PUBLIC-PRIVATE PARTNERSHIP MECHANISMS AND THE PERFORMANCE OF ROAD PROJECTS IN KENYA

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DECLARATION

This project is my original work and has not been presented for a degree in any other university.

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DEDICATION

I dedicate this thesis to all those who believe in the power of public policy to transform societies.

To my family, for your steadfast support and belief in me.

To my supervisors and mentors, for your guidance and intellectual rigor.

And to every student and researcher striving to contribute to knowledge may this work serve as a reminder that perseverance, discipline, and faith make all things possible.

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Above all, I thank God for granting me strength, resilience, and clarity throughout this entire journey.

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ABBREVIATIONS AND ACRONYMS

AfDB	**:**	African Development Bank
CDF	**:**	Constituency Development Fund
EU	**:**	European Union
ICT	**:**	Information and Communication Technology
IIA	**:**	Institute of Internal Auditors
KeNHA	**:**	Kenya National Highways Authority
KeRRA	**:**	Kenya Rural Roads Authority
KURA	**:**	Kenya Urban Roads Authority
M&EA	**:**	Monitoring and Evaluation
OECD	**:**	Organization for Economic Cooperation and Development
PPP (P3)	**:**	Public Private Partnership
RBV	**:**	Resource Based View Theory
RM	**:**	Risk Management
SOE	:	State Owned Enterprises
UNICEF	**:**	United Nations International Children's Emergency Fund

OPERATIONAL DEFINITION OF TERMS

Legal Framework	Refers to the statutory and regulatory instruments that govern how public–private partnerships are initiated, procured, implemented, and monitored, ensuring transparency, accountability, and compliance with national laws and policies.
Private public partnership	A cooperative arrangement between the public and private sectors for the design, financing, construction, and operation of public infrastructure or services, where project risks, responsibilities, and rewards are equitably shared under a legally binding agreement.
Private Public partnership mechanism	The institutional processes, policy instruments, and management practices through which PPP projects are identified, appraised, financed, implemented, monitored, and evaluated to achieve optimal performance.
Project	A time-bound and resource-specific intervention undertaken to create, expand, or rehabilitate infrastructure or services in response to an identified public need, implemented through a defined project cycle.
Project financing	The arrangement through which financial resources are mobilized for project development, typically on a limited-recourse basis, where repayment and risk allocation depend primarily on the cash flows and performance of the project itself.
Project Identification	The systematic process of recognizing, screening, and selecting viable project concepts based on national priorities, economic feasibility, and expected developmental outcomes.
Project Risk	The probability that events or conditions may occur that adversely affect project objectives related to cost, time, scope, or quality. These are managed through identification,

	assessment, mitigation, and continuous monitoring mechanisms.
Roads Project performance	The extent to which road infrastructure projects meet planned cost, time, and quality objectives, as well as functionality, durability, and service delivery standards upon completion.
Stakeholders	Stakeholders refer to all individuals, groups, institutions, or entities that have a direct role, responsibility, interest, or influence in the planning, financing, implementation, monitoring, or performance of Public–Private Partnership (PPP) road infrastructure projects in Kenya. In this study, stakeholders are operationalized as actors whose involvement, decisions, or expectations materially affect—or are affected by—the successful delivery, cost, time, quality, or sustainability outcomes of PPP road projects. This includes public-sector agencies, private concessionaires, financiers, contractors, regulatory bodies and oversight institutions.
Stakeholder participation	The structured and inclusive engagement of public, private, and community actors throughout the project cycle to ensure transparency, ownership, and alignment of interests in achieving project objectives.

ABSTRACT

Road construction plays a critical role in stimulating Kenya's economic growth and enhancing productivity by improving connectivity between various factors of production. However, the successful implementation and performance of road infrastructure projects require substantial financial and technical resources that are not always readily available. To overcome these constraints, the Government of Kenya has increasingly relied on Public–Private Partnerships (PPPs) as a strategic approach for mobilizing private-sector financing, innovation, and technical expertise. Unlike the public sector, private entities operate on profit-driven principles, necessitating well-designed cost-recovery mechanisms to sustain long-term investment viability. This study assessed the effect of Public–Private Partnership mechanisms on the performance of road infrastructure projects in Kenya. Specifically, the study examined the influence of project identification, project financing, project risk management, and stakeholder participation mechanisms on the performance of road infrastructure development projects. The research was anchored on Policy Network Theory, the Theory of Constraints, and the Resource-Based View. A mixed-method research design was employed, targeting 165 respondents involved in 15 PPP road projects across the country. Both primary and secondary data were used, with questionnaires and key informant interviews serving as the primary data collection methods. Reliability of the research instrument was confirmed using Cronbach's Alpha coefficient, while descriptive and inferential statistics including multiple linear regression were used for data analysis. The findings revealed that project identification, project financing, project risk management, and stakeholder participation had positive and statistically significant effects on the performance of PPP road projects in Kenya. The study further established that the legal framework significantly moderated the relationship between PPP mechanisms and project performance. The research contributed to theory and practice by developing an integrated analytical framework that combines institutional, financial, and stakeholder dimensions of PPP project performance. The findings have significant policy implications. For the Government of Kenya, the results provide evidence to guide enhancements of PPP legal and regulatory reforms geared toward strengthening contract governance, fiscal discipline, and institutional accountability. For international development partners, the study offers insights supporting targeted investment, co-financing arrangements, and capacity-building interventions for sustainable infrastructure delivery. For non-governmental organizations and civil society, the findings highlight opportunities to promote stakeholder engagement, transparency, and social inclusion throughout the project cycle. Overall, the study integrates theoretical, empirical, and policy perspectives and provides practical guidance for strengthening PPP strategies within Kenya's road infrastructure sector and similar contexts across Sub-Saharan Africa.

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

The concept of public–private partnership (PPP) first emerged in the United States, where it initially referred to joint public–private financing arrangements for education programmes before expanding to other public utilities. By the 1970s, the term increasingly described collaborations for urban renewal initiatives. According to Buso, Marty, and Tran (2017), although governments remain responsible for providing essential infrastructure and public services, escalating budgetary constraints have significantly reshaped public investment decisions. PPPs thus evolved as a model through which publicly funded entities work jointly with private firms to deliver infrastructure and services (Lomoro, Mossa, Pellegrino & Ranieri, 2020).

In the United Kingdom, PPPs gained prominence in the early 1980s as part of a broader shift toward privatization under the Thatcher administration (Sadka, 2007). Sadka (2007) distinguishes between privatization—the transfer of state-owned enterprises to private investors—and public–private partnerships, which involve substantial private investment in public facilities followed by long-term service delivery arrangements. Meanwhile, France developed a formal PPP model in the late 1970s during the modernization of its national highway network. The approach then spread across Europe in the 1980s and later to countries such as the United States, Australia, and Canada (Yescombe, 2011; Maslova & Sokolov, 2017). Over time, PPPs were also adopted across Asia and Africa as developing economies sought mechanisms to accelerate infrastructure development.

The formal development concept and mechanism of public-private partnerships originated in France during the late 1970s when the nation was modernizing its highways. In the 1980s, the concept spread to Spain and England (Yescombe, 2011). When the United Kingdom privatized its transportation system in the 1990s, the PPP concept moved there. From there, it was developed in other European nations, including the United States, Australia, and Canada (Maslova & Sokolov, 2017). Subsequently, developing and less developing nations in Asia and Africa embraced the idea. The governments of the Sub-Saharan African nations have worked hard to develop infrastructure in important sectors like energy, transportation, and information and communications technology (AfDB, 2011). The low domestic productivity and budgetary deficits in Sub-Saharan African countries pose challenges to infrastructure development (AfDB, 2011).

In Sub-Saharan African nations, the majority of governments have given infrastructure development top priority (AfDB, 2011). According to Estache (2006), there is resistance to integrating PPPs into national economies in emerging and developing nations due to their precarious financial conditions. The use of PPPs is changing in many developing economies, and it is becoming more typical to use the private sector to advance public health objectives in low- and middle-income countries (LMICs) (Whyle & Olivier, 2016). Information and communication technology, energy, and transportation are a few of the vital infrastructures that receive far too little funding. This had an impact on local productivity as well as posing a serious obstacle to the success of regional integration, which is something that many African nations are working toward (Africa Competitiveness Report 2013). A significant portion of

Africa's infrastructure deficit can also be attributed to the lack of creative ways to bridge the financing gap.

PPP projects in Sub-Saharan Africa have seen a surge in investment during the past ten years. Nonetheless, in comparison to other regions, the amount of investment is still quite small. With only 2.3% of all private investment worldwide in 2017, Sub-Saharan Africa continues to have a very low share of private investment (IFC, 2018). As part of a global effort to reduce poverty and promote social, political, and economic transformation, Kenya's public long-term improvement plan, Vision 2030, places a particularly noteworthy emphasis on reproducing and creating useful framework. The plan is in effect for the period of 2008 to 2030. However, a challenging social budget, pressures for competitive development, especially in the social sector, high levels of private debt, and growing demands for public spending from both existing and new entities present financial challenges for the Government of Kenya (GOK) (Africa Competitiveness Report, 2013). According to the country strategy paper of the African Development Bank (2014), Kenya's infrastructure funding shortfall is estimated to be approximately KES.178.5 billion ($2.1 billion) annually. To address this issue, the GOK, through the National Treasury, has made infrastructure development and the organization of public administrations via Public Private Partnerships (PPP) an essential tool that can help close the framework financing gap and efficiently reap the benefits of PPP investment.

Fabre and Straub (2019) point out that governments have discovered methods to collaborate with the private sector on larger projects like the construction of roads, dams, and train lines—all of which are extremely expensive and take a long time to complete. Public-private partnerships, or PPPs, are typically associated with

infrastructure projects because they are thought to have a major impact on social or economic development in addition to being closely aligned with the interests of the stakeholders (Khmel & Zhao, 2016). The primary characteristics of the public-private partnerships (PPP) approach are that the private sector handles all financing-related matters, including asset management (Shi, Zhang, Onishi, Kobayashi, & Dai, 2018). Large-scale infrastructure development projects involve many intricate issues, and decision-makers debate whether elements like public-private partnerships have an impact on how well these projects work. Therefore, this study will investigate the PPP mechanism and how it relates to Kenyan road project performance.

1.1 Public Private Partnerships

PPP, commonly referred to as P3, is a long-term contractual arrangement that involves the public and private sectors in the financing, planning, development, and implementation of public projects and infrastructure. Adopting the PPP mechanism is primarily intended to promote economic growth and the development of various economic sectors (Hashim, 2017).

Increasing equitable growth and development levels in any economy is the goal of the PPP mechanism (Oppong, Chan & Dansoh, 2017). Robinson and Scott (2009) state that the relationship between profit payments and employment in private companies predicated on successful services and services rendered by the public sector throughout the project life cycle constitutes the fundamental tenet of public-private partnerships (PPPs). According to Hashim (2017), the adoption of PPP mechanisms and practices is necessary for the successful implementation of projects under public-private partnerships. These include sourcing financial resources for the projects and collaborating to identify projects based on needs. According to Schwab (2013), risk

allocation and sharing should be carried out for large infrastructure projects. The success of PPP depends on assigning each risk to the party most qualified to manage it. The researcher also points out that all project stakeholders' engagement, involvement, and participation are necessary for the project to succeed.

According to Loiola, F. (2014), there are three main categories of infrastructure that PPPs are typically utilized for defining: government, social, and economic infrastructure. The provision of physical assets and related services for economic growth, such as ports, railways, bridges, energy, sanitation, and mobility, is referred to as economic infrastructure (Sluger & Satterfield, 2010). The provision of tangible resources and services for human development in areas like public housing, health care, education, and security is referred to as social infrastructure (Anker, 2012). Anker (2012) pointed out that government infrastructure comprises citizen service facilities and administrative hubs for efficient citizen service delivery.

PPP theory has investigated ways to secure extra funding and assistance for significant infrastructure projects that benefit the public at large (Zhen, Shu & Xueqing, 2014). It also considers building stronger relationships and cooperative strategies to provide the funding and resources required for the projects, ensuring that they are completed on schedule and that the general public benefits. PPP in large projects encompasses the four primary areas of financing, project identification and design, control and risk management, and stakeholder management (Xiong, Zhao, Yuan, and Luo, 2017). According to the researcher, this results in improved project performance, which is primarily assessed by providing high-quality projects that meet predetermined standards, cutting overall costs, sticking to budgetary constraints, and delivering projects on time. In light of this, the current study investigates the idea of public-private

partnership mechanisms and the impact of these factors on the performance of road projects in Kenya.

In order to meet the needs of the public through appropriate resource allocation, risk-taking, and reward sharing, the PPP concept is predicated on the search for partners with experience in every facet of the project (Oppong, et al., 2017). Long-term cooperation, collaboration, and activity coordination are also important, especially when it comes to sharing project risks, expenses, and resources with all parties involved. The PPP mechanism involves a large number of stakeholders, and in order to ensure successful project implementation, it is necessary to investigate the best ways to manage them. This can be accomplished by building solid lines of communication that encourage productive teamwork and make a substantial contribution to high-performing projects. According to Lomoro *et al.* (2020), while governments are primarily responsible for project identification and design, stakeholders are also involved in the process of sourcing funding and other resources for the projects. The researcher also mentioned the possibility of private partners and stakeholders being involved in project inception as well as ongoing sustainability maintenance. In order to encourage more private entities to fund the expensive infrastructure projects, governments occasionally offer subsidies and reasonable rates of return. The private sector is able to obtain value for the financial resources invested in these projects (Zhu, *et al.,* 2016).

Because major development projects like building roads come with inherent risks, risk sharing is a key part of the public-private partnership (PPP) mechanism. Any project, according to Maslova and Sokolov (2017), entails risks and uncertainty. The risks associated with large-scale development and infrastructure projects are more

significant, necessitating the development of risk management strategies in order to reduce the risks and guarantee the projects' success. Project risk management considers channels of communication to address issues, prevents risk occurrences by careful planning, and applies knowledge and skill sets from the past (Akpoghome & Nwano, 2020). According to Buso, Marty, and Tran (2017), PPP is a response to the government's and local agencies' limited funding, which necessitates private sector investment to supplement the availability of public funds. Large projects come with higher risks, the researchers added. As a result, the government and private sector must share risk, and stakeholder management procedures must include details on how to manage risks among stakeholders. The private sector will finance, oversee, and share the risks and rewards of the project, while the government will identify, design, and implement it for the general public (Shi, et al., 2018). The PPP strategy aspects of project identification, project financing, risk management, and stakeholder management will all be examined in this study.

The PPP methodology makes use of several PPP support models, which are grouped according to which partner is in charge of managing and providing resources at different stages of the project. Certain PPP models, such as Design-Build (DB) in which an independent industry partner designs and constructs infrastructure at the cost of fulfilling contractual agency details and bearing all design and construction risks, are listed by Turina and Pusic (2006). Scholars also make reference to Operating and Maintenance Contracts, wherein a private sector partner maintains and operates public property for a reasonable amount of time while the assets are owned by the public authority. In the Design-Build-Finance-Operate (DBFO) model, designing, financing, constructing, and maintaining assets over time is the secret partner. The Build-Own-

Operate (BOO) model comprises the development, ownership, and use of a permanent infrastructure component as well as the support of private sector partners for a particular infrastructure component. The original agreement and the ongoing regulatory mandate outline the obstacles for public sector partners. Under the Build-Own-Operate-Transfer (BOOT) model, a public sector partner retains ownership of the infrastructure after a set period of time, during which an independent industry partner may finance, design, construct, and use a portion of it. The Buy-Build-Operate (BBO) model, in which public assets are formally transferred to private sector partners for a predetermined period of time, and the Build-Lease-Operate-Transfer (BLOT) model, in which private sector partners design, finance, and construct space on leased public land, are further models mentioned by Turina and Pusic (2006). During the lease, a partner in the private sector oversees the facility before giving it back to the state. Researchers also observed the use of an Operating License (OL) or other legal representation of use of a public service when a private sector partner is licensed. The purpose of this study is to examine the various model implications on the performance of road projects. These models have been applied differently in Kenyan road projects.

PPP dramatically lowers costs and boosts operational efficiencies for urban development projects like affordable housing, roads, water supply, and hospitals, especially in developed countries like the United Kingdom, Canada, and the Netherlands, claim Alireza, Mohammadreza, Zin, Yahaya, and Noor (2019). According to Sarvari, Valipour, Yahya, Noor, Beer, and Banaitiene (2021), PPP project success differs from nation to nation, industry to industry, and project to project. Increased innovation, efficiency, and creativity through the use of technical and managerial skills from the private sector for the provision of infrastructure services is a major benefit of

adopting PPS (Ahadzi & Bowles, 2004). It is believed that PPPs, which involve the private sector in competitive procurement procedures, encourage bidders to create creative solutions that boost the value of public funds allocated to infrastructure services by offering more dependable, affordable, and efficient services. There is also a claim that the private sector can help by offering its experience in project and risk management to guarantee excellent results and on-time delivery. This is the outcome of PPP implementation. Despite the fact that PPP has gained popularity over the past forty years, its global application has seen each successes and disasters. PPP has been utilized to complete a vast range of development tasks in positive instances, but many partnership projects have had terrible results in other instances.

In Malaysia, the private sector has long provided public facilities and services. It was founded in the middle of the 1980s as a result of the poor consequences of the global economic crisis, which triggered the authorities to are looking for assist from the personal region in order to further the country's economic growth. Ismail (2019). Various economic policies have been implemented to encourage the private sector's involvement, including the 1981 introduction of the Malaysian Incorporated Policy, the 1983 release of the Privatization Policy, the 1985 release of the Guidelines on Privatization, and the 1991 release of the Privatization Master Plan. As indicated in the Ninth Malaysia Plan of 2006 and the Tenth Malaysia Plan of 2010, the primary objective of PPP in Malaysia is to enhance and restructure the current privatization policy's implementation process. Two categories of infrastructure and service development projects will make use of PPP. PPP must, above all, be able to improve the efficiency of government projects by making sure that both parties share the risks and benefits as evenly as possible. Second, PPP ought to be applied in areas of strategic

importance or promotion, where the backing of the government makes private sector initiatives more feasible (Mohamad, Ismail & MohdSaid, 2018).

Relationships between the public and private sectors that affect the health, development, and well-being of society both domestically and internationally are known as public-private partnerships, or PPPs. These partnerships are conceptual in nature as well, depending on the roles that important players play in cooperating to make these relationships work or not (Opawole & Jagboro, 2017). Public-private partnerships have the potential to enable sustainable access to healthcare and other socioeconomic services and products in developing countries such as Nigeria. These partnerships involve the private sector contributing core competencies and skills, the government providing the minimum standard of services, products, and care, and donors and businesses providing funding and other resources. Ogunsanmi (2019) states that the PPP's objectives would be to analyze the opportunities and capacities of public and private sector organizations, close the information gap between them, and propose ways to improve the interactions between the governed and the populace. While PPPs are typically thought of as development cooperation that primarily involves the public and private sectors interacting, Andrade de Alencar Loiola, F. (2014) pointed out that the definition can be further expanded to include any shape of cooperation among the government and non-governmental entities, which includes now not handiest companies but also voluntary agencies (NGOs, trade unions), knowledge institutes, or communities. The degree of formality of the agreement between the parties is another area where PPP approaches diverge. According to Whyle & Olivier (2016), informal agreements between the public and private sectors are typical in the US and the

Netherlands, while in Australia and Brazil, the emphasis is on formal, contractual agreements that are comparable to those of legal partnerships.

1.1.1 Public Private Partnership Mechanism

When it comes to carrying out significant public works projects, public-private partnerships (PPPs) are becoming a more and more popular option for legislators, particularly when there is a lack of funding from the government and when combating public inefficiencies is required (Awodele, 2020). PPP gives governments, which are already resource-constrained due to the current state of the economy, the opportunity to take advantage of alternative private sector financing sources while also benefiting from the skills and managerial advantages that the private sector can offer. In the end, PPP can increase the financial return on public sector resources. According to Dominic, Ezeabasili, Okoro, Dim, and Chikezie (2021), PPP entails long-term cooperation for mutual gain between the public and private sectors, in which the participating parties concur to split costs, risks, and rewards when developing goods or services. Global experience has demonstrated that, when designed appropriately, PPP can offer a number of advantages. PPP can provide a range of advantages, such as risk transfer, cost effectiveness, enhanced efficiency, and private funding.

The PPP mechanism, which is defined as the procedures for project identification, financing, risk management, and stakeholder engagement in the implementation of road infrastructure projects in Kenya, is the independent variable.

The difficult process of project identification offers a useful lens through which conflicts in projects can be identified (Nielson, 2019). Research on customers, suppliers, markets, brainstorming sessions, and literature analysis are always good

sources of ideas for new projects (Kerzner, 2014). Project administrators are able to anticipate possible risks through the identification process. Most of the time, the risks include those related to safety, natural disasters, politics, the environment, society, finances, institutions, and technology (Zembri-Mary, 2019). According to Kerzner (2018), the identification of a project can be based on the success or failure of earlier initiatives, which frees up resources needed for new initiatives. By using customer research, brainstorming sessions, conflict spotting, and literature analysis, the current study will attempt to evaluate the phenomenon project identification.

Project identification, according to Meredith and Mantel (2018), is the process of assessing a single project or a collection of projects and choosing the ones that will assist the organization in achieving its objectives. The way a project affects at least one of the main concerns of stakeholders—such as improving cash flow, reducing costs, accelerating growth, or having a social impact—should be connected to its objectives. According to Kumar, Saranga, Nowicki, and Rami rez-Ma rquez (2020), a successful project identification is a process in and of itself that, when carried out well, can greatly increase the potential benefits to beneficiaries. The project's identification and implementation may be connected in that they both contribute to the organization's creation of a project culture, enhance the project's success, and improve the effectiveness of its processes.

