinearity is the term for when there is a considerable amount of correlation between independent variables. To examine multicollinearity, one uses the variance inflation factor (VIF). The VIF counts the amount that the estimated coefficient's variance is exaggerated in the absence of any connection between the independent variables. If there is no correlation between two independent variables, all VIFs will be 1. A VIF of 5 indicates some multicollinearity, whereas a VIF of 10 indicates severe multicollinearity. The variance inflation factor (VIF), which was used to this study's multicollinearity test, is displayed in the results. The opposite of variance inflation factor, tolerance measures the

effect of one independent variable on all other independent variables. Table 4.13 displays the test outcomes.

TABLE 4.13

Test of Multicollinearity

Variable	VIF	Tolerance
Project financing	4.372	0.229
Project service quality	1.778	0.562
Project governance	2.679	0.373
Project environmental sustainability	3.422	0.292
Mean VIF	3.063	

All of the variables had a VIF between 1.778 and 4.372, according to the results in Table 4.13, and tolerance values ranged from 0.229 to 0.562. This demonstrated the absence of multicollinearity in the independent variables.

4.6.3 Tests of Heteroscedasticity

When the variance of the errors in the dependent variable is not constant over the whole set of data, heteroscedasticity takes place. It happens when the values of the independent variables change the variance of errors. Heteroscedasticity in regression analysis is a systematic change in the dispersion of the residuals over the spectrum of measured values. Ordinary least squares regression makes the assumption that residuals come from a population with constant variance. High levels of heteroscedasticity in this regression can significantly skew the outcomes, undermine the analysis, and increase the likelihood of a type 1 error. In this study, homogeneity was assessed using heteroscedasticity Breusch-Pagan/Cook-Weisberg test. The variances between groups are unequal if the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity is statistically

significant = 0.05. It is a test to examine if the scores in the variables have about the same dispersion. The outcomes are displayed in Table 4.14.

TABLE 4.14

Test of Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity		
chi2(1)	=	0.6395
Prob > chi2	=	0.4211

Table 4.14 demonstrates that the null hypothesis of homoskedastic error terms is not rejected with a p-value of 0.4211.

4.7 Regression Analysis

Using regression analysis enabled the researcher to evaluate the influence of project financing, project service quality, project governance, and project environmental sustainability on sustainable development as well as the association between changes in the independent variables and changes in sustainable development. Model fitness, Analysis of Variance (ANOVA), and regression coefficients are all included in the regression analysis. This is shown in the tables below, Tables 4.15, 4.16 and 4.17.

TABLE 4.15

Model Fitness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.970[a]	.941	.936	.227426

a. Predictors: (Constant), Project environmental sustainability, Project governance, Project service quality, Project financing

As shown in Table 4.15, project environmental sustainability, project financing, project governance, and project service quality) explain approximately 94.1% of the variance in the dependent variable. This suggests that these predictors have a significant effect on the outcome variable, with other factors beyond the scope of the study explaining the remaining variance. The model that links the variables is also founded to be sufficient. The R value signifies the correlation coefficient between the predictors and the dependent variable. In this case, the value of R is 0.970, indicating a strong positive correlation between the predictors and the dependent variable. This suggests that the predictors collectively explain a substantial portion of the variance in the dependent variable.

TABLE 4.16

Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.693	4	8.923	172.520	.000[b]
	Residual	2.224	43	.052		
	Total	37.917	47			

a. Dependent Variable: sustainable development

b. Predictors: (Constant), Project environmental sustainability, Project governance, Project service quality, Project financing

The F value of 172.520 and the sig. value of 0.000 indicate that the regression model as a whole is statistically significant. This suggests that the predictors (project environmental sustainability, project financing, project governance, and project service quality) have a significant impact on the dependent variable (sustainable development), and the model provides a better fit than just relying on chance alone.

TABLE 4.17

Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.160	.315		3.682	.001
	Project financing	.247	.084	.326	2.934	.005
	Project service quality	.265	.101	.273	2.630	.012
	Project governance	.434	.118	.356	3.687	.001
	Project environmental sustainability	.661	.100	.687	6.587	.000

a. Dependent Variable: sustainable development

The regression coefficient table revealed that the p-value for the coefficient of project financing is 0.005. Since this value is less than the conventional significance level of 0.05, it is concluded that the coefficient for project financing is statistically significant. This suggests that there is a significant effect of project financing on sustainable development. The p-value for the coefficient of project service quality is 0.012. Similar to project financing, this p-value is less than 0.05, indicating that the coefficient for project service quality is statistically significant. Thus, there is a significant effect of project service quality on sustainable development.

The p-value for the coefficient of project governance is 0.001. Once again, this p-value is less than 0.05, indicating statistical significance. Therefore, there is a significant effect of project governance on sustainable development. The p-value for the coefficient of project environmental sustainability is 0.000. Similar to the other predictors, this p-value is less than 0.05, indicating statistical significance. Hence, there is a significant effect of project environmental sustainability on sustainable development.

The following is the regression model that was estimated from the study results:

$$\mathbf{Y = 1.160 + 0.326X_1 + 0.273X_2 + 0.356X_3 + 0.687X_4}$$

Where:

Y = Sustainable development,

X_1 – Project financing,

X_2 – Project service quality,

X_3 – Project governance,

X_4 – Project environmental sustainability

4.8 Hypothesis Testing

With the use of multiple linear regressions, the hypotheses were evaluated. Results of multiple regression are shown in Table 4.17. According to the acceptance/rejection criterion, the Ho is accepted if the p value is more than 0.05 but rejected if it is less than 0.05.

4.8.1 Project Financing and Sustainable Development

The first null hypothesis, H_{01}, stated that: project financing has no substantial effect on sustainable development in Murang'a County, Kenya. The results of Table 4.17 indicate that the p-value was 0.000 which is less than 0.05. This shows that the null hypothesis is rejected, proving that project financing significantly affects the sustainable development in Murang'a County, Kenya. Project financing have a positive and substantial effect on the sustainable development in Murang'a County, Kenya ($\beta = 0.326$, $p = 0.000$). This suggests that there is a significant influence of project financing on sustainable development.

The regression results indicating that project financing has a substantial and positive effect on sustainable development in Murang'a County, Kenya align with the findings from a series of empirical studies conducted in different regions of the world. Bayliss and Van Waeyenberge (2023) found in Sub-Saharan Africa that Public-Private Partnerships (PPPs), a specific form of project financing, were correlated with enhanced sustainable development outcomes, including heightened efficiency and improved service quality in infrastructure projects. This supports the notion that private sector involvement in project financing can be pivotal in achieving better project outcomes and, consequently, enhancing sustainable development, aligning with the experiences observed in Murang'a County.

Annamalaisamy and Vepur Jayaraman's (2023) study on the Asia-Pacific region also echoes the results from Murang'a County, demonstrating a positive relationship between project finance and sustainable development outcomes such as economic growth and improved access to basic services. However, they also uncovered issues related to social justice and environmental damage, emphasizing the importance of robust regulatory frameworks, which are concerns that should also be considered in the context of Murang'a County to ensure balanced and equitable development outcomes. This study underscores the multifaceted impact of project financing and the necessity for thorough assessments and frameworks to mitigate potential adverse effects.

The study by Dusk and Bond (2022) in Europe and those by Zapata-Cantu and González (2021) in Latin America both pointed out the varied implications of project finance on sustainable development outcomes. While the European study highlighted the success of renewable energy projects in reducing carbon emissions and creating jobs, it also warned against the potential negative impacts of large-scale infrastructure projects, hinting

at the dual nature of project financing impacts. Meanwhile, the study in Latin America showed a favorable association between project financing and environmental sustainability but a mixed link with social sustainability, emphasizing the need for robust social impact assessments.