In this paper, "project identification" refers to all organizationally initiated construction project activities up to the point of feasibility study, but not beyond. It entails determining that a facility is necessary and making a commitment to meet that need (Maytorena, Winch, Freeman & Kiely, 2019). A well-executed project identification phase, according to Berssaneti and Carvalho (2022), includes a thorough definition of

the user requirements for the planned facility and links the requirements to the resources, technology, and inherent risks that are available. Therefore, it should be determined whether to conduct a feasibility study at the conclusion of the project identification phase.

According to Cruz, Sastoque, and Otegi (2020), the first step in the project cycle, identification, is a critical procedure that results in the preliminary screening of projects. Love, Mistry, and Davis (2021) state that the following procedures are typically involved in project identification: Determine the project concept (along with backup plans) that will best help the nation accomplish its development goals; evaluate the project's importance or urgency in relation to the nation's sector investment program and plan for economic and social development; Based on the conceptual design, estimate the approximate project cost (along with the cost of alternatives); and conduct a preliminary analysis of the project's viability and potential effects on the nation, a particular region, or a particular industry.

According to Gorshkov and Epifanov (2016), project financing is the process of allocating project investment resources needed for the project's execution. In order to lower risks, project financing places a greater emphasis on finding the ideal balance between owned and borrowed funds (Gorshkov & Epifanov, 2016). The ability to use a wide range of techniques, resources, and means to guarantee that investment projects are adequately financed is what defines project financing (Ganbat, Popova & Potravnyy, 2016). Among the sources of project funding are bonds, bank loans, own funds, leases, share issuances, and capital stock shares. Project financing is the process of providing funds to a specific economic unit that sponsors have started; in this scenario, the business risk is shared by the creditors and the funding is obtained

specifically for the project (Pinto, 2017). Project financing is essential because it reduces funding costs by addressing agency issues, enhances risk mitigation, adds value to the project, and lowers the cost of asymmetric information (Morea & Gebennini, 2021). Strong project cash flow generation and a sufficient equity cushion are the cornerstones of project financing, according to De Nahlik and Fabozzi (2021). The goal of the current study is to quantify project financing using bonds, capital stock shares, bank loans, and own funds.

Financing is the process of supplying money to carry out tasks related to a project. Through project financing, project stakeholders can profitably share in the expenses, risks, and rewards of a new endeavour (Sundararajan & Tseng, 2017). There are several ways to get funding for a project, according to Shan, Hwang, and Zhu (2019). The stakeholders may have agreed to pool funds or provide collateral in order to raise the money required to finance a specific project. Most large-scale projects have enough estimated future value to qualify as collateral for project financing from investors. Thus, the most important factors in project financing are planning, precise estimating, and project viability assessment.

One technique for planning and funding significant capital projects is project financing. People with the specialized skills to take on particular types of project risk are compensated for their services. As a result, financing costs are reduced overall, deadweight losses for investors and customers are eliminated, and projects that might not have been undertaken otherwise are successfully completed (Akhanolu, Ikpetan, & Chibuzor, 2016). The system of investment a particular monetary unit that the sponsors layout is known as mission finance. on this situation, a large part of the challenge's business hazard is shared by means of the creditors, and investment is simplest received

for the mission. cost is created through assignment finance via decreasing funding prices, preserving sponsors' economic flexibility, elevating leverage ratios, decreasing company taxes, stopping contamination threat, enhancing risk control, and lowering charges associated with marketplace imperfections. However, compared to conventional financing, project finance transactions are more complex, require higher borrowing costs, and require time-consuming financing and operating agreement negotiation.

According to Willumsen, Oehmen, Stingl, and Geraldi (2019), project risk management is recognized as a common and widely accepted practice that is based on the notion that it adds value to the projects in question. This procedure aids in determining how well the input factors—quality and time cost—perform (Muriana & Vizzini, 2017). Additionally, the practice is crucial for determining the value of input factors at the conclusion of each phase, providing a means of comparing those inputs' performance with that of prior projects, and suggesting corrective actions while taking the project's overall impact into account. According to Peixoto, Tereso, Fernandes, and Almeida (2014), project risk management is a methodical process that focuses on threat identification and management, shapes project objectives, improves project control, fosters actor communication, prioritizes actions, increases project success, and makes decision-making easier during project implementation. Maintaining open lines of communication is essential to the risk management process since it facilitates the identification of possible hazards, particularly during brainstorming sessions (Chapman, 2019). Risk management involves a range of response strategies, including risk retention, reduction, reassignment, and removal. There are several benefits to risk management, including cost-effectiveness, efficiency, increased project success rates,

and practical contingency planning (Hillson & Simon, 2020). Project risk management will be evaluated in the current study using the following criteria: labor, time, costs, uncertainty, opportunities, threats, decision-making, and threat identification.

Risk identification and mitigation are critical steps in project management, according to DeCotiis and Dyer (2019). To determine an accurate estimate range for the cost and schedule, risk and uncertainty need to be measured. Effective risk management is now a requirement for project management success. Effective risk management can assist the project manager in mitigating known and unknown risks on a variety of projects. Inadequate risk management can lead to project budget overruns, schedule delays, missed critical performance targets, or any combination of these issues. Anantatmula (2021) contends that an organization's risk management procedure needs to become ingrained in its culture. Businesses should use risk management procedures and instruments in accordance with how they relate to their particular projects. The project management process depends heavily on the risk management knowledge area, so organizations must work hard to make sure the tools they are using are giving them the necessary level of insight and value.

According to Williams (2018), project risk management is the process of locating, evaluating, and handling any risks that emerge throughout the course of the project in order to keep it on schedule and help it reach its objectives. Organizations must be able to manage the uncertainty and risk that come with projects that are becoming more and more dynamic. According to Aduma and Kimutai (2018), risk management is commonly the responsibility of task managers during the route of a venture. therefore, undertaking managers ought to have a clean information in their goals so that you can

identify any capacity bottlenecks that might prevent the team from achieving those objectives and manage risk effectively.

Project risk management is the process of identifying, assessing, and mitigating any risks that may occur during the project's life cycle in order to keep it on schedule and meet its goals (Kirira, Owuor, Liku & Mavole, 2019). Risk management can mean different things for different kinds of projects, according to Maghanga (2019). So that it will assure that strategies for danger mitigation are in vicinity inside the occasion that mission troubles get up, hazard control techniques on massive-scale initiatives might also contain meticulous making plans for every hazard. chance control for smaller initiatives may additionally consist of a sincere, ranked list of excessive, medium, and low precedence risks. Therefore, it's critical to develop a risk management plan in order to control project risks across your entire organization. Risk management is a written document that directs a team's chance control sports. It outlines the possible dangers associated with an assignment, a way to mitigate those dangers, what sources can be required, and the rules for reporting that will be adhered to.

Through the initial distribution of opinions, stakeholder participation helps facilitate the process of opinion exchange, convergence of opinions, and approval or rejection of opinions (Le Pira, Ignaccolo, Inturri, Pluchino & Rapisarda, 2016). The majority of the time, stakeholders provide resources to carry out projects, achieve particular objectives, assist in putting some project measures into action, and share their experiences and local conditions knowledge (Franzén, Hammer & Balfors, 2015). Stakeholder participation, according to McHugh, Domegan, and Duane (2018), is the methodical mapping of the influential and potential actors who are most likely to have an impact on or influence a guaranteed course of action. According to Lawer (2019), stakeholder participation in

projects is an important tool that management often ignores since it promotes inclusive growth, co-creates values, and helps to avoid conflicts. Stakeholder participation in the current study is evaluated through workshops, knowledge sharing, local experiences, interviews, resource contribution, and goal realization.

Stakeholder participation can occur at many different levels and in a variety of ways during the project's implementation, according to Madeeha and Imran (2016). This can be synchronized with the project's end goal, the organization's strategic objectives, and the predefinition and commencement requirements through collaboration, discussion, and partnership. Stakeholder participation, according to Moodley (2018), is the process through which individuals and groups collaborate to develop a project. It comprises all people, groups, or organizations actively working on the project. As a result, the kind and scope of the project will dictate the kind and quantity of stakeholders, so it would be wise to confirm their identities as the project moves forward.

The process of incorporating public concerns, needs, and values into project management is known as stakeholder involvement. It is predicated on a two-way exchange of information and interaction between the organization making the decision and the people who will be involved in the project (Nyandika & Ngugi, 2019). A stakeholder involvement strategy, according to Mambwe, Mwanaumo, Nsefu, and Sakala (2020), includes all interactions with the pertinent stakeholders, regardless of the interaction's goal, the stakeholders' representation in the project, or the communication method used.

By cutting costs and times, adhering to the stakeholder involvement concept improves the execution of road construction projects and, as a result, improves the quality of

project output and execution (Matu, Kyalo, Mbugua & Mulwa, 2020). One of a constructor's primary concerns, according to Omondi and Kinoti (2022), is whether a project will be finished on time, within budget, and with acceptable quality standards. Because of this, road authorities must implement quality management procedures in their construction projects to continuously raise the overall performance of the projects.

1.1.2 Performance of Road Projects

The measurement of project performance is an assessment of the actualization of project goals as outlined in the project scope (Antônio, Geciane Ornella & Alexandre, 2015). It has been acknowledged that a significant proportion, over 30%, of initiated projects are characterized as poorly performing, leading to a shift in the project management policy debate towards identifying key factors that enhance project performance (Xiong, et al., 2017). While project performance encompasses dimensions such as cost, time, quality, health and safety, and user satisfaction, Fabre and Straub (2019) assert that for road projects, performance is primarily evaluated in terms of costs, time, and quality.

The concept of performance in projects is multifaceted and has generated considerable controversy in terms of how best to operationalize it based on the nature and complexity of the projects (Akpoghome & Nwano, 2020). The researchers also observed that project performance is measured by delivery timelines, budget adherence, and quality. Zhu, Zhao, and Chua (2016) highlight that performance can also be evaluated based on end-users' satisfaction, efficiency and effectiveness, and acceptance of the project, while Villalba, Romero, and Liyanage (2016) argue that performance indicators depend on the project scope and encompass aspects such as user satisfaction, quality of the final project, adherence to budget constraints, and adherence to project delivery timelines.

The performance of any project is contingent upon the presence of a lean and competent staff with the necessary skills, experience, and expertise to effectively handle project activities in line with the established strategy (Debela, 2019). It also involves the utilization of modern technologies, systems, and equipment that facilitate project activities, thereby increasing the likelihood of timely project completion.

According to Fabre and Straub (2019), reducing project timelines directly correlates with cost reduction, including overhead costs, staff expenses, and daily bills at the work site, thus ensuring adherence to the project budget. Performance also entails minimizing waste and inefficiencies by employing experienced contractors to execute project plans and implement the strategy. Therefore, successful project performance is contingent upon the utilization of experienced contractors, advanced technologies, competent and knowledgeable staff, and adequate funding (Antônio, et al., 2015). The aforementioned studies have focused on various aspects of project performance, thereby pointing out a gap that the current study, which focuses only on the effectiveness of road projects in Kenya, aims to fill. As a result, the study's road projects' performance will be measured by their adherence to financial restrictions, the standard of their roads, and how quickly they are completed.

A project's likelihood of success depends on a number of variables, including the project's complexity, contract terms, the relationships between the parties involved, the project manager's abilities, and the capabilities of other parties (DeCotiis & Dyer, 2019). Cao and Hoffman (2020) argue that performance-based measures are commonly utilized to evaluate project implementation. These measures encompass project efficiency, effectiveness, and the acquisition and presentation of pertinent information.

Consequently, project performance can be assessed based on expenditure, time allocation, quality of performance, and adherence to user requirements.

Performance measurement serves as a valuable tool for evaluating project performance and aiding organizations in comprehending past project successes and failures, thereby facilitating future improvements and developments (Liang & Wang, 2019). Furthermore, according to Björklund, Martinsen, and Abrahamsson (2020), project performance measurement is crucial for businesses to conduct benchmarking. By comparing project performance, novel approaches to reducing project duration, lowering project costs, and meeting project scope can be devised. Therefore, accurate classification of projects based on similar criteria and characteristics is essential in measuring and enhancing project performance.

In the field of project management, satisfying end users' needs is a critical factor in success. Project managers must therefore create measures of fit to assess this component, indicating that the solution fully satisfies the requirement (Vleems, 2018). Additionally, customer satisfaction signifies the fulfilment of customer requirements. This necessitates the project to deliver on its promises while adhering to the specified requirements. Project performance measures, according to Haq, Liang, Gu, and Ma (2016), give managers the knowledge they need to keep the project under control. In order to properly manage project performance, these measures ought to be suitable for the organizational level, which can act quickly to implement changes based on information obtained.

Globally, clients in the public and private sectors are concerned about construction projects' completion. The development of a carefully thought-out project schedule and

knowledge of critical success factors are necessary for project success (Hijazi, 2021). As a result, the stakeholders and project manager are better equipped to decide and act in ways that advance the project's success. A number of factors that are commonly acknowledged by the research community as being important to a project's success are its goal, the support of upper management, the planning of the project time table, consumer consultation, personnel, technology assist, patron popularity, monitoring and feedback, conversation channels, and troubleshooting (Barber & El-Adaway, 2022).

Construction in the United States is an industry that exhibits significant diversity and is deeply intertwined with the overall economy. In fact, many of the primary economic indicators in the United States are derived exclusively from the construction sector (Chokor, Elasmar & Sai Paladugu, 2017). Despite the focus of this document on the United States, it is important to recognize that the construction industry is influenced by global events and trends. As highlighted by Kelly and Ilozor (2019), the construction industry is intrinsically linked to the trajectory of the economy and society as a whole. The built environment holds immense importance for individuals within modern mainstream society, with Americans spending an average of 90% of their time indoors.

Numerous projects worldwide encounter failure, leading to significant financial losses for organizations, as noted by Ahmad, Younis, Ahmad, and Anwar (2015). In order to expedite their growth, organizations have adopted a project-based approach by dividing their work into individual projects. Iram, Khan, and Sherani (2016) assert the urgent need for research to identify the most critical success factors for project success within Pakistan's public sector organizations. They conduct an analysis of the challenging environment faced by these organizations in Pakistan, taking into account emerging technologies and trends. Given the complexities associated with evaluating project

success, it becomes imperative to effectively and efficiently meet project requirements. Additionally, the project's constraints must be successfully managed and controlled.

The building of roads is essential to Turkey's economic growth. In addition to motorways that facilitate transportation between urban areas or between urban and rural areas, the construction of rural roads is crucial for economic and social development in rural regions (Ayaz, Ozcanli, Nakir, Bhusal & Unal, 2019). Ateş, Atasoy and Öztürk (2020) emphasize the significance of local road construction in Turkey, as it aligns with the Pakistani government's policies and receives support from foreign countries. The existing network of local roads in rural areas is inadequate in providing access to agricultural product markets, nearby urban areas, schools, healthcare facilities, religious facilities, and other essential amenities, thus impeding the improvement of living conditions for locals. Insufficient in number and lacking paved surfaces, these local roads require attention.

In developing countries, the majority of projects are executed alongside the day-to-day operations of functional organizations that have limited project management capabilities. Frimpong, Oluwoye, and Crawford (2017) highlight various factors that have hindered the implementation of government projects in Ghana, including inflation, project complexity, inaccurate material estimation, financing challenges, change orders, design changes, delayed submission of drawings, poor specification, incorrect site information, and inadequate contract management. Similarly, Alutu and Udhawuve (2019) observe that projects in these countries are influenced by prevalent issues such as corruption, war, drought, and the political priorities of the government.

In the Sub Sahara Africa region, the failure of construction projects is predominantly associated with performance issues. Numerous reasons and factors contribute to such problems. The evaluation and measurement of construction project completion can be conducted using a broad range of performance metrics related to different aspects, such as time, money, quality, client satisfaction, client modifications, company performance, health, and safety.

In Kenya, the completion of construction projects takes into account aspects such as time, cost, and the satisfaction of project owners. In a study published in 2022, Muturi and Oguya (2022) looked at the people working on construction projects to determine the main real-world obstacles influencing project performance in Kenya's coastal region. The aim was to develop suggestions for improving the efficiency of building projects within this specific area. The study came to the conclusion that political unrest in Kenya's coastal region and late payments caused material shortages, which caused projects to run behind schedule and cost more than anticipated.

At the moment, one of Kenya's biggest problems is how well government projects are performing. Achieving project success requires effective project management. Wamuyu (2020) notes that projects undertaken by the Kenya Urban Roads Authority (KURA) should align with the organization's strategic review, enabling a heightened focus on customers, innovative autonomy, and fostering an entrepreneurial lifestyle and adaptable overall performance amongst personnel. thinking about the strategic importance of tasks to a corporation, efficient project management tools that track developments and hazards, while ensuring that the correct projects are completed according to organizational priorities, are imperative for improving project performance.

The degree to which a project meets predefined objectives, targets, and goals is referred to as its "project performance" (Kotnour, 2017). Project performance measurement is the process of calculating the efficacy and efficiency of actions, according to Neely, Gregory, and Platts (2020). Quantification is a component of measurement, and performance is the result of actions. Therefore, project performance is a gauge for how well a project that has been substantially completed achieves its overall set of predetermined targets, goals, and objectives.

Projects that are considered successful usually meet predetermined performance standards, like meeting deadlines, budget constraints, and stakeholder quality requirements. Today, the delivered project's suitability for its intended use and lack of rework are frequently the determining factors in project success (Muchelule, 2018). Munyoki (2020) states that project deliverables can be evaluated for performance by comparing them to key performance indicators. Thus, if a project stays within budget, is finished on schedule, and complies with functional and technical requirements, it is considered to have performed well.

The way a project performs is a key factor in determining its success. It is affected by a number of variables, including the project's complexity, contractual agreements, the dynamics between the parties, the project manager's abilities, and the capacities of other stakeholders (Nabulu, 2015). According to Mwangi, Yang'wara, and OleKulet (2019), project performance is typically evaluated and measured using specific indicators that assess its efficiency and effectiveness. These indicators provide a standardized approach to gathering and presenting information related to the project's inputs and outcomes. They encompass measures like expenditure, time taken, quality of deliverables, and alignment with user requirements.

According to Kiage (2019), a project can only be successfully completed when all stakeholders are involved, either collectively or individually, meet their respective targets. While staying within the project budget is a crucial determinant of success, the timely completion of the project is equally important. Similarly, and according to Kiambi and Mugambi (2021), achieving the pre-established performance standards for a project and cultivating a positive stakeholder relationship are what characterize a project's quality. Thus, raising the caliber of deliverables results in the creation of excellent goods and services that successfully satisfy client demands.

In order to improve the product's quality, cost, cycle time, and responsiveness, project delivery is interested in the procurement technique (Sanderson & Cox, 2018). The pre-acquisition segment, the gentle procedure and contract award, contract and supplier management, and different tiers incorporate the procurement manner, according to Baldi, Bottasso, Conti, and Piccardo (2019). Every step needs a precise, methodical design in order to guarantee the best results. As a result, the business needs to understand the critical elements involved in choosing a particular supplier, or, to put it another way, it needs to figure out the assessment standards.

Mellado and Lou (2020) emphasize that project performance is an essential objective for projects funded by the Malaysian public sector. The success of these projects is evaluated based on numerous parameters, which often conflict with each other. The most common parameters include time, cost, and quality. However, the Malaysian public sector has consistently reported poor performance. Othman and Ismail (2021) note that the lack of consensus on measuring project performance has resulted in diverse opinions regarding the parameters for performance and success measurement. Hence,

the government of Malaysia must make sure that projects are finished on schedule, within budget, and to the necessary general and quality standards.

The traditional design-bid-build procurement system continues to dominate the Nigerian public sector, and this trend is expected to persist. Additionally, the Nigerian public sector involves clients, contractors, subcontractors, suppliers, and key professionals who are responsible for project design and supervision (Odenyinka & Yusuf, 2017). According to Odeyinka and Yusuf (2020), one of the most significant challenges faced by the Nigerian public sector is project cost overrun, which leads to projects being completed at higher costs than initially planned. Therefore, it is crucial to work with realistic project estimates from the beginning to eliminate uncertainties and establish a solid foundation for project success.

Projects funded by public organizations in Ghana have encountered pronounced performance problems related to the irregular release of budget for production initiatives, delayed fee by using the consumer, and insufficient contract information and performance assessment (Baiden-Amissah, 2019). Best and Valence (2021) suggest that projects funded by the Ghanaian government suffer from practices such as frequent delays in approving funding applications, inadequate estimation of infrastructure costs resulting in underfunding, and imposing tight time constraints for bid preparation. Consequently, determining the variables that affect project performance is essential in order for project managers to take appropriate action to optimize project outcomes.

According to Mwakajo and Kidombo (2017), projects in Kenya face difficulties when they are being implemented, especially when it comes to achieving their intended goals. This is demonstrated by the fact that an ineffective implementation process resulted in

the project's failure to meet quality standards, budgets, and timelines. Historically, the government or government-appointed contractors managed projects in Kenya. Choge and Muturi (2019) emphasize that projects play a significant role in the nation's development and require substantial financial investments, hence the increasing involvement of County Governments in project implementation. Consequently, it is essential to conduct project evaluations throughout the entire project life cycle to ensure accurate assessment, guarantee the achievement of project goals, and recommend improvements in areas where success is lacking.

The projects' owned by the Kenyan government projects performance is hindered by the inadequate training of staff in financial management, leading to their involvement in cash handling, as well as budgetary constraints imposed by relevant authorities and bureaucratic procedures. These factors contribute to project delays and sometimes result in project abandonment when the national and county governments fail to allocate funds in a timely manner (Gathoni & Ngugi, 2016). Ngacho and Das (2020) highlight the importance of access to capital for infrastructure projects, as it significantly impacts project performance. The allocation of financial resources by county governments in Kenya has a profound effect on project outcomes. Therefore, the amount allocated to a development project plays a critical role in determining the project's completion time and overall performance.