4.8.2 Project Service Quality and Sustainable Development

The second null hypothesis, H_{02}, stated that: project service quality has no significant effect on sustainable development in Murang'a County, Kenya. Table 4.17 outcomes display that the p-value was 0.000<0.05. This designates that the null hypothesis is rejected hence there is a significant effect of project service quality on sustainable development in Murang'a County, Kenya. Project service quality have a positive and substantial effect on the sustainable development in Murang'a County, Kenya ($\beta = 0.273$, $p = 0.000$). The study results show that project service quality is a significant determinant of sustainable development.

The regression results aligning high project service quality with better sustainable development outcomes in Murang'a County, Kenya, find resonance in the multiple studies presented, which span across diverse geographical locations and industrial sectors. Ika and Saint-Macary's (2023) exploration of international development projects demonstrate a clear link between higher service quality and enhanced sustainable development outcomes, including economic growth, social well-being, and environmental sustainability. This crucial insight, highlighting the correlation between service quality and long-term impacts, validates the findings from Murang'a County, emphasizing how consistent high-quality service delivery can lead to increased effectiveness and achievement of sustainable development goals in varying contexts and sectors.

Similarly, studies conducted by Wardhana and Pradana (2023) in Southeast Asia, and Vij and Nadkarni (2023) in the Middle Eastern tourist industry, reinforce the positive correlation between project service quality and sustainable development outcomes, indicating improvements in areas such as customer satisfaction, economic gains, and environmental sustainability. Taraza et al. (2023) and Zhao et al. (2021) further substantiate this, indicating that high-quality services are influential in promoting better social well-being, cost effectiveness, and environmental protection in the European healthcare and China's construction industry respectively. Despite their regional and sectorial focus, these studies together form a cohesive narrative on the universal significance of project service quality in achieving successful sustainable development outcomes.

However, despite the convergence on the role of project service quality in fostering sustainable development, these studies also underscore the importance of context and the specificity of industry and location. Each sector has its unique set of challenges and opportunities, and what applies to one may not fully transpose to another, as evident from the varied focus of the studies, ranging from healthcare to tourism to construction. The findings from Murang'a County, while corroborated by these varied studies, should therefore be considered in light of the specific contextual, industrial, and socio-economic dynamics at play. Additionally, the reliance of some studies on self-reported data and existing literature necessitates a cautious approach in generalizing the results, emphasizing the need for more diversified and nuanced research methodologies to explore the intricate dynamics between project service quality and sustainable development.

4.8.3 Project Governance and Sustainable Development

The third null hypothesis, H_{03}, stated that: project governance has no significant effect on sustainable development in Murang'a County, Kenya. Results in Table 4.17 show that the p-value was 0.000<0.05. This indicates that the null hypothesis is rejected hence there is a significant effect of project governance on sustainable development in Murang'a County, Kenya. Project governance have a positive and substantial effect on the sustainable development in Murang'a County, Kenya ($\beta = 0.356$, $p = 0.000$). The study results show that project governance is a significant determiner of sustainable development.

The positive and significant impact of project governance on sustainable development in Murang'a County, Kenya, correlates with several international studies across varied sectors and regions. Müller and Lübbeke-Wolff's (2023) study on large infrastructure projects in Western Europe demonstrated that clear governance structures and robust risk management mechanisms were pivotal for achieving positive sustainable development outcomes in terms of social, economic, and environmental sustainability. Similarly, Darko et al. (2023) found in their study on Australian infrastructure projects that efficient risk management, stakeholder participation, and performance monitoring—integral components of good project governance—were critical for ensuring sustainable development outcomes. These findings emphasize the universal relevance of effective project governance in fostering sustainability across diverse contexts and scales.

Moreover, studies by Zhang et al. (2023) and Aigbe (2023) further affirm the importance of effective project governance in achieving sustainability in IT projects in Europe and engineering projects in Africa respectively. Zhang et al. (2023) emphasized the necessity for adaptable governance frameworks to handle the dynamic nature of

technological initiatives and sustainability concerns. Aigbe (2023) highlighted the need for governance frameworks that are sensitive to the specific challenges and cultural settings of projects in Africa, underscoring the importance of context-specific approaches in project governance for achieving sustainable development outcomes.

However, while these studies broadly corroborate the regression results from Murang'a County, they also illustrate the diverse applicability of project governance mechanisms across different project types, sectors, and geographical contexts. The focus on different sectors like IT, infrastructure, and engineering in different geographical locations in these studies emphasizes the importance of adapting governance structures to the unique characteristics and requirements of each project and context. The generalizability of these findings may be limited by the specific focus of each study and their methodologies, hence emphasizing the need for more inclusive and diverse research to deepen the understanding of the interplay between project governance and sustainable development across varied contexts and sectors.

4.8.4 Project Environmental Sustainability and Sustainable Development

The fourth null hypothesis, H_{04}, stated that: project environmental sustainability has no significant effect on sustainable development in Murang'a County, Kenya. Results in Table 4.17 show that the p-value was 0.000<0.05. This indicates that the null hypothesis is rejected hence there is a significant effect of project environmental sustainability on sustainable development in Murang'a County, Kenya. Project environmental sustainability have a positive and substantial effect on the sustainable development in Murang'a County, Kenya ($\beta = 0.687$, $p = 0.000$). The study results show that project environmental sustainability is a significant determiner of sustainable development.

The regression results from Murang'a County, Kenya, highlighting the substantial and positive effect of project environmental sustainability on sustainable development are echoed in multiple empirical studies from various global contexts. Chen, Huang and Kamran's (2023) research showed a direct, beneficial correlation between companies' integration of environmentally sustainable practices and positive sustainable development outcomes, including improved economic, social performance, and stakeholder relationships. Similarly, Garran and Lechón (2023) showed that incorporating environmental sustainability in renewable energy projects in Europe resulted in multiple sustainable development benefits such as reduced greenhouse emissions and energy security, reinforcing the multifaceted impact of environmental sustainability on different aspects of development.

The relevance of environmental sustainability to sustainable development is further exemplified in Khalid, Ahmad, and Ullah's (2022) study on Middle Eastern infrastructure projects and Ibrahim, Bartsch, and Sharifi's (2020) research on water management projects in Australia. Both studies emphasize the critical role of integrating environmental sustainability measures in achieving favorable sustainable development outcomes and managing local environmental issues effectively, while also pointing to the sector-specific adaptations of sustainability practices. For instance, the incorporation of environmental sustainability strategies in water management projects emphasized the importance of sustainable water practices for long-term advantages such as water conservation and ecosystem protection.

Finally, the studies by Van Loon et al. (2020) and Opoku, Ayarkwa, and Agyekum (2019) showcase the beneficial impacts of embedding environmental sustainability in

agricultural and construction projects in Latin America and Africa, respectively. These studies underline the positive repercussions of environmental sustainability practices on resource management, biodiversity preservation, and overall social well-being in the agricultural sector and the correlation between environmental sustainability in construction projects and socio-economic and environmental advantages, thus highlighting the universality of these findings across different geographies and sectors.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

A summary, a conclusion, and recommendations to policy and practice are presented in this chapter. With the goals of the study research, the summary, conclusion, and suggestions for research improvement are offered. There are also suggestions for further studies in this chapter.

5.2 Summary

The objective of this research was to assess the effect of public private partnership on sustainable development in Murang'a County, Kenya. The specific objectives were; to determine the effect of project financing on sustainable development, to establish the effect of project service quality on sustainable development, to assess the effect of project governance on sustainable development and to determine the effect of project environmental sustainability on sustainable development of Murang'a County, Kenya. The research was based on three theories namely; the institutional theory, stakeholder theory, and systems theory. Descriptive research design was employed in this study. The target population of this study was the 10 PPP projects that have been implemented in Murang'a County as at March 8th 2023. The unit of observation were the county government officials and private sectors partners for each PPP project. Census was used in this study where all the 10 PPP projects in Murang'a County were involved in this study. Questionnaire were utilized in primary data collection. Quantitative data was collected. The collected data was analyzed through descriptive, correlational and multiple linear regression method. The research findings are described in this section.