Road construction and maintenance projects exhibit a notable requirement for substantial investment and capital resources, requiring cooperation between the public and private sectors. Ullah, Thaheem, and Umar (2017) ascertain that governments encounter numerous challenges in delivering utility projects to the public due to budgetary deficiencies, Consequently, the private sector was prompted to become

involved in order to finance these initiatives and achieve reasonable returns. The occurrence of delays in the timely completion of major road construction projects can be attributed to insufficient government budgets, which can be rectified through the intervention of private entities. Moreover, the protracted bureaucratic processes encountered by the private sector in project implementation are no longer a concern, as the government's involvement in public-private partnerships resolves the associated intricacies. Consequently, the adoption of the public-private partnership (PPP) approach effectively addresses the challenges of financial constraints, inadequate contractors, cost overruns, and delays, as both parties collaborate to achieve a high success rate in road projects.

The implementation of the PPP strategy significantly affects the duration of road construction, project quality, service provision, and project delivery timelines (Villalba-Romero & Liyanage, 2016). Timely completion of road construction projects not only reduces costs but also mitigates project risks. The utilization of PPP facilitates the employment of highly skilled contractors, thus enhancing the quality of work, owing to the availability of adequate funds for their remuneration. Ahmad, Ibrahim, and Minai (2018) elaborate that the PPP concept enables the realization of highly successful projects by effectively addressing risks through meticulous identification and management, thereby enhancing the execution of road projects. Additionally, Liang and Jia (2018) contend that the achievement of high-performing infrastructure projects hinges upon the active engagement and involvement of stakeholders throughout all project phases. The diverse range of stakeholders contributes to project success by fostering innovation and implementing novel approaches, thereby yielding favourable outcomes over time.

Nearly 90% of Africa's transportation sector is made up of road systems, which are of poor quality and standard, necessitating sector investment (Akpoghome & Nwano, 2020). Osei-Kyei and Chan (2017) point out that the adoption of PPP in the Ghanaian construction industry was made possible by the government's dedication, private sector financing, and coordinated stakeholder support. According to Ndunda, Paul, and Mbura (2017), Kenya has inadequate roads because of budget deficits and a heavy reliance on foreign debt to finance road construction. As a result, PPPs, as highlighted by Pedo, Kabare, and Makori (2018), will improve how well road projects perform. Given this, the current study aims to determine the portion of that Kenya's independent public-private partnership strategy plays in the execution of road projects. The PPP strategy will be operationalized in this study with regard to stakeholder management, risk management, project identification, and project financing.

1.1.3 Legal Framework

The legal framework in public-private partnerships plays a crucial role in determining the success or failure of a project. This framework outlines the rights, responsibilities, and obligations of each party involved in the partnership, including the government entity and the private sector partner (Queiroz & Martinez, 2019). Liu, Love, Davis, Smith and Regan (2022) observe that it is essential for public-private partnerships to have a robust legal framework in place that addresses key issues such as project financing, performance monitoring, accountability, and transparency. By ensuring that the legal framework is well-defined and effectively implemented, public-private partnerships can maximize their potential for success and deliver value for all stakeholders involved.

Zayyanu and Johar, (2021) observe that a well-defined legal framework helps to establish clear guidelines for decision-making, risk allocation, and dispute resolution, which are essential for ensuring the smooth implementation of the project. It also helps to protect the interests of both parties and ensures that the project is carried out in accordance with the agreed-upon terms and conditions. On the other hand, Hodge and Greve (2023) indicate that a poorly designed or ambiguous legal framework can lead to misunderstandings, conflicts, and delays in the project implementation. It can also create uncertainty and increase the risk of legal disputes, which can ultimately jeopardize the success of the project.

Public-private partnerships (PPPs) have become increasingly popular in project management as a way to leverage the strengths of both the public and private sectors to deliver infrastructure and services efficiently. However, the success of these partnerships relies heavily on the implementation of a strong legal framework that governs the relationship between the public and private entities involved (Filippova, Budnyk, Mykhailiv, Hryniv & Los, 2020).

The legal framework in PPP project management serves several key purposes. Firstly, it helps to define the roles and responsibilities of each party, ensuring that there is clarity and accountability throughout the project. This includes outlining the scope of work, financial obligations, risk allocation, and dispute resolution mechanisms (Soyeju, 2018). According to Queiroz and Martinez (2020) the legal framework provides a mechanism for enforcing compliance with regulations and standards, ensuring that the project meets all legal requirements and operates in a transparent and ethical manner. This can help to build trust and confidence among stakeholders, including investors, lenders, and the public.

Mazouz, Facal and Viola (2018) observe that the legal framework in PPP project management serves several key purposes. Firstly, it helps to define the roles and responsibilities of each party, ensuring that there is clarity and accountability throughout the project. This includes outlining the scope of work, financial obligations, risk allocation, and dispute resolution mechanisms. Secondly, the legal framework helps to protect the interests of both parties by establishing clear guidelines for decision-making and ensuring that all parties adhere to agreed-upon terms and conditions. This can help to prevent misunderstandings, disputes, and potential legal challenges that could derail the project. Therefore, the legal framework can help to mitigate risks, promote efficiency, and ultimately deliver successful outcomes for all parties involved by providing a solid foundation for collaboration, communication, and accountability.

Conti and Peruginelli (2021) contend that it is essential for partners to communicate legal matters and their implications for various projects in an understandable and efficient manner in order for them to accomplish their project outcomes in compliance with the law. In order to address the issues of legitimacy and local acceptance from the community where the projects will be based, the legal framework is essential (Olsen & Anker, 2014). Trust in decision-makers, visual interference, project ownership, and decision-making procedures are some of the elements that increase local acceptance. A strong tool for guaranteeing accountability among public sector organizations is the legal framework (Mosweu & Ngoepe, 2018). Rauter, Schindelegger, Fuchs, and Thaler (2019) claim that the segmented legal framework and involvement of multiple administrative bodies make the legal basis fairly complex. Implementing road projects necessitates the use of legal frameworks because they manage obstacles, bring about change, and create an environment conducive to project management. Implementation

will therefore be impacted by the creation of structures, formalizing policies, and systems (Glyptis, Christofi, Vrontis, Del Giudice, Dimitriou & Michael, 2020). The goal of the current study is to evaluate the moderating effect of the legal framework in light of laws, rules, regulations, standards, policies, and directives.

1.1.4 Road Projects in Kenya

Road transportation is the prevailing means of conveyance in Kenya, accounting for approximately 90% of both cargo and passenger traffic (Adan, 2017). The responsibility for the construction and maintenance of roads lies with the Ministry of Roads and Infrastructure, which carries out these tasks through several agencies. Among these agencies is the Kenya National Highways Authority (KeNHA), established by the Kenya Roads Act of 2007. KeNHA is entrusted with the management, development, and rehabilitation of international roads. Additionally, the Kenya Rural Roads Authority (KeRRA) is responsible for the construction, expansion, and upkeep of all rural roads in the country, while the Kenya Urban Roads Authority (KURA) governs all roads in major cities and their surrounding areas, in accordance with the standards outlined in their service charter. Kenya has a total of 177,800 kilometres of roads, with 63,500 kilometres being classified as separated and 70% of the roads being unclassified (44,100 km). Of the classified roads, approximately 30% (18,900 km) are in poor condition and require rehabilitation. The county governments are collaborating with the national government to construct, rehabilitate, and maintain all roads in the country.

In a study published in 2012, Majanja examined the financial challenges Kenyan infrastructure projects face. Two alternate variables were used in the study, which included 87 construction companies, to gauge financing constraints. The first variable

measured the extent of financial constraints that businesses faced, and the second variable looked at how often businesses used bank credit. To determine perceived financing constraints, respondents were asked to rank the availability of financing as a project performance constraint. The study's conclusions showed that financial limitations were a major barrier for construction companies. The research pinpointed crucial concerns and obstacles that regional construction companies encountered, impeding the funding of their undertakings. Majanja suggested that in order to guarantee sufficient funding for road construction projects, the government should support public-private partnerships. Simmons (2012) also noted that a perceived lack of collateral security made it difficult for local businesses to obtain credit facilities. Majanja, though, assumed that funding and project success were directly correlated. To increase the reliability of the findings, this study includes additional crucial variables like group dynamics management, monitoring, and evaluation. The research reaches the determination that the execution of road infrastructure projects conducted by indigenous enterprises is significantly influenced by the activation of project resources. The performance of road infrastructure projects is significantly impacted by the availability of technical, financial, and physical resources. Government guarantees and public-private partnerships will be essential in facilitating the acquisition of financial and technical resources. Consequently, this will improve the performance of road infrastructure projects that local businesses are involved in.

1.2 Statement of Research Problem

The African Development Bank estimates Africa’s infrastructure needs at USD 130–170 billion annually (United Nations Economic Commission for Africa, 2023). In response to this growing demand, Kenya has intensified its use of Public–Private

Partnerships (PPPs) as a financing and delivery mechanism. Between 1990 and 2014, the country achieved financial closure on 25 PPP projects with a total investment of USD 9.3 billion. By 2023, this number had risen to 71 projects valued at approximately USD 200 billion, demonstrating Kenya's increasing reliance on PPPs to support infrastructure development amidst persistent fiscal pressures and the aspirations of Vision 2030.

Road transport plays an essential role in Kenya's economic productivity by facilitating the movement of goods and people, supporting value chains, and enhancing regional integration. However, road construction requires substantial financial resources, specialised expertise, and efficient long-term project management. With diminishing fiscal space and rising public expenditure demands, the Kenyan government has increasingly turned to PPPs to mobilise private capital, transfer risks, and enhance the efficiency of delivering major road projects.

Despite this expansion in PPP adoption, the performance of road PPP projects in Kenya remains a significant concern. Evidence from prior studies shows recurring delays in the completion of road projects (Wera, 2016; Mutwiri et al., 2018), while issues such as substandard construction materials, the use of inexperienced contractors, weak governance arrangements, and insufficient budget allocations continue to compromise the quality of road infrastructure (Ochienge, 2018). These persistent challenges indicate that although PPPs have been widely adopted, the mechanism is not consistently delivering the intended improvements in road project performance. This constitutes the core problem: PPP road projects in Kenya continue to underperform despite their growing prominence, thereby limiting progress in national development, value for money, and economic competitiveness.

Existing research does not adequately explain the causes of this underperformance. Several studies contribute useful insights but leave important gaps. For instance, Huang et al. (2016) examined PPPs in the Chinese transport sector but did not analyse the specific mechanisms that influence project outcomes, nor does the context match the realities of Kenya. Debela (2019) focused on critical success factors for PPPs in Ethiopia, but the findings do not directly address how PPP mechanisms affect road project performance. Studies such as Amadi, Carrillo, and Tuuli (2018) concentrated on stakeholder management alone, omitting other critical elements such as project identification, financing structures, and risk allocation. In Kenya, Pedo, Kabare, and Makori (2018) reviewed the PPP framework without linking it to actual project performance, while Adan (2017) examined road projects within a single county without focusing on PPP arrangements. These limitations demonstrate that although the literature highlights challenges in PPP implementation, it does not provide a comprehensive, context-specific analysis of how PPP mechanisms shape the performance of road infrastructure projects in Kenya.

This gap in knowledge constrains the ability of policymakers, practitioners, and project sponsors to address performance weaknesses in road PPP projects effectively. What remains insufficiently understood is the extent to which PPP mechanisms—particularly project identification processes, financing structures, risk management practices, and stakeholder participation—affect the outcome of road projects within Kenya's PPP framework. This study seeks to fill this knowledge gap by examining how these mechanisms collectively influence the performance of road infrastructure projects in Kenya. Through this analysis, the research aims to generate empirically grounded

insights that can support the optimization of PPP arrangements for improved infrastructure delivery.

1.3 Objectives of the Study

The general objective of the study was to assess the effect of PPP mechanisms on the performance of road infrastructure projects in Kenya.

The specific objectives were:

1. To assess the effect of project identification on the performance of road infrastructure development projects in Kenya.
2. To explore the effect of project financing on the performance of road infrastructure development projects in Kenya.
3. To evaluate the effect of project risk management on the performance of road infrastructure development projects in Kenya.
4. To investigate the effect of stakeholder participation on the performance of road infrastructure development projects in Kenya.
5. To examine the moderating effect of the legal framework on the relationship between public-private partnership mechanisms and performance of roads infrastructure development projects in Kenya.

1.4 Research Questions

1. How do project identification processes affect the performance of road infrastructure development projects in Kenya?
2. How does project financing affect the performance of road infrastructure projects in Kenya?

3. To what extent do project risk management affect the performance of road infrastructure projects in Kenya?
4. How does stakeholder participation relate with the performance of road infrastructure development projects in Kenya?
5. What is the moderating effect of legal framework on the relationship between public-private partnership mechanisms and performance of roads infrastructure development projects in Kenya?

1.5 Justification and Significance

In order to address public inefficiency, policymakers are increasingly choosing public-private partnerships (PPPs) to carry out significant road infrastructure development projects. This is especially true given the government's limited financial resources and the growing emphasis on value for money. PPP maximizes the advantages that the private sector can offer in terms of skills and management while enabling governments, which are already able to access resources more readily in the current economic environment, to use alternative financing mechanisms for private companies.

Future researchers as well as the Kenyan government, private partners, and project management experts would all benefit from the study. The Kenyan government would make use of the study's conclusions to improve ties with private investors and guarantee that funds are allocated to road infrastructure development projects efficiently. Additionally, the government would put policies into place that support cooperative efforts between the public and private sectors and favourable working conditions.

The study would aid private partners in better managing their human, financial, time, and physical resource allocation to enhance the performance of other developmental

projects, such as those involving the development of road infrastructure. Project managers would use the study's findings to ascertain how PPP strategy and the success of road infrastructure development projects relate to one another.

Future researchers would make use of the study's findings to conduct comparable research in other settings, adding to the body of knowledge already available on PPP mechanisms and the most effective ways to apply them to enhance the performance of road infrastructure development projects. This study will serve as a source of literature and references for researchers and scholars working in the future.

1.6 Scope and Limitations

This study focused on PPP-based road infrastructure projects in Kenya. The scope covered all PPP road projects that had been conceptualised and were at various stages of implementation across 21 counties. This scope was deliberately selected because the road sector represents one of the largest and most active PPP pipelines in Kenya, and road transport remains the backbone of national and regional mobility, trade, and productivity. Moreover, the counties included in the study constitute the jurisdictions where the majority of PPP road projects have been piloted or implemented, making them critical for understanding how PPP mechanisms operate within Kenya's devolved governance and infrastructure delivery framework. By concentrating on this subset of projects and counties, the study was able to generate findings that are both sector-specific and representative of the geographical and administrative diversity in PPP road project implementation.

The study anticipated several limitations within this scope. Some high-ranking government officers, private contractors, and project sponsors were expected to be

constrained in the type and depth of information they could disclose due to the sensitivity of contract management issues and compliance requirements under the Data Protection Act. Additionally, PPPs in road construction remain a relatively new practice in Kenya, and institutional reforms following the enactment of the PPP Act of 2021 created transitional challenges. These include incomplete electronic databases, limited historical records, and reliance on subjective or inconsistent information within road sector departments. To mitigate these constraints, the study incorporated secondary data from bilateral and multilateral agencies that have supported Kenya's PPP programme, thereby providing reliable supplementary evidence for triangulation.

The significance of the study will lie in its contribution to improving the design, governance, and performance of PPP road projects in Kenya. The findings will offer evidence-based insights that policy makers, practitioners, and project sponsors will use to strengthen PPP mechanisms in project identification, financing, risk management, and stakeholder coordination. In addition, the study will inform future reforms in PPP policy, institutional arrangements, and contract management. It will also provide a foundation for further academic inquiry by filling existing knowledge gaps on how PPP mechanisms influence road project performance within the Kenyan context.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the literature relevant to the study. It begins by presenting the theoretical framework that anchors the research, followed by a chronologically organized empirical literature review focusing on performance of road projects and the four PPP mechanisms examined in the study: project identification, financing, risk management, and stakeholder participation. The chapter also reviews the legal and regulatory framework underpinning PPP implementation. Thereafter, a conceptual framework is presented to illustrate the relationships among the study variables. The chapter concludes with a summary of the identified gaps. This section discusses the theoretical framework, which discusses the theories that anchor the study, the empirical literature review, which discusses previous studies in relation to the study variables, the conceptual framework, which shows how the study variables relate to one another, and finally the literature review summary.

2.1 Empirical Literature Review

2.1.1 Performance of Road Projects

Benamghar and Limi (2011) posit that the economic progress of a nation is closely linked to the quality of its road infrastructure, and that the availability of dependable road access plays a critical role in raising living standards. Researchers have shown that the accomplishment of road infrastructure projects is critical to promoting economic growth and has a major influence on wealth creation and employment opportunities. Faridi and El-Sayegh (2010) have identified several factors that contribute to project

performance, such as project complexity, staff expertise, organizational constraints, inadequate supervision and management, deficient leadership, and insufficient availability of equipment. These factors, along with conflicts among stakeholders and contractor inefficiency, have negatively affected project implementation in Sub-Saharan Africa (Carter, 2012).

In Doloi's study (2012), the focus was on investigating the timing effects and construction risks associated with costs in the operational performance of PPP projects. The research categorized performance into three dimensions: time, cost, and overall effectiveness. Data was collected through a questionnaire survey conducted on seven major PPP projects in Australia. Standard mathematical and analytical methods were employed to evaluate the impact of key risk factors on time, cost, and performance. The findings revealed that one of the most crucial risk factors influencing project timeliness is the prevailing project conditions and complexity. Additionally, market forces were found to significantly impact both construction and operational costs in PPP projects. The study also emphasized the importance of stakeholder management in achieving timely and cost-effective outcomes. According to the research, PPP projects are often characterized by complexity, and the long-term collaboration of autonomous organizations in such projects not only exposes them to time and cost-related risks during the development stages but also introduces risks associated with project performance.

Wang and Zhao (2018) looked at how public-private partnerships operated as well as the effects of contracts. The study analysed how various contractual arrangements influenced the achievement of every diagnosed intention and proposed a conceptual framework for evaluating PPP overall performance through comparing actual venture

consequences with the government's desires for starting up those partnerships. To implement the framework, a comparative case study of the Commonwealth of Virginia's highway PPP experiences since the 1990s was carried out. The results showed that these PPP cases were effective in obtaining creative financing, but they performed differently in terms of transferring revenue risk and reducing construction risk. The research brought to light the ways in which legislative and policy support, which improved with successive projects, interacted with contractual arrangements, personal companion choice, monetary arrangements, function department, risk allocation, and project characteristics to affect PPP performance.

Felix Villaba (2016) conducted a study on the efficacy of PPP road projects in Europe by comparing various methods of performance measurement. The study utilized a step-by-step performance plan (PMS) and examined 13 PPP road projects in the EU as representative samples for research and analysis. Nine key performance indicators (KPIs) and a total of 29 performance measures (PMs) were taken into account. The results of the study show that the ability of a road project to achieve ideal or widely anticipated outcomes in terms of cost, system, quality, safety, and stakeholder satisfaction determines the project's success. However, it is important to note that due to the use of a case study design, the findings cannot be generalized to a broader population. Additionally, the study was limited in its focus on PPP toll roads in Europe.

An investigation was carried out in Malaysia by Lop, Ismail, Isa, and Khalil (2017) into the factors that affect PPP projects' operational performance. The investigators utilized a qualitative methodology, collecting data through semi-structured interviews. PPP experts who were chosen by purposive sampling comprised the sample population. Software designed for qualitative analysis was used to examine the gathered data. The

study identified eight factors that contributed to the poor performance of the projects, including service delivery failure, inadequate performance assessment strategies, insufficient monitoring, limited understanding of PPP among stakeholders, and ineffective management.

The timely completion of projects within the allocated cost is indicative of effective project management. In Pakistan, the construction industry, which contributes 2.4 percent to the total GDP, faces challenges due to inadequate investment in the infrastructure sector, particularly in roads and rail. This lack of investment, coupled with poor management, often leads to project delays and cost overruns (Khattak & Mustafa, 2019). Similarly, a study on the factors that have a negative effect on the quality of highway projects in Pakistan was carried out by Sohu, Ullah, Jhatial, Jaffar, and Lakhiar in 2022. A questionnaire survey and a review of the literature were both used in the research methodology. 24 common factors that negatively impact quality in the construction industry were found in the literature review. Based on the literature review, the researchers gave construction professionals working on highway projects in Pakistan a questionnaire. The Statistical Package for the Social Sciences (SPSS) was used to analyse the data that was gathered from 215 respondents. The study found that the main things that negatively impact Pakistani highway projects' quality are inexperienced main contractors, poor planning, and poor material selection.

A study by Kazaz, Ulubeyli, and Tuncbilekli (2021) looked into the reasons behind road construction project delays in Turkey. The study concentrated on the causes of time extensions and their relative importance in the Turkish road construction sector. 34 variables in all that impact project duration were taken into account. A questionnaire survey, consisting of these factors, was administered to 71 construction companies in

Turkey, and the results were analysed using statistical methods. The study's conclusions showed that "design and material changes" were the main cause of delays, with " postpone of bills" and "coins float problems" following carefully at the back of. Monetary elements have been located to be the most influential group, at the same time as environmental elements had the least effect, based on the relative importance of the various groups of factors.