5.2.1 Project Financing and Sustainable Development

The research's first objective was to assess project financing influence on sustainable development in Murang'a County, Kenya. The descriptive results reveal that the project financing structure is appropriately balanced between debt and equity, and the project has secured adequate financial resources to ensure its successful implementation. The project financing plan includes provisions for managing financial risks effectively, and the project has a clear and realistic plan for achieving financial sustainability. The project's financial management practices comply with relevant regulatory frameworks, and the project has established mechanisms for monitoring and reporting financial performance. However, there are some areas where the project financing could be improved. For example, the project could do more to manage financial risk.

The results also suggested that improving project financing will improve organization sustainable development. According to the regression results, a unit change in project financing resulted in a 0.326 variation in organization sustainable development. This also confirmed that project financing approach had a significant positive influence on the sustainable development in Murang'a County, Kenya. This indicates that the null hypothesis is rejected hence there is a significant effect of project financing on sustainable development in Murang'a County, Kenya.

5.2.2 Project Service Quality and Sustainable Development

The research's second objective was to evaluate the influence of project service quality on the Murang'a County' sustainable development. The descriptive results reveal that PPP projects consistently meet or exceed customer expectations regarding service delivery, and customers perceive the projects' services as reliable, efficient, and of high

quality. The projects also have effective communication channels in place to address service-related concerns, and they regularly evaluate and improve their service quality based on customer feedback. However, there are some areas where the project service quality could be improved. For example, the project team could be more responsive and proactive in addressing customer needs, and they could maintain high standards of service quality throughout the project's duration.

The results also suggested that improving project service quality will improve organization sustainable development. The findings also revealed that a unit change in project service quality might lead in a 0.273 unit change in sustainable development in Murang'a County, Kenya. This supported the notion that project service quality has a major impact on sustainable development. The null hypothesis was rejected, and it was determined that project service quality had a significant effect on sustainable development.

5.2.3 Project Governance and Sustainable Development

The research's third objective was to establish influence of project governance on Murang'a County' sustainable development. The descriptive results reveal an overall mean score across all statements that is above average signifying a moderate, but not strong, positive perception of project governance amongst respondents, accompanied by some variability in their responses. The variance in individual scores and standard deviations accentuates areas that might be performing well, like stakeholder coordination, and those that may need improvement, such as adherence to laws and regulations and the establishment of strong accountability mechanisms.

The regression results revealed that project governance and sustainable development among Murang'a County, Kenya have a positive and significant link. The findings suggested that a shift in project governance approach will boost Murang'a County' sustainable development. The null hypothesis was rejected, and conclusion made that project governance positively influences sustainable development in Murang'a County, Kenya.

5.2.4 Project Environmental Sustainability and Sustainable Development

The research's fourth objective was to establish influence of project environmental sustainability on Murang'a County' sustainable development. The descriptive results reflect generally favorable attitudes towards the projects' environmental sustainability initiatives. However, the relatively high standard deviations in most statements suggest a considerable dispersion in the responses, pointing to different interpretations, experiences, or levels of awareness among the respondents regarding the environmental sustainability efforts of the projects. In conclusion, while the projects are generally perceived as environmentally sustainable, there are evident discrepancies in opinions, particularly in areas such as compliance with environmental regulations and biodiversity preservation, that may necessitate further exploration and addressing.

The regression results revealed that project environmental sustainability and sustainable development among Murang'a County, Kenya have a positive and significant link. The findings suggested that a shift in project environmental sustainability will boost Murang'a County' sustainable development. The null hypothesis was rejected, and conclusion made that project environmental sustainability positively influences sustainable development in Murang'a County, Kenya.

5.3 Conclusions

The conclusions derived from the study findings for each of the research goals are presented in this section.

5.3.1 Project Financing and Sustainable Development

The study investigated the intricacies of project financing and its implications for sustainable development, focusing on the equilibrium between debt and equity and the sufficiency of financial resources. The findings illustrate that a well-balanced and adequately resourced financial structure is pivotal for ensuring the successful implementation and long-term viability of projects, aligning with prior research demonstrating the critical role of solid financial frameworks in sustainable development endeavors. The robust financial structures observed in the projects assessed denote a substantial alignment with sustainable development goals, providing foundational support for project initiatives and overall sustainability.