Xiao and Proverbs (2022) conducted a research investigation on the factors influencing construction costs based on the practices of contractors in Japan, the UK, and the US. The researchers employed multiple regression analysis and found that lower overhead costs, fewer prefabricated components, and less variation in design could lead to a reduction in construction costs. However, the use of prefabricated components may pose challenges in cases where there are delays in production, inadequate coordination between design and construction, and congestion in transportation on site. Furthermore, design variations during the construction process introduce uncertainties and disrupt the construction workflow. These factors have a significant impact on construction costs and require careful attention and consideration.

In developing countries, such as those in Sub-Saharan Africa, Jedwab and Storeygard (2019) observed that a substantial number of government projects are dedicated to road construction due to the significance of roads as the primary mode of transportation. Abdullahi, Lemanski, Kapogiannis, and Jimenez-Bescos (2022) sought to characterize and evaluate the emergent behaviour of complexity during Sub-Saharan Africa's mega-infrastructure project construction. Using an online questionnaire survey for data collection and exploratory factor analysis (EFA) for data analysis, the researchers used a quantitative methodology. Task complexity, distributed remote teams, multiple

project locations, and project scope were found to be indicators of structural complexity in the study, which presented extremely difficult challenges for project managers. In addition, it was discovered that factors such as project duration, schedule, construction method, and method uncertainty added to the overall uncertainty during the construction process.

Alinaitwe and Ayesiga (2020) conducted a research study to examine the key factors for successfully implementing public-private partnerships (PPP) in Uganda's construction industry. The study involved interviews with three primary stakeholders in the construction industry: contractors representing the private sector, representatives of financial institutions, and government departments responsible for the construction of public facilities. These interviews were used to validate the success factors identified in the literature. The factors were then evaluated through questionnaire surveys, and the coefficient of variation was used to rank the factors based on their importance to each party involved. The study identified several significant cross-cutting factors, including an aggressive procurement manner, a properly-prepared personal zone, the provision of capable employees for participation in PPP projects, and good governance.

Oluwajana, Ukoje, Okosun, and Aje (2022) carried out research to find out what influences how well road construction projects in Nigeria are completed on schedule and within budget. The researchers employed a purposive sampling method to select 131 participants who were clients, registered contractors with the ministry of consultants, and workers who were corporate members with their professional body, from a total frame of 223. Questionnaires were given to these individuals, and SPSS 24 was used to analyse the data gathered. Simple descriptive and percentile tables were used to present the results. Spearman's rank correlation become applied to research the

connection among the original settlement sum and the real of completion fee. The researcher’s findings confirmed that the main variables influencing the well timed crowning glory and overall performance of road creation tasks in Nigeria had been insufficient equipment, a lack of managerial knowledge, the complexity of the challenge, equipment failure, and a shortage of materials.

Mavetera, Sekhabisa, Mavetera, and Choga (2021) carried out an investigation to find out what factors affect the success of building projects that up-and-coming contractors in the Mahikeng region of South Africa take on. The research method used a mixed design in order to gather, examine, and interpret the data. The projects did not meet the time, scope, cost, and quality requirements, according to the results. The focus group interviews disclosed that the emerging contractors' deficiency in project management skills was the root cause of these issues. It is therefore advised that in order to help these contractors, the South African Department of Public Works and other significant players in the construction sector offer extra support programs.

An analysis was carried out by Kullaya, Alemu, and Yeom (2022) to determine the primary reasons behind Tanzania's road construction projects' completion delays. Through an interactive online workshop with experts and professionals from Tanzania's road construction industry, the researchers created a structured questionnaire. Additionally, follow-up interviews were held. The findings and subsequent discourse revealed that the factors that were identified could be classified into five significant groups: those related to the client, consultants, contractors, design, and external factors. It was discovered that these elements greatly add to Tanzania's road construction project delays. Furthermore, these groups identified six major reasons for delays: insufficient funding and late payments for finished work; financial issues or challenges; incapacity

to continue operations as a result of protracted non-payment; an unrealistic work schedule; insufficient site management; and political meddling.

Oluwajana, Ukoje, Okosun, and Aje (2022) conducted a study to investigate the factors that impact the time and cost performance of road construction projects in Nigeria. The researchers hired a purposive sampling method to select 131 individuals who had been clients, registered contractors with the ministry of specialists, and people who had been corporate members with their expert body, from a complete body of 223. these participants had been administered questionnaires, and the accrued statistics become analysed the use of SPSS 24. The findings were offered in simple descriptive and percentile tables. To have a look at the association between the initial settlement sum and the actual of entirety value, Spearman's rank correlation turned into utilized. The outcomes of the take a look at found out that inadequate gadget, inadequate managerial competencies, venture creation complexity, equipment failure, and fabric shortages were the big factors that affected the well timed of entirety and overall performance of avenue creation initiatives in Nigeria.

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2.1.2 Project Identification and Performance of Road Projects

Project identification plays a crucial role in the successful completion of any project, with some researchers considering it as the initial step in the project cycle (Qian et al., 2017; Ministry of Finance, 2020). Various definitions of project identification have been proposed, and Wera (2016) provides a comprehensive definition that encompasses the evaluation of projects and the careful selection of a project to align with organizational objectives. Both the public and private sectors must think about how they can best accomplish their respective goals in the context of public-private partnerships, or PPPs. While the private sector strives to maximize overall organizational gains, the public sector aims to provide citizens with essential services.

In 2015, Berssaneti and Carvalho carried out research on the factors that affect project success in Brazilian companies. They used a survey of 336 project management experts working for Brazilian companies as part of a methodological research strategy. The findings demonstrate significant associations between all aspects of the "iron triangle" of project success - time, cost, and technical performance - and project management maturity. However, customer satisfaction was not found to be related to these variables. Top management support and a dedicated project manager, as moderate variables, were found to have a significant impact on the time dimension of project success, but not on customer satisfaction.

Taufik (2019) carried out research on the determinants affecting project efficiency in road construction projects in Malaysia. The information for this research was gathered from project managers working for project owners in four regions: South Sumatra, Lampung, Bangka Belitung, and Bengkulu. Prior to data analysis, the reliability of the data was evaluated through Cronbach's alpha to confirm its accuracy. Subsequently, multiple regression analysis and Pearson correlation were employed for data examination. The results indicate that the factors linked to project identification significantly influence the project's results.

A recent research conducted by Gómez-Cabrera, Sanz-Benlloch, Montalban-Domingo, Ponz-Tienda, and Pellicer (2020) delved into the factors influencing the performance of rural road projects in Colombia during the project identification phase. The primary objective of this investigation was to utilize data from 535 rural road projects in Colombia spanning from 2015 to 2018 to pinpoint crucial variables that contribute to delays and cost overruns. The study revealed, through bivariate analysis using statistical methods such as Spearman's Rho and Kruskal-Wallis, that factors like project

complexity and budget are directly linked to variations in time and cost. Furthermore, it was observed that shorter projects are more prone to experiencing delays. The research also highlighted that projects executed in municipalities with greater resources, those awarded through competitive bidding processes, and those implemented in the year of council mayors' tenure tend to perform poorly. Random Forest multivariate analysis was employed to rank the importance of each variable and evaluate the collective impact of all variables. The results indicated a significant correlation between time performance and cost, with numerical variables carrying more weight than categorical ones.

Makhdumi and Taha-El-Baba (2022) conducted an investigation on the approaches to project identification in mega construction projects in developing countries, focusing on cases from Pakistan. The research utilized a case study inquiry strategy, which involved conducting three case studies and interviewing project managers involved in the respective mega construction projects. Two major findings emerged from this study. Firstly, it was found that the project management approaches contributing to the success of Mega Construction Projects in developing countries align with those documented in the existing literature. These include having clear project objectives, receiving support from senior management, involving and consulting stakeholders, and having a competent project team. Secondly, the research identified specific project management approaches and Critical Success Factors that are particularly relevant in the context of developing countries. These include outsourcing and collaboration, organizational culture, and the attitude of local stakeholders.

Mkuni (2018) conducted a study that focused on assessing the project identification cycle in road construction projects in Zambia. The study utilized a cross-sectional

research design and focused on professionals engaged in the planning of public road construction projects at both the national and district levels. These professionals were interviewed and surveyed through questionnaires. Additionally, three case studies were conducted following a thorough literature review, employing a triangulated methodological approach. The results of the study highlighted specific limitations in the road project planning process. It was determined that shortcomings in project identification procedures had adverse effects on project implementation, resulting in increased costs, delays, and compromised quality.

In a study published in 2021, Nnadi, Ejiofor, and Emmanuel examined the effect of project identification on the efficiency of road construction projects in Nigerian construction companies. The researchers collected data for their study through the use of questionnaires, direct observation, and oral interviews. Subsequently, they analysed the collected data utilizing percentages and regression tools in Eview8. The study's conclusions showed that a sizable percentage of respondents (38.8%) strongly agreed that appropriate project identification has a significant impact on how well road construction projects perform. Furthermore, the regression analysis revealed an R2 value of 0.555 and a P-Value less than 0.05, indicating that approximately 55.5% of the variation in road project performance can be attributed to proper project identification.

Yidnekachew's (2021) research was centered around assessing the practice of project identification and design, with a specific focus on the case of World Vision Ethiopia. In order to gather data for their study, the researcher utilized semi-structured interviews as the primary data source, while analysis of existing organization documents served as the secondary data source. The study adopted a descriptive research design and employed a qualitative research approach. The data was collected through purposive

sampling of key employees and the use of semi-structured interviews. Interviews were conducted with a total of 15 employees from three departments dedicated to project design. For data analysis, the researchers created a tabulation and checklist of practice against industry standards. The findings of the study revealed that a majority of grant-funded project ideas originated from donors. Additionally, the organization demonstrated proficiency in involving stakeholders in the identification and design of projects for both funding sources.

Wera (2016) used a case study research design to examine the relationship between project identification and project performance. The study's conclusions showed that successful project identification can have an impact on a project's completion within budget, on schedule, and with high quality. The study also brought attention to two important aspects related to project identification, namely problem analysis and risk management. However, it is important to note that due to the reliance on a case study design, it is not possible to extrapolate the study's conclusions to a larger population. Furthermore, it is worth mentioning that more than 50% of the respondents were beneficiaries who typically do not participate in decision-making during the early stages of project identification.

In three randomly chosen constituencies in Kenya, Mutwiri *et al.* (2018) carried out a study to investigate the significance of project identification and initiation in the success of CDF projects. According to their findings, project identification and initiation accounted for 43.4 percent of the success of CDF projects. This suggests that if these aspects are properly executed, most projects would have a strong foundation for success in terms of project timelines, budget, and quality of the final product (Wera, 2016).

However, it is important to note that the study was limited to information gathered from only three constituencies, which restricts its applicability to only the sample studied.

Given the multiple actors involved in PPP projects, each with their own interests, the capital-intensive nature of these projects, their long-term duration, and the complex environments in which they are conducted, effective project identification is crucial. Both Wera (2016) and Mutwiri *et al.* (2018) present a compelling argument for the importance of effective project identification in project performance. However, their studies focused on projects carried out under the traditional contracting-out approach, where the contractor builds and hands over the completed project to the owner. The current study aims to investigate the significance of project identification in PPPs using a larger sample size, primarily targeting top-level management respondents who are likely to be involved in the project from the initial stages. Furthermore, the study will specifically focus on project identification in PPPs related to road infrastructure development projects in Kenya, as no previous research in this area was found.

Diing and Nyonje (2022) looked at the effects of community water point projects in Turkana County, Kenya, using participatory project identification. To choose their samples, they used convenience sampling and proportionate quota techniques. A range of data collection techniques were employed, including semi-structured questionnaire guides, focus groups, interviews with key informants, and observations. The quantitative data collected was analysed using multiple regression analysis, while the qualitative data was analysed using framework analysis and narrative analysis. Condensed, tabulated, analysed, and conclusions were drawn from the results. There were presented descriptive statistics, such as percentages, frequencies, arithmetic means, and deviations. The research discovered that the involvement of the community

in identifying projects had a notable influence on the long-term viability of water point initiatives within the community.

In order to determine how project identification affects project success, Naeem, Khanzada, Mubashir, and Sohail (2018) conducted a study in which organizational culture served as a moderator and risk management as a mediator. One hundred project managers provided information via questionnaires. The relationship between the variables was analysed using regression and correlation techniques, which showed that planning had a positive effect on success. The study found that predictors had both significant and insignificant effects on the response variables.

2.1.3 Project Financing Mechanism and the Performance of Road Projects

Project financing mechanisms refer to the strategies implemented by project managers to acquire funds and allocate finances to various operational units and project stages. Additionally, it entails the meticulous tracking of expenses to ensure that costs align with the projected budget of the project (Arezki & Sy, 2016). Financial resources are indispensable for the initiation of any project, especially capital-intensive undertakings such as infrastructure development. Lohawiboonkij (2019) asserts that a dearth of funding presents a significant hindrance to the successful execution and delivery of an infrastructure project. Consequently, it is imperative for projects to have timely access to ample funds to facilitate the completion and triumph of project activities. The researcher highlights numerous financing mechanisms available for infrastructure projects, including government funding, project finance, government bonds, bank loans, forfeit model, and countertrade. The selection of the most appropriate financing mechanism hinges upon factors such as the cost and affordability of financing, associated risks, security measures, and covenants for each financing option, contingent

on the employed risk management strategy and availability of finances for infrastructure projects.

Garrido, Gomez, de los Ángeles Baeza, and Vassallo (2017) delve into the financial assistance provided by the European Union (EU) to enhance the Spanish road infrastructure, thereby bolstering economic performance. The study reveals that public-private partnership (PPP) projects that have received financial support from the EU have yielded economic benefits and contributed to the expansion of the economy. The financial backing from the European Union has expedited development and fostered social, economic, and territorial cohesion. The region's growth and progress have been facilitated by the improved accessibility to EU member states through the newly constructed roads. The investigation further demonstrates that the funding programs channelled by the EU towards PPP projects have resulted in their exceptional performance and have consequently yielded high economic returns in the region.

The choice of project financing may be contingent upon the nature of risks associated with obtaining the funds. According to Gorshkov and Epifanov (2016), when considering project financing for the construction of underground structures, there is an assumption that the reimbursement and repayments will derive from the cash flows generated by the project investment itself, particularly when the projects are financed through debt. Implementing large-scale and high-risk projects generally favours debt project financing mechanisms. In such cases, financial institutions like banks, which also serve as the organizers of financing through credits, overdrafts, and the issuance of bonds and stocks, typically act as the sources of funds. Providing funds for projects that are both high-risk and capital-intensive necessitates a thorough examination of the allocation and utilization of the funds. In the case of banks as the financiers, a dedicated

team is usually assigned to monitor and oversee the implementation of the construction project. Shan, Hwang, and Zhu (2017) reveal that regular reports, debt repayment schedules, and the project budget are essential monitoring tools for project finances. These tools enable the financiers to assess whether any deviations have occurred.

According to Naumenkova, Tishchenko, Mishchenko, and Ivanov (2020), sources of finance for infrastructure development projects extend beyond bank financing and include corporate state financing, which operates through the public-private partnership mechanism. Under this arrangement, the state or central government invites private investors to co-finance projects that have been proposed by the public. In return, the private sector gains a stake in the project and is able to recoup its investment from the project's generated income. It is crucial to carefully consider the advantages and disadvantages of each funding source and mechanism employed in financing infrastructure development projects. Project owners must weigh the benefits and drawbacks of options such as public-private partnerships, project financing from stocks, bank financing, and central government financing.

Khmel and Zhao (2016) focus their study on the mechanisms that project owners and developers can employ to attract funds for financing highway infrastructure construction projects. The researchers explore public-private partnerships as a potential source of funding for infrastructure projects. The financial strategy of public-private partnerships proves to be advantageous due to its diversified sources of funds and the involvement of stakeholders in all project phases, thereby enhancing the likelihood of project success. The researchers found that developing a financial strategy facilitated the attraction of capital, thereby increasing the project's capacity to pay off debts through income-generating activities.

Using the concepts of system dynamics, Dabirian, Ahmadi, and Abbaspour (2023) examined how financial policies affected the success of building projects in Japan. A thorough System Dynamics (SD) model was created to evaluate how different financial strategies affected the success of building projects. A dynamic version turned into evolved to forecast, plan, and oversee a selection of rules, which include prepayment, overbilling, loans, incentive bills, charge delays, and device leasing, by using way of identifying the remarks loops inside the cash flow machine. The findings show how remarkable suggestions, including incentive payments, impact the estimation of project cash flow, which in turn influences project duration reduction, project financing during execution, and project profitability.

The findings demonstrate how different policies, such as incentive payments, impact the estimation of project cash flow, which in turn results in shorter project durations, more project financing during execution, and increased profitability. Muhsin (2020) looked into how different forms of financing affected how construction projects were managed in Iraq as they were being implemented. Based on a questionnaire with field data gathered from experts in these companies, a comparison between public and self-financing was made. The elements that encourage financing through the construction industry's company privatization were discussed in the paper. The study found that construction companies' overall performance was negatively impacted by financing weaknesses, especially for those that relied on self-financing. The progress of work may not be achieved or may come to a halt during economic and financial crises, which greatly affects the performance of workers because of inadequate or unsuccessful financial backing.

Siborurema, Shukla, and Mbera (2015) carried out research in Rwanda to look at how project funding affected the projects' performance. The target population consisted of two groups: project planning and funding personnel, and project implementation management personnel. Data were collected through a custom-designed questionnaire, existing documents, and interviews. Data analysis revealed that both cost estimation and technical design have a negative impact on the scheduled implementation time of projects and also interfere with the funding policy.

Petrus (2020) conducted an examination of the funding and financing of roads infrastructure in Namibia. The research applied a couple of information-collection methods, along with report analysis and secondary facts analysis. To estimate the external costs of road use, the studies hired the toll road development and control (HDM-4) model. This research assessed the relationship among avenue-generated revenue (RGR) and its allocation closer to the expenditure of the national road community, at the same time as additionally comparing those findings to global requirements. The consequences imply that the road Fund management (RFA) demonstrates a excessive stage of transparency in allocating RGR in the direction of the protection of the road network. but, the research found out that financing for road expenditure poses a quandary for lots growing international locations, as sales from street customers does not cowl the overall prices of the roads due to restrained capability and monetary elements.

Tshehla and Mukudu (2020) conducted a study that focused on addressing the constraints associated with effective project finance for infrastructure projects in emerging economies, specifically in Zimbabwe. This study applied a quantitative approach and employed a survey questionnaire to cope with various crucial components

of mission finance from the attitude of creditors. The questionnaire become distributed to participating corporations, consisting of creditors, borrowers, and investors, with a majority of respondents being borrowers. these corporations protected banks in Zimbabwe that provide project finance for infrastructure, pension price range that spend money on infrastructure, multilateral groups operating in Zimbabwe, and municipalities of predominant cities in Zimbabwe. The study recognized a total of 33 elements beneath five attributes that have been deemed essential for having access to task finance: governmental, financing, assignment, special reason car, and politics and economics.

Gichuru (2016) conducted an investigation into the impact of bank loan funding on project performance, focusing on youth group initiatives funded by Kenya commercial banks in Imenti South District, Kenya. Given the nature of the records accumulated and examined, a move-sectional layout turned into chosen as the descriptive approach for this look at. each closed-ended and open-ended questions have been covered in the observer's questionnaires. whereas the open-ended questions allowed respondents to explicit their own critiques on how financial institution mortgage financing affected the success of children agencies' projects and businesses, the closed-ended questions presented a couple of preference solutions. contributors of registered teenagers' groups in Imenti South District that acquire funding from KCB financial institution, bank officials in Imenti South District, employees and management of the Nkubu KCB bank department that serves the Imenti South District, and officials of registered teens groups in Imenti South District made up the study's target population. The statistics accumulated from multiple assets became analysed using each quantitative and qualitative strategies. in line with the study's findings, high financial institution loan interest prices, a loss of required collateral, and inflexible compensation phrases have

an unfavourable effect on credit score availability, which in turn has an adverse impact on how nicely teenagers' organizations' tasks perform.

In the town of Kitale, Mukami's (2021) study looked at how funding operations affected the completion of county-funded construction projects. The research employed a descriptive survey methodology. The targeted sample for this investigation comprised 508 individuals, of which 223 individuals participated in the survey. These participants included beneficiaries of the bus park, stadium, and hospital construction projects, as well as county administrators and project managers. To facilitate the study, housing and urban development managers were requested to complete a semi-structured and self-administered questionnaire. Moreover, an interview guide was employed to collect responses from representatives of the Ministry of Land and Planning. Both quantitative and qualitative analysis techniques were used to examine the data that had been gathered. Both descriptive and inferential analysis were used in the quantitative approach. The quantitative data was presented in tabular form using descriptive techniques like percentages and frequencies. The study's findings, based on the objectives of funding activities, indicated that the funding for construction projects has been delayed due to various factors. These factors include the untimely arrival of the majority of the allocated funds from the national government, inadequate resource management by the responsible managers, insufficient prioritization of worker salaries, unequal consideration given to project construction, and the potential insufficiency of some contractors.

In order to investigate how contractors' financial capabilities affected the efficiency of road construction in Kakamega County, Akali and Sakaja (2018) carried out a study. With a sample size of 135 humans (102 contractors and 33 supervising engineers)

selected using the Yamane (1967) formulation from a population of 203 personnel, the examine used a descriptive survey design. the usage of stratified random sampling, the members have been chosen. Questionnaires and interview schedules had been used to collect information, and thematic analysis become used to assist both descriptive and inferential statistical evaluation later on. The imply and standard deviation had been used in descriptive facts, and the connection between the impartial and structured variables turned into tested the usage of inferential records. The research revealed that the financial capability of contractors had a notable positive influence on the efficiency of road construction in Kakamega County.

2.1.4 Project Risk Management and Performance of Road Projects

Risk management (RM) is a vital component of project management that, if left unmanaged, can lead to catastrophic consequences and serve as a substantial cause of project failure (Loosemore et al., 2015; Olechowski et al., 2016). The comprehensive and systematic nature of risk management has been expounded upon by Sarvani *et al.* (2018), who define it as a process for locating, evaluating, and handling risks in order to meet project goals. Accordingly, Iqbal *et al.* (2015) state that minimizing negative effects through the identification and control of negative occurrences enables risk management to maximize opportunities.

Throughout the project lifecycle, project managers must incorporate risk management strategies, as they have the potential to impact the financial feasibility of the project, leading to an escalation in service costs (Maslova & Sokolov, 2017), as well as overall project performance (Ansary & Renault, 2018). However, research on this subject presents a contrasting perspective. In a study conducted in China, Ke *et al.* (2012)

discovered an absence of a risk management culture. Similarly, Gitau (2015) reported that although 90% of surveyed projects in Rwanda conducted risk identification during the planning stage, 60% of risk management was informal. Furthermore, the study revealed that disaster management significantly influenced project performance.

Various reasons have been put forth by researchers to explain the lack of a risk management culture, including a dearth of knowledgeable experts, resistance from internal and external stakeholders, and challenges in recognizing the benefits of engaging in risk management (Sarvari et al., 2018). The reviewed studies primarily focused on identifying the origins of project risks, with the most frequently reported sources being the political and regulatory environment (Sachs et al., 2007; Ameyaw & Chan, 2013; Likhitruangslip, 2016; Zhang et al., 2019; Wang et al., 2020), force majeure (Aziz & Shen, 2016), as well as opaque, non-standardized processes, and corruption, particularly during the tendering process (Wang et al., 2020; Sachs et al., 2007). However, in addition to identification, risk management entails analysis and response. Identification alone is insufficient. Thus, the current study aims to ascertain the strategies employed by project managers to address risks in road infrastructure.

Sarvari, Valipour, Yahya, Noor, Beer, and Banaitiene (2019) conducted a study on the methodologies for identifying risks in public-private partnership projects, specifically focusing on Malaysian private partners. The researchers collected data over a two-month period by surveying nine Malaysian enterprises involved in PPP projects. The mean scores from the survey were then used to analyse the results. The results indicate that having a comprehensive risk identification database is crucial for the private sector, as Malaysian private partners lack the necessary knowledge and expertise in the risk identification process. Furthermore, the study indicates that PPP projects with a high

degree of complexity might benefit from a combination of risk detection tools. These results can be very helpful to public and private partners in choosing the best tools for risk identification in the early phases of PPP projects.

The impact of risk management on project performance, in terms of time, cost, and quality, cannot be underestimated. Zou *et al.* (2008) suggest that ensuring value for money and safeguarding the interests of the public and end users can be achieved through effective risk identification, assessment, and management practices. Similarly, Gitau (2015) found that implementing risk management during the planning phase significantly improved project performance in Rwanda. In South Africa, Ansary and Renault (2019) discovered that risk management accounted for over 60% of the variations in project performance. Similarly, Al Shibly *et al.* (2013) reported a significant positive impact of risk detection and assessment on project performance.

Due to their large scale, substantial capital expenditure, competitive bidding processes, and long-term nature, PPP projects are associated with a higher risk profile compared to traditional delivery methods (Xu et al., 2014; Chan et al., 2015). Successful PPP projects have been found to be susceptible to political, legal, and social/cultural risk factors (Abdel 2007), highlighting the importance for project managers to invest fully in their management. Furthermore, the literature indicates that developed and developing economies face different challenges in risk management. Sachs *et al.* (2007) conducted a study in China and other Asian countries, revealing that while legal, regulatory, and bureaucratic risks were ranked as the primary concerns in developing economies such as China and Indonesia, this was not the case in mature developed economies like Japan, Singapore, and Korea.

Gain, Mishra and Aithal (2022) investigated risk management practice adopted in Road Construction Project in Nepal. The primary data was gathered using a questionnaire survey with a 5-point Likert scale. Charts and graphs are used to document risk management practices based on survey responses expressed as a percentage. Field visits, key informant interviews, and visual evaluation of the construction process were conducted. Effective analysis was done on secondary data from detail project reports, designs, and drawings. The validity was triangulated and the reliability was measured using Cronbach's alpha. Direct judgment is a generally used approach for risk evaluation of street production tasks at Sindhupalchowk district primarily based on each patron's and contractor's attitude. Monitoring and evaluation reports of similar past projects are the most commonly adopted technique of risk identification. Contractors view risk response strategies as risk monitoring and contingency planning, while clients view risk transfer as their approach.

The identification of risks associated with PPP road projects in Bangladesh was examined by Kalam (2022). The observe makes use of a questionnaire survey of contractors, consultants, and public clients who are concerned within the development of road quarter tasks to pick out and prioritize the dangers related to PPP avenue projects inside the context of Bangladesh. three corporations of respondents—public clients, contractors, and experts—were requested to complete a questionnaire survey on the way to rank the 36 formerly recognized danger factors linked to PPP road tasks in order of importance. in step with the survey consequences, the most important chance aspect for PPP road projects in Bangladesh is land availability. the general public's reputation of toll roads, delays in land acquisition, corruption inside the authorities'

quarter, and inadequate planning for public-private partnerships (PPPs) are the other top risk factors.

The project risk management techniques used in Ghana's construction industry were investigated in the Bransah (2020) study. The study's goals were accomplished through the use of a questionnaire survey for data collection, analysis using SPSS, and a relative importance index. Based on the degree of risk assessment, the following are the most significant risk factors that impact construction projects: inflation, late contract payments, discrepancy between executed and actual quantities, flawed design, and inadequate safety protocols. The study findings show that contractors usually check with previous and ongoing comparable tasks for correct application as the best used method for danger prevention. close supervision of subordinates has additionally been located to be the most used remedial method in addressing hazard factors in production. The consequences however found that Contractors do no longer utilize hazard analysis strategies but motel to the usage of comparison of initiatives for the functions of evaluation.

In the Ethiopian Somali Regional State, Kivrak and Udan (2023) looked into the risk management procedures used in building projects. Professionals in the Somali region's construction industry participated in a questionnaire-based survey. The study's conclusions show that the Somali Regional State has not adequately implemented risk management techniques in its construction projects, mostly as a result of a lack of funding or expertise. The risk factors that have been identified as having the highest likelihood of occurring in construction projects within the Somali Regional State are inexperienced staff, changes in top management, design flaws, and payment delays.

Silungwe, Chiponde, and Michello (2021) examined the mitigation of risks in infrastructure projects within the Zambian construction industry through the utilization of an integrated risk management (IRM) approach. The study obtained secondary data through an extensive review of literature and primary data through a questionnaire survey targeting consultants and contractors. The findings revealed that the management of risks in the Zambian Construction Industry (ZCI) is significantly hindered by the reliance on traditional procurement methods, which result in fragmented and adversarial relationships among teams. Consequently, the traditional approach to risk reduction in projects proves ineffective due to the fragmented nature of the parties involved.

In a study published in 2023, Gathigia and Wairimu examined risk management procedures and effectiveness in infrastructure projects in Kenya's Nakuru County. The study targeted 201 project managers working on infrastructure projects and used a cross-sectional survey design. Using the Yamane sampling technique, 134 project managers made up the sample. Data was gathered by means of questionnaires, with a pilot study conducted among 13 project managers representing 10% of the sample size. The study ensured content and construct validity and assessed reliability using Cronbach's Alpha Coefficient. Descriptive and inferential statistics were analysed using SPSS version 28, and the findings were presented in tabular form. The findings showed a substantial and positive correlation between project performance and risk mitigation, as well as a significant and positive correlation between project performance and risk control.

Obade (2019) investigated the effects of risk management techniques on the cost, schedule, and quality of road infrastructure development projects. With a sample of 75

road construction companies and risk managers chosen from a total of 208 registered road construction companies in Nairobi County, the study used a cross-sectional research design. Stratified sampling was utilized to select 57 local firms, 14 foreign firms, and 4 firms with both local and foreign characteristics. Structured questionnaires were used to interview one risk manager per firm. The data were analysed using descriptive statistics, and the association between variables was examined through cross-tabulation using chi-square tests and linear regressions. The findings indicated that risk avoidance was the most commonly adopted management strategy, and it played a significant role in mitigating all risks. Additionally, the mitigation of risks, exploitation, sharing, and acceptance were significantly associated with the timely completion of road projects within the allocated budget.

Kenya is an emerging economy that is actively focused on implementing PPP projects in order to facilitate the provision of public goods and services, particularly in the realm of road infrastructure. However, according to Sachs *et al.* (2007), construction projects in developing economies are prone to encountering legal and bureaucratic risks, as well as unstandardized and corrupt practices. The majority of the existing literature on project risks has predominantly examined them through the lens of traditional contractual delivery. Moreover, some studies have utilized small sample sizes due to the implementation of a qualitative design (Wang, 2020), thereby limiting their generalizability. Additionally, certain studies have relied on secondary sources of information (Ke et al., 2012), while others have utilized less diverse samples that predominantly reflect the perspectives of specific stakeholders, such as employees (Al Shibly et al., 2013), or internal stakeholders such as owners and project managers (Ansary & Renault, 2019).

The purpose of this study is to look into how risk management affects PPPs when it comes to road infrastructure development projects in Kenya. Given that PPPs are a relatively novel mode of collaboration in Kenya, no previous research addressing this specific topic within the Kenyan context, particularly with regards to project performance, was identified. The assessment of risk management will be conducted by soliciting input from a diverse and well-balanced group of respondents, thus ensuring that the perspectives of various PPP stakeholders are captured.

2.1.5 Stakeholder Participation Mechanism and Performance of Road Projects

Large projects that demand huge capital investment need inclusion and participation of all stakeholders to ensure its success. Franklin (2020) mentions that failure of these large infrastructure development projects can run into billions of dollars and leave a large number of the population lacking from the benefits of the project. The stakeholders' involvement can be in terms of sourcing for funds, project identification and formulation, implementing the project plans, monitoring, evaluating and controlling the project and at the end consuming the benefits from the project (Gao & Zhao, 2020). According to Lawer (2019) who examined the participation of stakeholders in large scale infrastructure projects in Ghana; sharing that stakeholder participation in the projects help in addressing any concerns of a social, cultural and environmental nature. The stakeholders also ensure that their interests and expectations are included in the scope of the project. The study was focused on Tema Port expansion project and revealed that stakeholder participation in the project led to co-creation of values, avoidance of conflicts and promotion of inclusive growth. Furthermore, conducting environmental and social impact assessments by involving local stakeholders in the planning phase did not help to prevent the loss of cultural resources,

but instead resulted in conflicts and court action that delayed the project. Thus, the study recommends for goodwill and faith during the engagement of local stakeholders.

Adhi and Muslim (2023) study focused on development of stakeholder engagement strategies to improve sustainable construction implementation based on lean construction principles in Indonesia. For this study, a questionnaire survey with sixty-one respondents became used. The facts evaluation method uses the certainty Index, RII, Fuzzy AHP, and Fuzzy-TOPSIS. The findings of this research display that there are engagement gaps amongst stakeholders including owners, contractors, consultants, subcontractors, architects, the government, nearby governments, and NGOs. there is no engagement gap among challenge suppliers and traders. the best barrier to enforcing sustainable lean production is a lack of knowledge and talents in using lean equipment and ideas, at the same time as the very best motive force to put in force sustainable lean construction is advanced time efficiency and procedure standardization.

Yousif (2019) investigated how stakeholder management affected the outcomes of public building projects in Northern Iraq. In order to determine how the management of stakeholders influences project performance, a case study was conducted. Furthermore, deductive reasoning was employed to derive arguments from relevant theoretical and empirical insights on stakeholder management. The study's conclusions demonstrated the difficulties faced by the construction industry, the inability to effectively carry out project tasks, and ineffective strategies for acquiring project materials are important elements that impede public construction projects' performance. Furthermore, the outcomes showed that stakeholder management in construction projects is not universally effective and may not be suitable for all types of projects.

Nnadi and Oyama (2023) assessed how stakeholder engagement influences the efficiency of road construction projects in Nigeria. Data were gathered for the study using a mixed research design that included oral interviews, direct observation, and questionnaires. After the data was gathered, it was examined in Eview8 using regression tools and percentages that had been verified by subject-matter experts. According to the study's findings, 40% of respondents strongly agreed that stakeholders' appropriate involvement has a significant impact on how well road construction projects perform, while 39.6% agreed, 10% disagreed, and 10.4% strongly disagreed. The regression analysis revealed an R2 value of 0.154, indicating that approximately 15.4% of road project performance can be attributed to the proper involvement of stakeholders.

Mambwe, Mwanaumo, Nsefu, and Sakala (2020) investigated how stakeholder engagement impacts the performance of construction projects in the Lusaka District. By using analysing, the connections among stakeholder participation and 3 overall performance parameters—project cost, mission agenda, and assignment specs—the observer’s purpose was executed. in this investigation, a quantitative descriptive research design became applied. A semi-dependent questionnaire changed into used to gather number one and secondary facts, with a ninety-eight% reaction price. The study conclusions showed a sizeable and favourable courting between stakeholder participation and each the challenge time table and the undertaking specifications. additionally, the findings showed a tremendous however inverse dating between task price and stakeholder participation.

Assefa, Worke, and Mohammed (2015) conducted a case study in a region in western Ethiopia to analyse the role of participants in the management of a road construction

project. The study findings highlighted poor engagement between external stakeholders and project stakeholders, as well as limited time, budget, and consumer interest at the design stage. One of the most important aspects of project management is the involvement and control of stakeholders. All construction projects share a common characteristic: the presence of stakeholders who play significant roles in the development and completion of these projects.

Mashwama, Mushatu, Thwala, and Aigbavboa (2020) conducted an investigation into the factors that hinder internal stakeholders in road infrastructure projects in South Africa. A quantitative methodology was used in the study, with 100 questionnaires distributed, 76 of which were collected and examined. To collect the data, both primary and secondary sources were used. The study utilized factor analysis and correlation matrix coefficients, specifically concentrating on coefficients greater than 0.3. The researchers also performed Barlett's and Kaiser-Meyer-Olkim (KMO) tests. The findings revealed several factors that impede the progress of road infrastructure projects, including delayed payment to service providers, lack of verification of contractor qualifications, inadequate client knowledge regarding design documentation review, insufficient involvement during the construction phase, and a limited understanding of project feasibility. Stakeholder participation is essential as it encourages the sharing of knowledge with regulatory authorities, facilitates well-informed decision-making, and reduces the likelihood of project failure.

Ansong (2021) examined the impact of stakeholder influence on project success using Asanko Gold Ghana Limited as a case study. Respondents were given closed-ended questionnaires to complete in order to collect the primary data for this study. The generated data was analysed using the mean score ranking method, and the data was

tested using descriptive statistics. According to the study's findings, communities that are directly impacted by mining operations are important stakeholders who greatly influence the success of projects. Furthermore, the study identified interest as a key influential variable among stakeholders, particularly in relation to the Tailings Storage Facility (TSF) Project.

Wamugu and Ogollah (2017) emphasized the aim of constituency development fund (CDF) projects in their study on the impact of stakeholder involvement. The primary objective of these projects is to tackle poverty at the local level. The researchers noted that many CDF projects face challenges such as delays, abandonment, or being classified as ghost projects. To address these issues, stakeholder participation and engagement are essential. In order to improve project performance, stakeholders are involved at different stages of the project, such as initiation, implementation, monitoring, and control. Efficient use of funds, timely completion, and high-quality output are the metrics used to evaluate performance. To gather quantitative and qualitative data from the Mathira East constituency, the study used a descriptive research design and a questionnaire. The results demonstrated that active participation and engagement of stakeholders in the implementation, monitoring, and control stages led to improved performance of CDF projects.

Effective stakeholder participation entails the elimination of bottlenecks within organizations that encompass elements such as information asymmetry, transparency, ambiguity concerning stakeholders' roles and contributions, as well as a weak legal framework and organizational structure that support stakeholder involvement (Gao, Zhao, 2020). In analysing the impact of stakeholder participation on public project performance in Rwanda, Bazimya (2018) highlights the importance of stakeholders.

The research carried out a case analysis of WASH projects in the Musanze district, examining the ways in which community involvement in the phases of identification, planning, and implementation affected the projects' success rate. The respondents were chosen randomly from three donors (the Rwandan government, the Dutch government, and UNICEF), as well as the local population who served as project beneficiaries. The data collected through questionnaires was analysed and indicated that the respondents acknowledged the contribution of stakeholder participation in the identification, planning, and implementation stages to the success of the project. The study concluded that involving participants in all project phases enhances project performance.

Musau (2019) conducted research on community engagement and accountability initiatives in development projects. The researcher observed that social interaction provides the public with an opportunity to express their opinions and offer suggestions regarding the project. This valuable input can be utilized in the formulation of policies and structures that facilitate public-government engagement. Simultaneously, public participation across all aspects of the project enhances accountability, transparency, and responsiveness in the utilization of project resources. The study focused on the Kitui County Government and examined the agencies established to decentralize service provision and promote public engagement and accountability. Adopting stakeholder participation mechanisms serves as a means to address challenges encountered by the project, such as limited funding sources, accountability issues, and inadequate public engagement. The study revealed that numerous reports from the auditor general, commission of revenue allocation, and controller of budgets highlighted that many county government projects were characterized by being incomplete, underutilized, poorly implemented, and overpriced. Consequently, it is imperative to incorporate

stakeholder participation mechanisms to enhance project performance. The researcher identified a low level of public participation in government-funded projects, with only 39% of the public actively engaging. Additionally, difficulties in accounting for project resources resulted in many projects being labelled as 'white elephants,' further contributing to poor project performance.

A study by Kalu and Rugami (2020) examined the effect of stakeholder involvement on the performance of Kenya Ports Authority infrastructure projects. The study employed a descriptive survey research design. 358 persons made up the sample for this stratified sampling study. A structured questionnaire consisting of closed-ended questions was the main tool used to collect data. The significance of the links and relationships between independent and dependent variables was evaluated through the utilization of multiple regression analysis. According to this study, stakeholder empowerment increases stakeholders' self-assurance and decision-making capacity.

The 2020 study by Githinji, Ogolla, and Kitheka examined how stakeholder participation affected Kenya Ferry Services projects' outcomes. The descriptive research methodology process entailed selecting a sample of 70 participants from the target population of 231 stakeholders who are partners of the Kenyan ferry service. After a pilot study, information was gathered through questionnaires, and the SPSS software was used to perform a straightforward linear regression analysis. The results of the study showed that project performance was significantly and favourably correlated with stakeholders' involvement in project identification.

Nyabera (2015) investigated how stakeholder involvement affected project outcomes in Kenya through a case study of projects supported by Compassion International in the

Mwingi sub-county. A descriptive research design was used for this investigation. Furthermore, the research utilized a combination of qualitative and quantitative methodologies. The target population for four programs supported by Compassion was 391 stakeholders. To conduct the research, a questionnaire and an interview manual were applied. The have a look at located that during tasks in which stakeholders have been represented in the undertaking governance shape, stakeholder participation on the outset considerably affected venture overall performance.

In Siaya County, Kenya, Beldinne and Gachengo (2022) looked into how stakeholders managed their resources and how well road construction projects performed. Stakeholder theory served as the study's foundation, and the explanatory research design was employed. Four Siaya County road construction projects were the target population. Representatives from Siaya county government, contractors, and officials from Kenya Urban Roads Authority (KURA) made up the respondents. Every urban road construction project was counted in a census. Data collection was conducted through a questionnaire, with both descriptive and inferential statistics utilized for data analysis. The results revealed that the resource management practices implemented by stakeholders had a notable and beneficial impact on road construction projects. The study highlighted that the effectiveness of road construction initiatives in Siaya County is heavily influenced by the resource management decisions made by stakeholders.

2.1.6 Legal framework and the performance of road Infrastructure Development Projects

According to Kim *et al.* (2011), it is imperative for governments to establish a clear vision and strategy for public-private partnerships (PPPs). The researchers argue that governments should address several key questions, including the specific objectives

and sectors targeted by the PPPs, the types of PPP arrangements being considered, and the authority responsible for approving PPP projects. Furthermore, governments should outline the process for implementing PPP projects, ensuring that start-up agencies understand how to bid for projects. To ensure fairness, transparency, and competition, guidelines should be developed for a bidding process. Additionally, mechanisms for dispute resolution should be established to handle disagreements within long-term PPP contracts between public and private partners. It is crucial to remember that the results of the research done in Korea cannot be applied to other countries.

According to the World Bank (2017), governments must have appropriate frameworks and capabilities in place to identify projects that are best suited to be implemented through PPPs. These frameworks should facilitate transparent and efficient procurement processes, as well as effective contract management and regulation to ensure that performance indicators are met and value for money is achieved. Public-private partnerships are varied, and no two projects are alike, according to Williams (2003). Accordingly, the method used in the planning, designing, and evaluation to select the optimal choice is crucial in deciding on the kind of contract and model to be used (Ojebode, 2016). Therefore, when developing a PPP process and choosing a type of PPP, it's critical to take into account the goals of the reform, the policy environment, the institutional, legal, and regulatory frameworks, the sector's financing needs and available resources, as well as political limitations and stakeholder concerns (ADB, 2008). The government sets the extent of private sector involvement, which is impacted by the project's goals and objectives, the level of control it needs, and the PPP consortium's capacity to deliver the required service (Ojebode, 2016). As a result, PPPs

can take many different shapes, with the degree of private sector involvement varying greatly. This figure (Figure 1.3) shows the variety of PPP agreements.