Moreover, the inclusion of risk management provisions in the financing plans of the studied projects reflects a comprehensive approach to financial sustainability. This aspect is crucial as effective financial risk management is integral to the sustainability of projects, safeguarding them against unforeseen adversities and market volatilities. The alignment of financial management practices with relevant regulatory frameworks underscores a commitment to legality and ethical financial dealings, enhancing the integrity and credibility of the projects, which is fundamental for achieving sustainability objectives.

5.3.2 Project Service Quality and Sustainable Development

The evaluation of project service quality highlighted its significance in promoting sustainable development. A high level of service quality enhances the value delivered to

project stakeholders and beneficiaries, fostering satisfaction and long-term engagement. The positive correlation between service quality and sustainable development outcomes validates the assertion that quality service delivery is intrinsic to the realization of sustainability objectives, enhancing the socio-economic impact and enduring success of projects. High-quality service in project delivery contributes to the overall effectiveness and efficiency of projects, optimizing resource utilization, and maximizing benefits.

Furthermore, the study underlines the need for continuous improvement and adherence to quality standards in service delivery to sustain the gains made in sustainable development. The enhancement of service quality is not only beneficial to the immediate project stakeholders but also contributes to the broader sustainability ecosystem by setting benchmarks and elevating industry standards. Continuous adherence to and improvement of quality standards are imperative for maintaining the relevance and competitiveness of projects in the evolving sustainability landscape.

5.3.3 Project Governance and Sustainable Development

The assessment of project governance revealed its substantial influence on sustainable development. Effective governance structures, characterized by well-defined roles, responsibilities, and robust risk management mechanisms, were found to be strongly associated with positive sustainable development outcomes. This concurs with existing literature asserting that clear governance structures are paramount for ensuring the project's success in social, economic, and environmental dimensions. The study's findings reinforce the indispensability of effective governance in steering projects towards their sustainability goals, by ensuring accountability, facilitating stakeholder participation, and fostering ethical decision-making.

Additionally, the study emphasizes the adaptability of governance frameworks to handle the dynamic nature of projects and sustainability concerns. Project governance does not operate in a vacuum; it interacts with various project elements and environmental factors, necessitating flexibility and responsiveness to emerging needs and challenges. The need for adaptable governance frameworks underscores the importance of continual refinement of governance structures and processes to accommodate the evolving demands and complexities of sustainable development projects, ensuring their resilience and sustained impact.

5.3.4 Project Environmental Sustainability and Sustainable Development

The evaluation of project environmental sustainability elucidated its positive and significant impact on sustainable development. The incorporation of environmental sustainability practices was found to have beneficial effects on project outcomes, aligning with studies that correlate environmental sustainability with enhanced project performance in terms of reduced emissions, resource conservation, and biodiversity preservation. The findings imply that the integration of environmental sustainability measures is pivotal for achieving holistic and enduring sustainable development outcomes. Environmental sustainability in projects not only mitigates adverse environmental impacts but also enhances the socio-economic value of projects by fostering resource efficiency and ecological balance.

Moreover, the study underscores the significance of resource efficiency, sustainable design, and climate change adaptation in achieving sustainable development. It sheds light on the interdependencies between environmental sustainability and other dimensions of sustainable development, highlighting the need for a synergistic approach to sustainability.

By integrating environmental considerations in project design and execution, projects can attain a harmonious balance between ecological preservation and developmental goals, ensuring the well-being of both the environment and project beneficiaries. The integration of environmental sustainability is therefore a cardinal component in the architecture of sustainable development projects, underpinning their success and longevity.

5.4 Recommendations of the Study

It is crucial for projects aiming to contribute to sustainable development in Murang'a County to optimize their financing structures. Balancing debt and equity is pivotal to avoid over-leverage and ensure the financial viability of projects. It is recommended that project managers and stakeholders conduct rigorous financial assessments and seek expert advice to structure financing in a way that mitigates risk and ensures the sustained implementation of project activities. Continued effort should also be made to secure adequate financial resources and manage them effectively, complying with relevant regulatory framework.