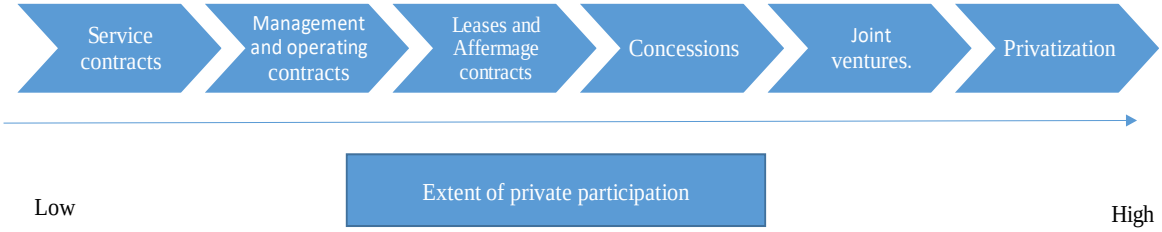

Figure 2.1: Types of PPP Contracts

Source: (European Commission, 2003)

A service contract is an agreement whereby a private company or entity is hired by the government (public authority) to perform one or more specified tasks or services for a set period of time, usually one to three years (ADB, 2008). Furthermore, according to Ojebode (2016), the public sector continues to be the main supplier of infrastructure services and only outsources a portion of its operations, such as rent collection, toll collection, and vehicle or other technical system maintenance, to the private sector. These contracts, according to Bennett, Grohmann, and Gentry (1999), mandate that the public sector provide the service at the agreed-upon cost and usually in accordance with performance benchmarks established by the public sector. Governments typically award service contracts through competitive bidding processes, which are generally effective given the short duration and strictly defined nature of these contracts (ADB, 2008). According to Turina & Pusic (2006), in a service contract, the government pays the private partner a fixed price in exchange for the service's delivery. This price is typically calculated using a lump sum payment, unit cost, or some other formula. As a result, the profit margin for the private sector partner rises in proportion to its capacity

to maximize and minimize operating expenses while upholding the public entity's service standards. An additional financing option is based on a cost-plus-fee formula, in which the private partner shares profits and labor costs are fixed (ADB, 2008). According to Jayasena, Chan, and Kumaraswamy (2021), in a service contract, the public sector organization is in charge of making the capital expenditures necessary to develop and/or enhance the project, and the private sector partner typically does not communicate with the users.

Service agreements work best when there is a clear definition of the service, a reasonably predictable level of demand, and easy performance monitoring (ADB, 2008). According to Turina & Pusic (2006), service contracts offer a comparatively low-risk way to increase the private sector's involvement while also having the potential to improve system performance and efficiency. According to ADB (2008), service contracts have several advantages, such as offering a means of technology transfer, fostering the growth of managerial skills, and enabling recurring competition in the industry due to their short duration. Considering that only a specific service is up for bid, it was also observed that the entry barriers are low. Ojebode (2016) noted that service contracts are inappropriate if luring capital investment is the primary goal, even though they might increase productivity and free up limited resources for other uses. In fact, if alternative funding sources (government or donors, for example) do not materialize, the contractor's effectiveness might be jeopardized (ADB, 2008). According to Turina & Pusic (2006), since the private sector entity's operations are distinct and isolated from its larger operations, there might not be a deeper or more extensive influence on the system operations, leading to only limited and distinct improvements. Setting tariffs and allocating resources, which are both politically

delicate and necessary to maintain the system, are still under the purview of the public sector (ADB, 2008).

Management contracts are also a form of PPP contracts where the management and operation of the public service (such as a port authority, hospital, utility, etc.) is now included in the expanded scope of services that can be contracted out under a management contract (ADB, 2008). Private partners or contractors are given daily management control and authority, even though the public sector still has the ultimate responsibility for providing services (ADB, 2008). As a result, the private partner does not offer financing for investments and instead supplies working capital to meet operational demands. According to Ojebode (2016), under these kinds of agreements, the labour and other operational and administrative costs are covered by the private sector contractor at a predetermined rate. Additionally, and in order to incentivize the contractor to improve performance, they receive a mark-up similar to profits that is contingent upon meeting predetermined, results-based targets. As an alternative, the management and operating contracts do occasionally allow the private sector contractor to receive payment as a percentage of profits, as mentioned by Turina & Pusic (2006). Major capital investments, especially those pertaining to system expansion or significant improvement, are still the responsibility of the public sector (ADB, 2008). Specific activities to be funded by the private sector may be specified in the contract. Tariffs are set by the public sector, while the private partner deals with the customers. However, a management contract will usually modernize an organization's financial and management systems, allowing decisions about priorities and service levels to be made more commercially (Ojebode, 2016). The main benefit of management contracts, according to ADB (2008), is that many operational profits from personal sector

management may be made without moving property to the private zone, and the contracts are less complicated to broaden and less contentious than others. Ojebode (2016) claims that because the private operator is assigning fewer employees to the project, the contracts are also relatively inexpensive. The researcher also pointed out that management contracts can be viewed as a temporary procedure that permits the development of building blocks and incremental enhancements over time as more extensive contracts and structures are created. Additionally, Turina & Pusic (2006) pointed out that management contracts can be set up to gradually involve the private sector more and more as project viability is established. Therefore, there is a trade-off between the need for financing and expansion planning on the one hand, and the obligation for management and service on the other. According to Turina & Pusic (2006), the main risk is that the management contractor won't have the freedom or power (over the workforce, for example) needed to bring about significant and long-lasting change. The researchers also pointed out that safeguards will be needed to address issues with the hype surrounding reported accomplishments and the impact of subpar system maintenance, which could have an impact on the anticipated profits, if the operator receives a cut of profits or an incentive payment.

Lease and affermage contracts are another option in the PPP contracting models. According to the World Bank (2015), leases and affermage contracts are typically public-private sector agreements wherein the private operator's role is restricted to utility operation and maintenance and they are not accountable for financing the investment. According to Ojebode (2016), in a lease agreement, the private partner is in charge of all utility-related services and bears responsibility for upholding predetermined standards of quality and service. The operator offers the service at his

own cost and risk, with the exception of new and replacement investments, which are still the public authority's responsibility (ADB, 2008). Usually lasting ten years, the lease can be extended for an additional twenty years. Transferring responsibility for service delivery from the public to the private sectors occurs, with the private sector operator bearing all operational and maintenance costs (ADB, 2008). According to Jayasena and Kumaraswamy (2021), there is no transfer of ownership of public assets to the private sector as a result of the private sector entity operating as the operator. Instead, the private sector entity bears responsibility for any operational losses as well as any resulting debts from customers. ADB (2008) noted that under this arrangement, the public sector authority finances the system's initial establishment and contracts a private sector company to handle operation and maintenance. A portion of the tariff proceeds are then given to the public authority to pay off any debts or loans taken out to finance the project's extensions. Jayasena and Kumaraswamy (2021) state that an affermage and a lease contract are comparable, but not the same. Researchers further noted that an affermage arrangement involves the private sector in the collection of revenue generated, facilitates payments of the affermage fee to the relevant contracting authority, and retains the surplus as profits on the arrangement, in contrast to a hire in which the non-public sector keeps sales amassed from clients and makes detailed rent payments to the contracting authority. since the affermage rate is usually an agreed rate consistent with unit offered, the personal companion can also find the affermage extra attractive as it lowers some of the dangers associated with low-cost restoration in income (Ojebode, 2016). The private partner's earnings under lease and affermage contracts are based on the sales and expenses of the utility (ADB, 2008). The European Commission (2003) states that the primary advantage of this selection is that it incentivizes the personal quarter entity to obtain better ranges of performance and sales.

but, the primary disadvantage is the opportunity that management will lessen the level of maintenance on lengthy-term belongings, mainly in publish-agreement durations, in an effort to increase profit margins. Additionally, even though the private partner does not supply investment capital, they do provide a fee to cover the cost of using the assets (Ojebode, 2016). The main problem with switching from service and management contracts to a lease, according to Jayasena and Kumaraswamy (2021), is that the private entity's (contractors') income is primarily derived from payments made by end users. This presents the delicate issue of what tariff levels should be charged and how this will affect end users. The researchers added that this might necessitate complex tariff arrangements that are challenging to comprehend and/or implement, as well as restructuring. Ojebode (2016) also pointed out that the government is still in charge of capital investment and that no private capital is being raised, which could cast doubt on the main justification for the shift to such arrangements that is, lower budgetary outlays.

Joint ventures are another option in the PPP contacting models. According to the World Bank (2015), a joint venture (JV) is typically a formal contractual arrangement in which two or more entities cooperate to control one another's economic activities. Joint ventures can also be described as collaborations between the public and private sectors that pool their resources, money, and expertise under shared management in order to create long-term value growth for both (Ojebode, 2016). Trafford and Proctor (2006) stated that the private sector generally owns stock in public entities that are already in existence, occasionally by forming a special purpose vehicle company to hold the utility's assets under a joint ownership structure. The researchers also observed that when a project is funded, the project company is typically founded with a limited scope of joint share ownership, with the primary focus being on completing the project and

having little room for diversification. According to Bennett, Grohmann, and Gentry (1999), large capital projects create joint ventures with the express intent of developing projects in their early stages and based on equity. Trafford and Proctor (2006) also pointed out that in many situations where the government is a shareholder and receives a portion of the final profits, it must both provide regulation and guarantee that the project's goals are broadly accepted politically. Ojebode (2016) also pointed out that, despite their different roles, the public and private sector partners must collaborate effectively from the start since the private sector partner is frequently in charge of carrying out day-to-day management operations. Thus, the manner in which each party fulfils their obligations as a supplier, collaborator, or regulator will rely on the requirements, limitations, and capabilities of the government (Bennett et al., 2000).

Privatization is another contracting model under PPPs. According to the World Bank (2015), privatization is a partial or full process that entails selling shares or assets of a state-owned company to the private sector. According to the OECD (2009), privatization also can be defined as any huge transaction that reduces the shopping entity's remaining possession of company entities. This includes direct government divestiture of corporate assets through investment vehicles under government control as well as the dilution of state positions in projects and/or state-owned enterprises through the facilitation of secondary share offerings to non-state shareholders. Ojebode (2016) also pointed out that privatization is a special purpose vehicle used to shift state ownership of assets and utilities to entities led by the private sector. OECD (2009) noted that privatization is typically not defined as the transfer of some commercial activities from state-owned entities to private entities through leasing, concessions, delegated management contracts, or other public-private partnerships. Based on the idea of

divesting from state-incorporated entities, the researchers also pointed out that the dilution of government control over state corporations through procedures like share transfers, open sales of shares, or amendments to the articles of association is not regarded as privatization. In conclusion, the transfer of assets to the private sector—as opposed to the transfer of activities—is what is meant by the term "privatization." This distinction is particularly significant because the infrastructure and public utility sectors, which also have a high proportion of public-private partnerships, are seeing an increase in privatizations which could be considered close substitutes for asset selloffs in certain situations (World Bank, 2015). Ojebode (2016) also mentioned the additional idea of partial privatization, in which the government keeps ownership of a specific percentage of the assets of the former state-owned enterprises. He pointed out that this is seen as a more alluring option for governments or other authorities that want to keep some degree of control over the asset management. In these situations, the public and private sectors collaborate on the assignment and interaction of roles and responsibilities. The distribution of assets and the sharing of expenses determine the specific agreements for delegating management and investment decisions to each other (Ojebode, 2016). Consequently, they would have to be determined case by case, despite the fact that the government usually transfers as much of its costs as possible to the private sector (World Bank, 2015). Anecdotal evidence indicates that attracting private investment and enhancing management and operational effectiveness are two major benefits of privatization for the public sector while safeguarding the interests of the general public and important national assets (European Commission, 2003).

Concessions are also considered a contracting model under PPP. A concession is typically defined as a system wherein a public authority gives a particular organization

the authority to build, renovate, maintain, and run an infrastructure for a predetermined amount of time. This is analogous to a contract wherein a public authority requires a business to make the necessary investments to develop the service at its own expense and run the service at its own risk. The public authority or service users pay a fee to the company in exchange for compensation (Bousquet and Fayard, 2001). Concessions are awarded through competitive bidding and frequently last for 25 to 30 years, or even longer (Akintoye *et al*., 2003). A concession approach means that all assets, new and old, remain the property of the public sector, which also bears the responsibility of ensuring that they are used and maintained properly during the concession period and returned in good condition at its end (European Commission, 2003). An infrastructure concession, according to Bousquet and Fayard (2001), includes the following modifications: a contract whereby a public sector organization gives a private sector organization the exclusive right to construct, manage, and/or run a public utility for a set amount of time. Before the formalized PPP model that is in use today, concessions were accepted as a concept and a method of carrying out infrastructure projects. According to Guislain (1995), concessions have been used since at least the Middle Ages. They are used not only to assign temporary monopolies to certain private sector entities in order to encourage investment in commercial ventures, but also as a means of using the private sector to provide public assets and services. The researcher pointed out that the extent of concessions made to French bakers and butchers as well as to the East India Company which was founded in 1600 and utilized by the British government to expand its economic clout and influence from India to the Far East formally acknowledged this. According to (UNESCAP), 2008, concessions assign full responsibility for the provision of services in a given area to the private sector operator (concessionaire), including management, operation, maintenance, collection, and

construction of the infrastructure system in question. Setting performance requirements and making sure the concessionaire complies with them are the responsibilities of the public sector. Rather than only offering services, the public sector now also has to regulate prices and service quality (World Bank, 2011). In addition, the public sector maintains ownership of all assets—both new and old—under a concession model. Additionally, it is in charge of making sure that the infrastructure assets are used and maintained efficiently throughout the concession and are properly returned to the public sector at the end of it (European Commission, 2003). The public sector organization typically provides the capital as specified for the particular project, which can take the form of a full capital investment or a subsidy (viability gap financing). In order to achieve the best possible project viability, there is also the option to adopt a tariff structure in which the public sector entity receives compensation based on the assessed contribution provided. Concession agreements that have been established specify the applicable tariff and account for any modifications that may occur during the concession's duration. Rarely, the government may decide to offer backup funding to make sure the concessionaire can recoup its capital expenditures by the contract's expiration (Bennett, Grohmann & Gentry, 1999). According to Levy (1996), the Build Operate Transfer (BOT) approach entails assembling private sponsors via a group of private businesses to fund, plan, run, and preserve vital infrastructure assets for a predetermined amount of time. Levy (1996) also pointed out that there are various variations of the BOT model depending on particular assets. These variations include Build Own Operate (BOO), which eliminates the need for a transfer, and Build Transfer Operate (BTO), which relieves the financing consortium of the expensive insurance that the project requires for facility operation; Build Rent Transfer (BRT); Build Own Operate Subsidize Transfer (BOOST); and Design Build Finance Operate (DBFO)

where the government retains title to the land and lease it to the private sector consortium for the life of the concessionary agreement. In a BOT project, a facility or system that would normally be developed and operated by the public sector is given to the private sector the right to use and develop it for a predetermined amount of time (World Bank, 2015). According to Vaughan and Pollard (1984), this method has been regularly applied to major infrastructure projects, such as those involving roads, bridges, airports, schools, ports, and water systems. In this arrangement, the major players will usually be those with input supply and offtake purchase capabilities, as well as those with construction and/or operation experience (Ojebode, 2016). Considering the particular risks connected to these BOT project components, one of the key success factors in the BOT approach is the inclusion of shareholders with experience in managing the right kind of projects, such as collaborating with diverse and multicultural partners (World Bank, 2015). Ojebode (2016) noted that the fundamental elements of the BOT approach are a project that can be funded, the public sector organization also known as the host government, the private sponsors or consortium, the local partners—also known as key stakeholders and seasoned professionals—and the private sponsors or consortium. Complex contracts that specify precise mandates, roles, and responsibilities for each of the fundamental characteristics and among the various parties in the approach typically govern the parties' interactions. Levy (1996) identified several major benefits of the BOT approach, one of which is that it gives the host government a way to build vital infrastructure at little or no expense to the tax payers. According to Ojebode (2016), the BOT approach to risk management transfers risk from public sector entities to the private sector, safeguarding the nation's overall risk position. While considering the BOT approach in contrast to other conventional strategies, the satisfactory and performance of the development of

infrastructure property are distinguishably better (World Bank, 2015). The contractor's complete expertise of the project's design and materials permits it to expand a customized preservation plan that anticipates and addresses wishes as they emerge, decreasing the possibility that issues will cross not noted or overlooked and subsequently worsen into plenty extra high-priced problems (European Commission, 2003). According to Vaughan and Pollard (1984), the main drawback of the BOT approach is that projects developed using it typically have higher costs of use because private sector organizations assume project risks and finance project development. As a result, the end users bear the risks and return decisions.

The Critical Success Factors (CSFs) of an Australian stadium project that was carried out using the Build Operate Own Transfer (BOOT) mode of PPP were studied by Jefferies *et al.* (2002). The researchers discovered that a major factor in the Super Dome project's success was effective management of the bidding process by the government, a streamlined and clear negotiation process, and well-documented and managed project agreements.

When engaging in PPP contracts, governments should prioritize the timely procurement of goods and the delivery of services that meet pre-agreed quality standards and service requirements throughout the duration of the contract (Abdul-Rashid *et al*., 2006). However, it is crucial for governments to refrain from imposing unreasonable restrictions on private sector participants and to avoid micromanaging the implementation of these goals (Corbett and Smith, 2006). As suggested by El-Gohary *et al.* (2006), the government should delegate responsibilities for industry and service management to the private sector, while also maintaining flexibility to adopt new products and technologies. The government should also provide support and incentives

to the private sector when appropriate. However, in the event of failure, the government should continue to regulate and be prepared to intervene and reallocate resources if necessary (Zhang, 2005).

Kim *et al.* (2011) conducted a study on the institutional arrangements and implementation of infrastructure projects through Public-Private Partnerships (PPPs) in Korea. The researchers emphasized the importance of a transparent and effective procurement process in order to reduce transaction costs and minimize the time spent on contract negotiations. They also highlighted the significance of a clear project outline and understanding of client needs to facilitate the bidding process. Furthermore, the researchers suggested that competitive bidding based on price would not only safeguard the interests of a strong private consortium but also ensure the prudent utilization of public funds. Consequently, the government should seek a suitable long-term partner to achieve these objectives.

In his study on the legal and institutional frameworks in Kenya, Nalo (2018) observed that PPPs in the country are regulated by the PPP Act of 2014 and the accompanying PPP Regulations of 2014. The researcher pointed out that the PPP Act, being a law under Chapter 12 of the Constitution, carries significant fiduciary obligations for PPP institutions. These obligations are aimed at upholding the principles enshrined in Articles 10, 201, and 227 of the Constitution, which emphasize national loyalty, accountability, financial soundness, transparency, competitiveness, cost-effectiveness, and equal opportunity in public procurement.

Ndumia (2020) investigated how Nairobi County, Kenya's regulatory framework affected building construction projects' performance. A sample of 19 licensed quantity

surveyors, 28 licensed architects, and 132 licensed building contractors operating in Nairobi were used in the study, which used a descriptive survey research design. The results showed that professionals with training and licencing in building planning and design, such as architects and quantity surveyors, are essential in providing clients with advice and comprehending their needs. The study also showed how Nairobi County has integrated digital systems for managing development applications into its statutory and regulatory framework, incorporating stakeholders and the general public in the process of formulating policy. It was also observed that in order to mitigate the negative effects of building construction projects, the National Environmental Management Authority (NEMA) effectively implements environmental policies and suggests mitigation measures. In addition, the National Construction Authority (NCA) issues a code of conduct for the building construction sector on a regular basis and registers and certifies constructors.

Mwelu, Davis, and Watundu (2020) conducted a study to investigate the mediating role of compliance within the regulatory framework for road construction in Uganda. The research design employed in this study was cross-sectional, and structured questionnaires were meticulously developed and utilized. The findings revealed that compliance with the public procurement regulatory framework significantly influences familiarity with the framework, monitoring efforts, staff sanctions, contractors' resistance to non-compliance, and the success of public road construction projects. However, it was observed that compliance does not impact the relationship between staff professionalism and perceived inefficiencies in the success of public road construction projects.

The PPP Act of 2013 establishes the institutional framework for the implementation of an effective legal and regulatory structure. Section 7 of the Act establishes a PPP Committee, aided by the secretariat (PPPU), and is responsible for the development and execution of PPP policy plans, support of the PPP agenda, ensuring compliance with the 2013 PPP Act, authorization or commendation of PPP projects in Cabinet, ensuring the effective implementation of PPP agreements, and ensuring alignment of PPPs with national priorities. Additionally, the Committee is responsible for approving the allocation of the Project Facilitation Fund and publishing PPP standards, guidelines, procedures, and bid documents. Section 67 of the PPP Act of 2013 establishes the PPP court to address all complaints and grievances raised by an independent party during the tendering and signing of a PPP project agreement. The PPP unit within the National Treasury, acting as the resource centre and custodian of the PPP process, plays a crucial role in identifying issues and providing recommendations to the PPP Committee on potential solutions. Furthermore, it is tasked with assisting each Contracting Authority in identifying, selecting, evaluating, procuring, approving, negotiating, and monitoring PPP projects throughout their entire life cycle. The PPP Unit is also assigned with enhancing the capacity and skills of the public sector, as well as improving the management of PPP projects.

In order to investigate how environmental regulations, affect the performance of construction projects in Nairobi County, Kenya, Gichamba and Kithinji (2019) carried out a study. The present study utilised a correlational research design. The 824 registered construction firms in Nairobi County that are in charge of managing construction projects made up the target population. In the research, a stratified random sampling method was utilized to choose 269 construction firm owners from the

specified population. The study incorporated both primary and secondary data. Primary data was collected through semi-structured questionnaires. Quantitative data collected was analysed using both inferential and descriptive statistics. Correlation analysis was conducted to establish the relationship between the dependent and independent variables. The study's conclusions showed that Nairobi County's building projects perform significantly worse when water regulations are in place. Additionally, the study found that Nairobi County construction project performance is significantly impacted by waste management regulations.

Pedo, Kabare, and Makori (2018) conducted a study to assess the performance of Kenya's public-private road projects in relation to the regulatory framework. The research employed both exploratory and descriptive research designs to investigate the issue. The study's population consisted of 111 organizations involved in the road sector PPPs, including regulators, project implementers, financiers, and interest groups engaged in the PPP Project process. Since the population was heterogeneous, a complete census was necessary for the study. Data collection was carried out using a semi-structured, self-administered questionnaire. To ensure the questionnaire's validity and reliability, a pre-test was conducted. The data was analysed using a suitable model that was developed as a function of both the independent and dependent variables to measure their relationship. Descriptive statistics provided a summary of the data, allowing for a better understanding of the variables and their relationships. Inferential statistics allowed for generalizations to be made beyond the sample, providing insights into the larger population. Descriptive statistics helped in summarizing and organizing the data, while inferential statistics allowed for the formulation of recommendations and inferences based on the findings. The findings of the study revealed that the

regulatory framework had a significant and positive impact on the performance of public-private partnerships in road projects in Kenya.

The PPP Act of 2013 defines Contracting Authorities (CA) as entities such as government departments, regional governments, and legal entities. Their primary PPP duties include project identification, development, procurement, operation, and monitoring. In order to fulfill their responsibilities, purchasing companies need to prepare bid documents, conduct feasibility studies, and obtain the required authorization. Parts 16 and 17 of the PPP Act, 2013 mandate that every CA starting a PPP project set up a PPP Node manned by officers qualified to oversee a PPP project on a daily basis. The Contracting Authorities may need to appoint Contract Advisors (TA) to help them with project development because they do not currently have the necessary internal expertise in PPPs. Additionally, this unit can help CAs identify and develop important PPP projects. Respondents will be selected from across the legal and administrative requirements, and the research methodology for this study has been focused on the different administrative levels produced by the current legal environment based on studies conducted on the legal and administrative impact.

2.2 Theoretical Framework

2.2.1 Policy Network Theory

Due to the process of globalization, the influx of investments in Europe and other regions, and the promotion of economic freedom, the concept of public policy network theory has gained significant prominence in the field of international political development for over a decade, starting from 1990. The aim of this theory is to provide

an explanation and forecast of policy outcomes by analysing the interactions within policy networks (Peterson, 2003).

A ground breaking contribution in the field of governance was made by Andersen and Eliassen (2001), who introduced novel and distinctive forms of governance that emphasized the continuous horizontal sharing of power. As a result, policy network approaches have become increasingly prevalent in policy-related documents, reflecting the aspiration for increased visibility and influence (Peterson, 2003). The analysis of policy networks is based on three fundamental assumptions. Firstly, it is recognized that the contemporary model of governance often lacks consistency within specific sectors, with only a limited number of policy solutions being imposed by the government. Consequently, governance necessitates interaction and interdependence between government and non-governmental actors, as well as between various types of public actors at both the national and sub-national levels. Secondly, understanding the policy process requires a comprehensive examination of the relationships between different interest groups and the government, as these relationships can vary across different policy areas (Rhodes, 1997: 32). This implies that the notion of a "strong state" or a "business world," let alone a "strong" or "weak" international organization, lacks validity since the influence of regions and international organizations differs significantly depending on the specific policy area (Rhodes, 1997). Lastly, the third theory posits that while governments bear the responsibility of governance, policy choices and decisions on how to implement various actions are refined through negotiations among a diverse array of actors. Peterson (2003) highlights that the wide range of state and non-state actors, as well as the private sector, all possess interests in shaping policy direction and implementation, thus playing a crucial role in determining

the chosen course of action. Consequently, policy networking can facilitate the exploration of alternative options and the reordering of priorities by employing strategies that generate new political and economic power. Furthermore, policy networking can sometimes serve as a pivotal force in shaping the political landscape, as it influences the balance of power between different political interests, organizational structures, and economic objectives (Thatcher, 1998).

Thatcher (1998) added that the policy network theory has proven useful in the European Union in understanding specific policy outcomes in certain sectors with pure technocratic rationality. It also aids in determining policy outcomes. The policy network theory also reflects the additional concept of stakeholder management which is commonly attributed to Freeman (1984) and it serves as a means to address the values and ethics that pertain to the management of an organization. Stakeholder management identifies a specific group of individuals who are recognized as stakeholders and exert an influence on the manner in which a particular activity is carried out. Traditionally, the perspectives of stakeholders have been viewed as influential factors that contribute to a comprehensive understanding of the firm and its operations within its surrounding environment. The stakeholder management concept elucidates the impact of considering partners in the administrative process (Jones, Wicks & Freeman, 2017). This is accomplished by examining the success of our partners and their actions in achieving the organization's policies. Of particular concern is how managers ought to express themselves while performing their duties. According to Freeman, shareholders are groups that are essential for the survival of an organization. These groups must be identified and categorized in order to determine the interests of stakeholders. The list includes stakeholders such as employees, shareholders, suppliers, and the local

community. This classification was also presented by the proponents of the policy network theory. However, this has also been criticized for its failure to provide guidance and enhance governance in the various areas of accountability, instead involving shareholders in their affairs. The perspectives of stakeholders aim to broaden the management's vision of the firm beyond the mere pursuit of maximizing profits (Govan & Damnjanovic, 2016). According to Patton (2008), the stakeholder views indicate that individuals or groups who have legitimate interests in engaging with organizations do so in order to derive certain benefits. Overall, stakeholder management assists the management of an organization in understanding its legitimate stakeholders and ensuring that they are strategically managed for the success of the enterprise. The involvement of stakeholders in the firm's activities has been linked to the long-term performance and survival of the enterprise (McManus, 2004). The stakeholder management approach in the public network theory will be employed to examine the impact of stakeholder management on the performance of road infrastructure development projects.

The public network theory also makes reference to the public risk management theory. Fone and Young (2005) introduced the notion of 'organizational' and 'social risk' and made note of the fact that the theory of risk management primarily focuses on the organizational perspective of risk management. Spikin (2013) further elaborated on this concept by offering a perspective specific to the public sector and devised a framework consisting of four dimensions of risk management within public sector entities. As per Spikin (2013), the first dimension pertains to the political aspect within civil society, wherein various threats and demands necessitate risk management. This dimension involves the relationship between elected officials and citizens, with the potential to

deviate from the overall objectives of the government and legal sector. The second dimension entails the significant risks faced by organizations, implying that civil society organizations must engage in a purposeful and goal-oriented process. The third dimension focuses on strategic risks, particularly those associated with budget performance and medium-term decision-making. Lastly, the fourth dimension centres around operational performance risks, which encompass day-to-day operations, short-term planning and implementation, and work performance. The performance of road infrastructure development projects and the variable of risk management in public-private partnership projects are both studied using the public network theory as a basis.

The public network theory does offer a crucial anchor to understand performance in Kenya given the adoption of the PPP mechanism and the structures that define the players. It does this by identifying the degree of interaction that influences project identification, project financing, project risk management mechanisms, and stakeholder participation in PPP projects related to road infrastructure in Kenya.

One of the strengths of Policy Network Theory is its ability to explain the real-world governance environment of PPP road projects, where multiple stakeholders such as the National Treasury, the PPP Unit, KeNHA, county governments, private financiers, contractors, and communities must coordinate to deliver complex infrastructure. The theory recognises that performance in such projects depends heavily on the quality of these interactions, the flow of information, and the alignment of incentives. However, the theory has notable weaknesses. It is often criticised for being largely descriptive, lacking strong predictive power, and underestimating formal hierarchies in bureaucratic systems, especially in developing countries where institutional rigidity, political interference, and patronage networks remain influential. Scholars further critique the

theory for insufficient attention to power imbalances within networks, where dominant actors, political elites or powerful private firms may skew outcomes in ways that do not reflect genuine collaboration.

Despite these limitations, Policy Network Theory is highly relevant to this study. PPP projects in Kenya's road sector operate within a dense network of actors, each with competing interests, resource endowments, and institutional mandates. Understanding how these actors interact provides valuable insight into the mechanisms affecting project identification, financing decisions, risk allocation, and stakeholder participation—all of which are central to PPP performance.

2.2.2 Theory of Constraints

The theory of constraints was formulated by Goldratt in 1990, which is grounded on the premise that there is at least one factor that may impede the system's ability to accomplish its intended outcomes. Through this theory, it becomes feasible to pinpoint the pivotal factors that hinder the system and processes, thereby enhancing performance. The theory further acknowledges that in order for any system or process to achieve progress in its goals, it is imperative to identify the constraints at hand and manage the entire system accordingly. This involves a five-step approach: identifying the constraints within the system, determining the optimal means of capitalizing on these constraints, ensuring that all other aspects are subordinate to this decision, elevating the constraints within the system, and allowing for inertia to engender constraint.

According to Wyngaard, Pretorius, and Pretorius (2012), the theory can also be comprehended through the principle of triple constraints, which is a fundamental

concept in project management derived from the project implementation framework. This principle offers guidance in terms of project planning and implementation. Researchers assert that triple blocking serves as a cornerstone of project plans and is indispensable to the monitoring and control system. As indicated by Hassan, Adeleke, and Taofeeq (2019), the theory recognizes project scope, time, and cost as three paramount flexibilities, wherein project time encompasses planning and duration, costs pertain to budget and resources, and scope encompasses project requirements and tasks. Research suggests that long-term projects are intrinsically linked to completion schedules, while challenging projects are inherently tied to cost planning. The performance criteria of deliverables set boundaries for scope-constrained projects. Wyngaard, Pretorius, and Pretorius (2012) also highlight that project quality is an integral facet of project management, which is buttressed by the triple constraint principle within the theory of constraints.

A key strength of this theory is its analytical simplicity. It offers a clear and practical method for identifying performance-limiting factors and prioritising corrective action. The theory encourages system-wide thinking, emphasising that improvements must target the most critical bottlenecks rather than distributing effort uniformly. This is particularly relevant for PPP road projects, where constraints such as slow procurement approvals, weak feasibility studies, or delays in financing disbursement have disproportionate effects on project timelines and costs. Additionally, the theory provides a strong framework for continuous improvement, aligning well with the long-term, multi-phase nature of PPP road projects.

Despite its strengths, TOC has limitations. It assumes the existence of a single, dominant constraint, an assumption that may oversimplify the complexities of PPP road

infrastructure where multiple constraints such as political, financial, environmental, technical, and institutional may exist simultaneously. The theory also focuses heavily on internal operational factors and does not sufficiently address external influences such as political interference, legislative delays, community opposition, or contractor capacity issues. Furthermore, the theory tends to underplay the socio-political and multi-stakeholder dynamics inherent in PPP projects, where decisions are not purely rational or efficiency-driven but often negotiated and influenced by competing interests.

Despite these weaknesses, the Theory of Constraints provides a valuable conceptual anchor for analysing project identification and performance in PPP-based road projects. PPP projects depend on early identification of constraints in design, planning, financing, and institutional coordination. When such constraints are not diagnosed and mitigated early, they translate into delays, cost overruns, contractual disputes, or substandard project outcomes. Thus, the theory helps explain how constraint management influences the overall performance of PPP road projects in Kenya.

2.2.3 Resource Based View Theory

The Resource-Based View (RBV), originally developed by Penrose (1959) and later refined by Barney (1991), explains how firms achieve competitive advantage based on their internal resource endowments. Philosophically grounded in strategic management and economic realism, the theory assumes that organisations possess heterogeneous resources that differ in value, rarity, inimitability, and non-substitutability (VRIN). When firms control resources that meet these criteria, they are able to achieve sustained competitive advantage and superior performance.

Barney (2001) argues that resources include both tangible and intangible assets such as financial capital, human expertise, technological capability, and organisational processes. Galbreath (2005) adds that sustainable advantage emerges when these resources cannot be easily replicated or replaced by competitors. Within PPP arrangements, RBV helps explain why governments seek private partners: the private sector often brings superior financial capacity, technical knowledge, innovation, and managerial expertise that the public sector may lack.

RBV's primary strength is its strong explanatory power regarding how resource endowments influence project performance. In the context of PPP road infrastructure, the theory clarifies why private-sector involvement enhances the mobilisation of financial resources, operational efficiency, and technical innovation. RBV also highlights the importance of resource complementarity and how public-sector authority, policy frameworks, and regulatory oversight combine with private-sector capital and expertise to produce outcomes that neither party could achieve independently.

RBV has several limitations. First, it assumes rational and efficient resource allocation, which may not hold in public-sector environments characterised by political interference, bureaucratic constraints, or capacity limitations. Second, the theory is primarily firm-focused and does not fully account for inter-organisational relationships that define PPPs. The performance of PPP road projects depends not only on the resources of individual actors but also on coordination across multiple institutions. Additionally, RBV underemphasises external environmental factors, such as regulatory uncertainty and public opposition, which may significantly influence PPP outcomes.

RBV has been criticised for tautology defining valuable resources based on outcomes rather than independent criteria. It has also been critiqued for insufficient attention to institutional context and dynamic capabilities. In PPP environments, advantages do not arise solely from resource possession but from effective governance mechanisms, risk allocation, and stakeholder coordination—all of which extend beyond RBV's firm-level focus.

Despite these critiques, RBV is highly relevant to understanding the financing and performance of PPP road projects. PPP arrangements rely on private-sector financial resources, technological expertise, and managerial capabilities that complement public-sector limitations. RBV therefore provides a robust theoretical foundation for examining how financing mechanisms and particularly resource availability, cost of capital, risk absorption capacity, and technical expertise affect the performance of PPP-based road infrastructure projects in Kenya.

2.3 Conceptual Framework

This section presents the conceptual framework that guides the study. The framework illustrates the hypothesised relationships between the independent variables of project identification, project financing, project risk management, and stakeholder participation and the dependent variable, road project performance. The development of the framework is anchored on the Policy Network Theory, Theory of Constraints and the Resource-Based View Theory and therefore provides the logical structure upon for the study.

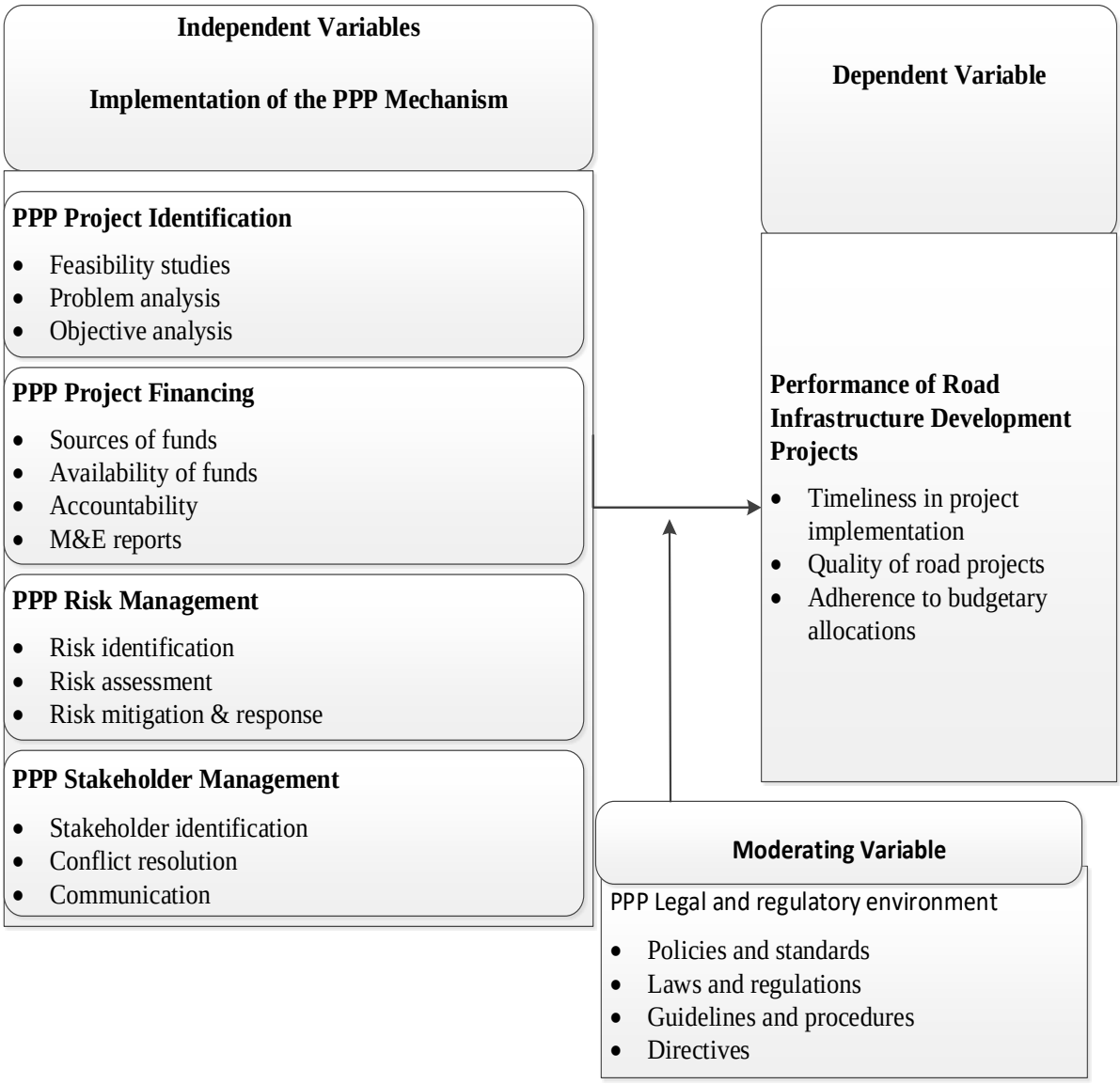

Figure 2.1: Conceptual Framework

Source: Researcher (2021).

2.4 Summary of Literature Review

The empirical literature consists of studies conducted by various researchers who have examined project performance in various backgrounds and contexts. This study examines how stakeholder participation, project risk management, project identification, and project financing affect the effectiveness of road infrastructure

development projects. The research studies provided an explanation of the project identification mechanism by Wera (2016) and Mutwiri *et al.* (2018); project financing mechanism was flourished by studies like Lohawiboonkij (2019), Garrido, *et al.* (2017), Naumenkova, *et al.* (2020) and Khmel and Zhao (2016). Project risk management was exposed through the studies of Maslova and Sokolov (2017), Gitau (2015), Ansary and Renault (2019) and studies from Franklin (2020), Lawer (2019), Wamugu and Ogollah (2017), Bazimya (2018) and Musau (2019) exposed how stakeholder participation mechanism can influence the performance of infrastructure development projects.

Table 2.1: Research Gaps

Author Study	**Focus of Study**	**Methodology**	**Findings**	**Knowledge Gaps**	**Focus of Current Study**
Mutwiri, Were and Odhiambo (2018)	the practices during the initiation and identification phases of the projects and their role in driving success of projects in Kenya supported by Constituency Development Funds (CDF)	Purposive sampling	The study findings revealed that initiation and identification of the project explain 43.4% variation in ability of the projects funded by CDF to perform.	The study was not clear on why it concentrated on the Constituency Development Funds (CDF) in Kenya	Kenyan road project performance and public-private partnerships
Wera (2016)	A case study of vocational projects in Kibera is used to examine the current relationship between identification and project performance.	Purposive Sampling	The study findings revealed that sound analysis of the problem, objectives and risk at the identification phase of the project increases the	The study was done in Kibera County	Kenyan road project performance and public-private partnerships

Author Study	Focus of Study	Methodology	Findings	Knowledge Gaps	Focus of Current Study
			chances of success.		
Thomassen, Vassbø, Solheim-Kile and Lohne (2016)	The role of transaction costs in the PPP tendering process	Case Study	The findings of the study revealed that the tendering stage of the PPP; there is a significant portion of costs that are involved	The study concentrated on the transaction costs and not public private partnerships and performance of road projects in Kenya	public private partnerships and performance of road projects in Kenya
Ngahu, Muturi, Ngumi and Kwasira (2018)	Assessment of the link between viability of the project and finances through PPP using evidence from the Kenya's National Treasury	Cross sectional survey	The results of the study revealed that a lot of firms generate huge profits from PPP projects and majority of Kenyan investors were seen to have derived these benefits.	The study did not give a reason on why it chose the Kenya's National Treasury as the case study	public private partnerships and performance of road projects in Kenya
Mwangi (2018)	M&E and its interaction with sustainability of community development projects in the County of Kiambu		The analysed results showed that including stakeholders in PPP ensure that the project is fully supported and the firm should regularly publish reports on PPP	The study was done in Kiambu County	public private partnerships and performance of road projects in Kenya
Sarvari, Valipour, Yahya, Noor, Beer and	Determining the approaches of identification of risks in PPP	Descriptive survey	The study findings revealed that majority of the private partners in Malaysia do	The study was done in Malaysia	public private partnerships and performance of road

Author Study	Focus of Study	Methodology	Findings	Knowledge Gaps	Focus of Current Study
Banaitiene (2019)	projects in Malaysia		not have more experience in the process involved in identification of risks		projects in Kenya
Lawer (2019)	Examining the participation of stakeholders in large scale infrastructure projects in Ghana	Census sampling	Stakeholder participation in the project led to co-creation of values, avoidance of conflicts and promotion of inclusive growth.	It was a case study of Tema port and findings may not apply to other projects	Connect stakeholder participation to road project performance in Kenya.
Wamugu and Ogollah (2017)	Stakeholder involvement in the Mathira East Constituency's Constituency Development Fund (CDF) project performance	Stratified and simple random sampling techniques	The participation of stakeholders in initiation, implementation, monitoring and control led to higher performance of CDF projects.	Contextual gaps as the focus of the study was on Mathira East constituency	The emphasis was on linking stakeholder participation to the performance of Kenyan road projects.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter offers a justification for the choice of research methodology adopted by the dissertation. The chapter will begin by giving a justification of the research design, then it will go on to give information on the target population, Data collection instrument and procedure, sample size and sampling procedure, and data analysis techniques. The chapter will also go over ethical considerations and conclude with a definition of the variables.