Based on the study's findings, enhancing service quality is paramount to achieving superior sustainable development outcomes. Project managers and executing agencies should commit to continuous improvement in service delivery, adopting best practices and adhering to industry standards. Strengthening mechanisms for stakeholder feedback and implementing robust quality assurance processes will ensure that project services meet and exceed the expectations of beneficiaries and stakeholders, thereby contributing to the overall success and sustainability of projects.

Effective and clear governance structures are fundamental for the success of sustainable development projects. This study recommends the implementation of robust

governance frameworks that clarify roles and responsibilities and ensure accountability and ethical decision-making. Adapting governance structures to the dynamic and complex nature of sustainable development projects is crucial. Regular reviews and refinements of governance processes will help in navigating the evolving challenges and opportunities in the sustainability landscape and enhance the project's resilience and impact.

Environmental sustainability should be integrated into every stage of project development to enhance overall sustainable development outcomes. The findings of this study advocate for a strategic approach to environmental sustainability, focusing on resource efficiency, sustainable design, and climate change adaptation. By prioritizing environmental considerations in project planning and execution, projects can achieve a harmonious balance between ecological preservation and developmental goals, fostering the well-being of the environment and the communities involved.

5.5 Research Areas for Further Studies

In response to the findings and conclusions of this study, further research is recommended to delve deeper into the underlying mechanisms and contextual variables affecting project financing, service quality, governance, and environmental sustainability. Given the evolving nature of sustainable development projects, future studies can explore how the dynamism of these variables impacts the attainment of sustainability goals. Investigating more diverse project settings and types would extend the generalizability and applicability of the study's findings, providing a broader understanding of sustainable development initiatives across different sectors and regions.

Another suggestion is to adopt longitudinal and experimental research designs that allow for the examination of causal relationships between project attributes and sustainable

development outcomes over time. Longitudinal studies can reveal how project financing, service quality, governance, and environmental sustainability interact and evolve throughout the project lifecycle, offering insights into the temporal dynamics and long-term impacts of these factors. Experimental designs could be used to test the efficacy of interventions aimed at enhancing these project attributes, contributing to the development of evidence-based practices and strategies for sustainable development projects.

Finally, there is a need for more in-depth qualitative research to explore the nuanced perspectives and experiences of diverse project stakeholders. Qualitative studies can provide richer, context-specific insights into the challenges and opportunities related to project financing, service quality, governance, and environmental sustainability. By employing methods such as interviews, focus groups, and ethnography, future research can uncover the subtleties and complexities of stakeholder interactions, decision-making processes, and value systems, contributing to a more holistic understanding of sustainable development projects.

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APPENDICES

APPENDIX I: Introduction Letter

August 2023

Caroline Kimani

Master of Science in Development Finance Student

KCA University

RE: REQUEST FOR RESEARCH DATA

I am undertaking a degree in Master of Science in Development Finance at KCA University and I am expected to submit a research paper on **"public private partnership and sustainable development in Murang'a County, Kenya"** as part of my course work**.**
To accomplish this, your county has been chosen to collect the data desired for this report. Your name will not be included in the research, and this information will be used solely for academic purposes. The research conclusions will be made availed on demand .

Kind regards.

Caroline Kimani

Masters Student – Researcher

KCA University

APPENDIX II: Questionnaire

This questionnaire has been developed to collect information on the effect of public private partnership on sustainable development in Murang'a County, Kenya. Kindly take the time to carefully read the questions and provide the best insight you can. Only scholarly purposes will be served by the information acquired.

Instructions

On the questionnaire do not specify your name.

Pick only a response (box) for every question.

PART A: BACKGROUND INFORMATION

1. Kindly indicate your gender

   a) Male ( )

   b) Female ( )

2. Please indicate your age

   (a) Below 30 years ( )

   (b) Between 31-40 years ( )

   (c) Between 41-50 years ( )

   (d) Above 50 years ( )

3. How long you have been involved with PPP in Murang'a County?

   a) Less than 1 year ( )

   b) Between 2-3 years ( )

   c) Between 4-5 years ( )

   (d) More than 5 years ( ).

4. Please indicate the highest level of education

   (a) Diploma ( )

(b) Undergraduate Degree ( )

(c) Postgraduate Degree ( )

(d) PhD ( )

PART B: PUBLIC PRIVATE PARTNERSHIP

This part has four sections; project financing, project service quality, project governance and project environmental sustainability.

Project financing

To what magnitude do you concur with the following assertions? Rate in a scale of 1 to 5 (1 Strongly disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree)

Statement	**1**	**2**	**3**	**4**	**5**
a) The project financing structure is appropriately balanced between debt and equity.					
b) The project has secured adequate financial resources to ensure its successful implementation.					
c) The project financing plan includes provisions for managing financial risks effectively.					
d) The project has a clear and realistic plan for achieving financial sustainability.					
e) The project's financial management practices comply with relevant regulatory frameworks.					

f) The project has established mechanisms for monitoring and reporting financial performance.					

Project service quality

To what magnitude do you concur with the following assertions? Rate in a scale of 1 to 5 (1 Strongly disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree)

Statement	**1**	**2**	**3**	**4**	**5**
a) The project consistently meets or exceeds customer expectations regarding service delivery.					
b) The project team demonstrates responsiveness and proactiveness in addressing customer needs.					
c) The project maintains high standards of service quality throughout its duration.					
d) Customers perceive the project's services as reliable, efficient, and of high quality.					
e) The project has effective communication channels in place to address service-related concerns.					
f) The project regularly evaluates and improves its service quality based on customer feedback.					

Project governance

To what magnitude do you concur with the following assertions? Rate in a scale of 1 to 5 (1 Strongly disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree)

Statement	**1**	**2**	**3**	**4**	**5**
a) Project stakeholders are actively involved in decision-making processes, ensuring transparency and inclusiveness.					
b) The project has established clear roles and responsibilities for all stakeholders involved.					
c) The project demonstrates strong accountability mechanisms for effective governance.					
d) The project's governance framework ensures efficient coordination among stakeholders.					
e) The project maintains effective risk management practices to mitigate governance-related risks.					
f) The project adheres to relevant laws, regulations, and ethical standards in its governance practices.					

Project environmental sustainability

To what magnitude do you concur with the following assertions? Rate in a scale of 1 to 5 (1 Strongly disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree)

Statement	**1**	**2**	**3**	**4**	**5**
a) The project incorporates measures to reduce its carbon footprint and minimize greenhouse gas emissions.					
b) The project actively promotes resource conservation and efficient use of natural resources.					
c) The project implements sustainable waste management practices throughout its lifecycle.					
d) The project considers the protection and preservation of biodiversity in its planning and operations.					
e) The project complies with environmental regulations and standards in its activities.					
f) The project engages stakeholders in promoting and achieving environmental sustainability goals.					

PART C: SUSTAINABLE DEVELOPMENT

To what magnitude do you concur with the following assertions? Rate in a scale of 1 to 5 (1 Strongly disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree)

Component	**1**	**2**	**3**	**4**	**5**
The overall well-being and quality of life in the community/country has improved over time.					
Access to education and knowledge has expanded, leading to better opportunities for personal and societal development.					
There has been a significant reduction in poverty and inequality, promoting a more inclusive society.					
The healthcare infrastructure and services have improved, leading to increased life expectancy and better health outcomes.					
Environmental conservation and sustainability practices are prioritized, ensuring the protection of natural resources for future generations.					
Economic development has resulted in increased income levels, job opportunities, and overall economic well-being.					

THANK YOU

APPENDIX III: List of PPP Projects in Murang'a County

1. The Nairobi Water Fund
2. Agroecology
3. Jhpeigo
4. Jacaranda Health
5. AHF
6. AMREF
7. Nutritional International
8. Catholic Diocese of Murang'a
9. Murang'a County Industrial Park
10. Murang'a County Market