3.1 Research Philosophy

The pragmatism research paradigm, which supports the use of mixed-methods research in social inquiry, served as the foundation for the current investigation (Morgan, 2014). Experience is the primary source of knowledge, according to pragmatism's main epistemological tenet (Kaushik & Walsh, 2019). The study's attempt to use a variety of research methodologies for data collection that the distinctive interpretation of the PPP phenomenon and road project performance in Kenya renders the paradigm suitable for this research. Numerous studies conducted locally have used this philosophy, among them; Wachira, Maina & Okemwa (2020); Chepkemboi, Kungu & Mbaraka (2020) and Juma (2018).

3.2 Research Design

The present investigation aimed to employ a descriptive research design. This particular design is favoured due to its inherent simplicity, applicability in various contexts, flexibility, and inquisitive attributes towards the phenomenon under study (Doyle,

McCabe, Keogh, Brady & McCann, 2020). Furthermore, this design is preferred for this study because it allows for the description of conditions, events, and individuals in their natural state (Siedlecki, 2020). Scholars further argue that this design does not provide researchers with the opportunity to manipulate variables, but rather allows for the description of variables and even samples. Therefore, this design facilitated an effective description of project identification, project risk management, legal framework, project financing, and the performance of road infrastructure development projects in Kenya.

The study employed a mixed methods approach. This refers to the collection and analysis of both qualitative and quantitative data within the same research project (Leavy, 2017). A mixed methods design offers greater rigor, as emphasized by Saldaña and Omasta (2016), and provides insights that may not be attainable when using either a solely quantitative or qualitative approach (Creswell & Creswell, 2017). Given that the concept of public-private partnerships (PPP) is relatively new in Kenya with limited research in the literature, a mixed methods approach was appropriate as it allowed the researcher to utilize secondary data sources such as audit reports while also utilizing quantitative methods to collect primary data that can be generalized to the wider population.

3.3 Description of Variables

The study examined Kenyan road project performance as well as public-private partnerships. The performance of Kenya's road infrastructure development projects, as determined by timeliness, quality, and budget, is the dependent variable. PPP project identification is the first independent variable, and it was assessed using objective analysis, problem analysis, and feasibility studies. The second independent variable

concerned PPP project financing, with particular attention paid to funding sources, funding availability, accountability, monitoring, and reporting on evaluations. This third independent variable was determined by concentrating on risk management, specifically risk identification, risk assessment, risk mitigation, and risk responses. Stakeholder management is the subject of the fourth and final independent variable, which focuses on communication, conflict resolution, and stakeholder identification. The moderating variable of the study concentrated on how the legal framework affected the PPP mechanism and the effectiveness of road projects in Kenya. The variables are described in the table below.

Table 3.1: Description of Variables

Variables	indicators	Measurement
Independent variables		
PPP Project identification	• Number of feasibility studies • Problem analysis • Objective analysis	• Ordinal scales on each of the indicators. • Qualitative review on secondary information through literature analysis, brainstorming sessions, customer research and conflict spotting.
PPP project financing	• Sources of funds • Availability of funds • Accountability • Monitoring and evaluation reports	• Ordinal scales on each of the indicators. • Interval scales for sources, availability and accountability of funds.
PPP risk management	• Risk identification • Risk assessment • Risk mitigation and responses	• Ordinal scales on each of the indicators. • Measured qualitatively through secondary literature review and key informant interviews on threat identification, decision making, threat management, opportunities, labour, time, costs and uncertainty.
PPP stakeholder management	• Stakeholder identification • Conflict resolution • communication	• Ordinal scales on each of the indicators. • Measured qualitatively through secondary literature review and key informant interviews.
Moderating variable		
PPP legal and regulatory environment	• Laws • Procedures • Guidelines • Standards • Policies, • Regulations • Directives.	• Ordinal scales on each of the indicators. • Measured qualitatively through secondary literature review and key informant interviews. • Development of an independent variable composite and testing the relationship between the moderating variable, the independent and dependent variables.
Dependent variable		
Performance of road projects in Kenya	• Timeliness • Quality • Budget	• Ratio scales for sources, availability and accountability of funds. • Measured qualitatively through secondary literature review and key informant interviews.

3.4 Study Locale

The study was conducted in Kenya and on road infrastructure projects and respondents in Nairobi, Kiambu, Kajiado, Mandera, Marsabit, Wajir, Taita Taveta, Bungoma,

Busia, Vihiga, Embu, Kirinyaga, Laikipia, Muranga, Nyeri, Tharaka Nithi, Mombasa, Migori, Narok, Lamu, and Nakuru Counties.

3.5 Population

The purpose of the study was to investigate the effectiveness of Public-Private Partnerships (PPPs) in the field of road infrastructure in Kenya. Individuals encompassing the target population consisted of various stakeholders from the public sector, including the PPP unit, road agencies, environmental agencies, the county government, regulatory boards, and contractors. According to records from the Ministry of Roads and Infrastructure, there were a total of 23 significant projects underway in the country (Appendix 1). However, this study specifically focused on the large-scale development of roads within the realm of infrastructure. The selection of projects for analysis consisted of 15 road infrastructure development projects across the country, with respondents comprising senior leaders and managers involved in these projects. The researcher aimed to engage 2 project managers, 2 project contractor staff members, 2 government treasury officials, 2 county-specific executives responsible for roads, 1 project environmental specialist, and 2 government liaison officers for each project, amounting to a total of 11 respondents per project. Consequently, the study sought to involve a total of 165 respondents within its target population.

Table 3.2: Targeted Road Projects

NO.	PROJECT NAME	COUNTY	TARGET POPULATION
1	Nairobi-Thika Highway O&M Toll Road	Kiambu	11
2	Roads Annuity Programme Lot 33: Kajiado – Imaroro and Ngong – Kiserian – Isinya Roads	Kajiado	11
3	Roads Annuity Programme Lot 3: Samatar – Wajir (B9) and Rhamu – Mandera(B9) Roads	Mandera, Marsabit, Wajir	11
4	Roads Annuity Programme Lot 32: Illasit – Njukini – Taveta Road	Kajiado, Taita Taveta	11
5	Roads Annuity Programme Lot 18: select urban roads in 4 Counties; Kakamega, Vihiga, Bungoma and Busia.	Bungoma, Busia, Kakamega, Vihiga	11
6	Roads Annuity Programme Lot 15: Select urban roads in 6 Counties; Nyeri, Kirinyaga, Murang'a, Embu, Tharaka Nithi and Laikipia	Embu, Kirinyaga, Laikipia, Murang'a, Nyeri, Tharaka Nithi	11
7	Roads Annuity Programme Lot 8: Bomas – Kiserian – Magadi (C58), Bomas - Karen - Dagoreti - Ruiru (Bomas - Dagoretti Market)(C63), Uplands - Githunguri – Ngewa-C65 and other link Roads.	Kajiado, Nairobi	11
8	2nd Nyali Bridge Project	Mombasa	11
9	Roads Annuity Programme Lot 6; select roads in 6 Counties; Narok, Bungoma, Transnzoia, Kakamega, Busia and Narok	Bungoma, Busia, Kakamega, Migori, Narok	11
10	Lamu-Garissa-Isiolo Highway	Lamu	11
11	Integrated Marine Transport System (IMTS)	Lamu, Mombasa	11
12	Nairobi – Nakuru – Mau Summit Highway Project	Nakuru	11
13	Nairobi Mombasa Highway Project	Mombasa	11
14	Nairobi Southern Bypass project	Nairobi	11
15	Nairobi City Council Car Park Project	Nairobi	11
	TOTAL		**165**

Source: Public private partnership portal – National Treasury

3.6 Sampling Technique and Sample Size

3.6.1 Sampling Technique and Sample Size

Sampling is the process of selecting a small unit from the entire population in order to obtain data that is applicable to the entire population (Leavy, 2017). The study selected only the largest road-related infrastructure development projects using purposeful sampling. Additionally, because they possess knowledge that can address the research questions, the contractors, liaison officer, and project managers were purposefully chosen to be included in the study.

3.6.2 Sample Size

Given the small size of the targeted population, a census was conducted to ensure that all 165 respondents were included in the final sample size. Censuses are appropriate when the population is small (200 or fewer elements), the respondents are easily accessible to participate in the study, and they possess sufficient knowledge about the research topic, according to Martínez-Mesa, González-Chica, Duquia, Bonamigo, and Bastos (2016). Since every component is included in the study and the results are not generalized, the census is more accurate. As a result, 165 respondents who were employed on Kenyan road infrastructure projects made up the final sample size.

3.7 Data Collection

The study used data from primary and secondary sources, as was already mentioned. Questionnaires that were thoughtfully crafted to include both closed-ended and open-ended questions made it easier to gather important data. The study's semi-structured instrument made it possible to gather both qualitative and quantitative data (Sheard, 2018). Qualitative data, which is characterized by its non-numerical nature, allowed the

respondents to freely express their perspectives and opinions. This type of data was derived from the open-ended questions included in the instrument (Hennink, Hutter & Bailey, 2020). Additionally, following the initial questionnaire, a semi-structured interview process was conducted. According to Adams (2015), this type of interview is conducted in a conversational manner and involves individual interviews with the respondents. Both open-ended and closed-ended questions, as well as probing questions, were utilized during this process.

On the other hand, quantitative data is numerical in nature and is capable of describing each data value. According to Barrett and Twycross (2018), this type of data takes the form of counts or numbers. The data collected in this study was organized into a set in order to derive a unique numerical value, which could then be analysed and interpreted. The foundation of quantitative research lies in the testing of theories, which is shaped by positivist and empiricist philosophies (Creswell & Creswell, 2017). In this study, the research instrument's closed-ended questions provided the quantitative data, which were then converted to a five-point Likert scale. Respondents could rate how much they agreed or disagreed with a range of statements using the Likert scale 1 (strongly disagree) to 5 (strongly agree).

In terms of data collection, the primary data was initially obtained by personally administering the instruments to the research respondents who were involved in infrastructure development projects. These individuals were considered to possess valuable information regarding the public-private partnership (PPP) mechanism in the country. For respondents who were geographically distant, the questionnaires were sent via e-mail, and upon completion, they were returned for further analysis and interpretation. The researcher maintained a log of all questionnaires to ensure that all

respondents were reached, which also enhanced the overall response rate. The process of gathering secondary data required the utilization of the semi-structured interview process, as well as the review of audit reports from the treasury and the World Bank PPP blog.

Secondary data primarily gathered information on the dependent variable of the performance of the road infrastructure development projects, while primary data was gathered for the independent study variables of project identification, project financing, project risk management, and stakeholder participation.

3.8 Data Reliability and Validity

To confirm the validity and reliability of the instrument, the researcher ran a pilot test. Supervisors and subject-matter specialists examined the study's research instruments (questionnaire) to make sure they are valid and dependable and will yield accurate data from which conclusions can be made. Three PPP projects were used in the researcher's pilot study, and the respondents were members of the project team, including contractors and project managers. The researcher tested the responses and made necessary adjustments, eliminating any errors or ambiguous language in favour of clear, concise language.

3.8.1 Data Reliability

According to Vaske (2019), the ability of a research tool to produce consistent results across multiple trials is known as reliability. A researcher can test the research instrument using one of four reliability models. They included the test-retest method, which involves giving the same test to the same group again; parallel forms, which comprise various versions of the same test; inter-rater, which involves giving the same

test to various groups and comparing their responses; and internal consistency, which examines each test item separately (Chan & Idris, 2017). The similarity of the instrument was evaluated using Cronbach's Alpha for the internal consistency of this study. The reliability of the instrument is indicated by an alpha index of 0.7 or higher.

3.8.2 Data Validity

An instrument's validity is determined by how well its questions and design enable the collection of the desired and targeted data. A valid tool produces responses that are consistent with expectations and measures what is expected to measure (Creswell & Creswell, 2017). Construct, content, and face validity are the three categories of validity. In terms of construct validity, the instrument's ability to measure the intended concept is verified, content validity involves ensuring full representation, and face validity pertains to the instrument's seeming suitability for use (Chan & Idris, 2017). By matching the questionnaire to the research objectives, construct validity was used in this study to make sure the instrument captures the study's content.

3.9 Data Analysis and Presentation

After the completion of the data collection process, it is necessary to return all field materials, including questionnaires, data collection sheets, and field notes. These materials should be cleaned, completed, and organized in preparation for analysis. Subsequently, the information should be programmed and inputted into the statistical package for social science (SPSS version 25.0) for further analysis. According to Agresti (2018), data analysis involves the collection, analysis, and modelling of data to extract key insights that guide the decision-making process.

As a result, this study collected both qualitative and quantitative data, and conducted inferential and content analysis. Descriptive analysis was employed to present the raw data in a more meaningful and visual manner, facilitating simple interpretation (Vaske, 2019). Measures of central tendency, such as means, frequencies, percentages, and standard deviation, played a crucial role in presenting the quantitative research data in this study. The results of the descriptive statistics were presented through text, frequency, and percentage tables. Additionally, the researcher utilized NVIVO 10 to process and present the qualitative data in various themes, narratives, conversations, and discourses across the research variables.

Inferential statistics were also employed to generalize the sample results to the larger population. Multilevel regression analysis (MLA) was used in this study to examine how the independent variables (Public-Private Partnerships) influence the dependent variable (performance of infrastructure development projects). Furthermore, to assess and explain the relationship between the independent and dependent variables, multiple regression analysis was used. The moderating effect of the moderating variable was also tested using multiple regression analysis.

The Multiple Regression Model will follow this format:

$$\mathbf{Y= \beta_0+ \beta_1X_1+\beta_2X_2+\beta_3X_3 +\beta_4X_4 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.7.1}$$

Where:

Where Y= Performance of road infrastructure Development Projects

B_0 = Constant

β_1, β_2, β_3, and β_4 are Coefficients of the Public-Private Partnerships mechanism

ε = error term

X_1= Project Identification Mechanism

X_2= Project Financing Mechanism

X_3= Project Risk Management

X_4= Stakeholder Participation Mechanism

Model 3.7.1 served as the foundational model for establishing the relationships between the PPP mechanism and the dependent variable, which in this case was Kenya's road infrastructure projects' performance. The second model, 3.7.2, analysed the legal and regulatory framework as a moderating factor.

$$\mathbf{Y= \beta_0+ \beta_1 X_{ppp} + \beta_2 M + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.7.2}$$

Where Y= Performance of road infrastructure Development Projects in Kenya

B_0 = Constant

β_1 = Coefficients of the Public-Private Partnerships mechanism.

β_2 = Coefficients of the moderating variable on the legal and regulatory environment

X_{ppp} = Composite independent variables on the PPP mechanism

M= Legal framework as a moderating variable

ε = error term

Finally model 3.7.3 was estimated to give direction and effect of the moderator on the independent variables and its total effect on the dependent variable

$$\mathbf{Y= \beta_0+ \beta_1 X_{ppp} + \beta_2 M + \beta_1 X_{ppp}.\ \beta_2 M+ \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.7.3}$$

If the legal framework is significant when introduced into the model (3.7.1) then, this explains the first condition of explanatory where all variables should be significant (Mackinnon *et al.*,2007). Model 3.7.2 was estimated where the legal framework and PPP mechanisms were used to estimate the moderation effects. If the coefficient in model (3.7.2) are not significant and the legal framework in model (3.7.3) are not significant, there is no moderating effect (Mackinnon *et al*.,2007). Consequently, the legal framework is just an explanatory variable.

Following the determination of the degree of moderation, the multiple regression model was modified to account for the cases in which the regression coefficient is significant. This yields data indicating a systematic alteration of the form or degree of relationship between the dependent and independent variables.

In accordance with the goals of the study, the researcher also determined and arranged words into themes as part of content analysis. Based on the study's objectives and the wordings used, all of the open-ended question responses were analysed and categorized into themes. In this study, it was then possible to infer meanings and connect words to concepts.

Tables, charts, figures, and discussions were used to present the study's findings from the descriptive, inferential, and content analyses.

3.10 Diagnostic Tests

Tests were carried out on the data in order to assess any violations of data assumptions that may have been made by the study. The diagnostic tests conducted by the researchers included an examination of normality by analysing the values of skewness and kurtosis. The study employed the use of a p-p plot to evaluate whether the data exhibited a normal distribution in relation to the line of best fit. In addition, the presence of multicollinearity was assessed through the use of a multicollinearity test, utilizing the variance inflation factor (VIF) and the Durbin Watson statistics to examine autocorrelation. Any VIF values exceeding 10 were considered indicative of multicollinearity.

Ullah, Aslam, Altaf, and Ahmed (2019) note that multicollinearity occurs when there is a correlation between independent variables in a regression model. The issue with this correlation arises from the fact that independent variables should ideally be independent of one another. When there is a significant correlation between variables, problems can arise when fitting a model and interpreting the results. According to Haitovsky (2019), multicollinearity can be measured using a metric known as the variance inflation factor (VIF), which evaluates the correlation and strength of the correlation between the regression model's predictor variables. The VIF value ranges from 1 to an upper limit, with 1 indicating no correlation, 1 to 5 indicating moderate correlation, and a value greater than 5 suggesting potentially severe correlation between a specific predictor variable and other predictor variables in the model. Thus, a VIF value greater than 5, indicating the absence of multicollinearity in the regression model, is desired.

A normality test is employed to determine if a sample data set accurately represents a normal distribution (Paul & Zhang, 2015). Onder and Zaman (2017) highlight the importance of normality of residuals, as it impacts the accuracy and confidence of hypothesis tests and confidence intervals for regression coefficients. These tests and intervals rely on the standard errors of estimates, which are influenced by the normality of residuals. The normality of residuals also affects the validity of model selection criteria such as R-squared and adjusted R-squared, which measure the goodness of fit and the balance between model complexity and simplicity. Furthermore, normality of residuals plays a role in the identification and treatment of outliers and influential points that have a significant impact on model fit and parameter estimates. The study will utilize the Shapiro-Wilk test to analyse the data and determine if it deviates significantly from a normal distribution, considering various parameters such as the well-known p-value. If the p-value exceeds 0.05, it can be assumed that the data meets the normality assumptions.

3.11 Logistical and Ethical Considerations

The logistics of the field work were planned and organized after the project was approved. It was asked for the NACOSTI permit. The selected respondents also received an introduction letter from the researcher.

The study closely followed all applicable research ethics guidelines, such as the respondents' free and informed consent, complete confidentiality of the data collected, consideration for the environment in which the study was conducted, the time allotted for the respondents, and compliance with COVID regulations.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.0 Introduction

1. The research data collected in the field through surveys and interview schedules is presented in this chapter along with the results of reliability tests, general respondent information, descriptive analysis results according to the study variable, diagnostic tests, and inferential statistics. Furthermore, the results are examined and interpreted in Chapter Two through a comparison with the reviewed literature.

4.1 Response Rate

According to Anderson and Berdie's (2015) proposal, the study response rate was designed to ascertain the ratio of respondents who took part in the study to the number of respondents who were asked to participate. This was carried out using the questionnaires that were given to 165 respondents, which was the sample size. The results are shown in Table 4.1.

Table 4.1: Response Rate

Category	**Frequency**	**Percentage**
Questionnaires returned	157	95.2
Questionnaires not returned	8	4.8
Total	**165**	**100**

Source: Survey Data (2022)

As indicated by Table 4.1's results, 157 (or 95.2%) of the questionnaires were sent and completed in full. However, 8 (4.8%) of the respondents failed to send back their surveys. Nonetheless, the response rate of 95.2% was deemed sufficient to make

inferences and generalizations in accordance with According to Mugenda and Mugenda (2003), a response rate of 70% or higher is considered optimal for conducting data analysis. This means that if a survey or questionnaire is distributed to a sample population, it is ideal to receive responses from at least 70% of the participants in order to ensure the reliability and validity of the data analysis.

The high response rate enhances the representativeness of the sample and strengthens the validity of the study findings by reducing the likelihood of non-response bias.

4.2 Reliability Test Results

An examination re-rest technique was employed to ascertain the instrument's dependability, and the test scores' correlation coefficient was computed using Cronbach's alpha. Table 4.2 presents the outcomes.

Table 4.2: Reliability Test Results

Variable	**α-Value**	**Conclusion**
Project identification	0.683	Reliable
Project financing	0.692	Reliable
Risk management	0.702	Reliable
Stakeholder management	0.731	Reliable
Legal framework	0.785	Reliable
Project performance	0.862	Reliable
Aggregate score	**0.743**	**Reliable**

Source: Pilot Study (2022)

The findings as presented in Table 4.2 demonstrate that the reliability of each factor was reported in the following manner: project identification, project financing, risk management, stakeholder management, legal framework, and project performance, with Cronbach alpha values of .683, .692, .702, .731, .785, and .862, respectively, generated using SPSS 21.0. The mean alpha coefficient for each individual factor

significantly surpassed 0.7, which satisfied the recommendation put forth by Mugenda and Mugenda (2003) that an alpha coefficient score greater than 0.7 indicates a high level of instrument reliability. Hazzi and Maldaon (2015) state that in order to guarantee trustworthy results, an alpha coefficient of between 0.75 and 1.0 is recommended. Thus, since the Cronbach's Alpha Index (α) value of 0.743 falls within the advised range, the obtained average score was deemed acceptable. The instruments demonstrated acceptable internal consistency, meaning the items effectively measured their respective constructs.

4.3 Respondents' General Information

The purpose of the study was to gather background data on the respondents based on their gender, years of experience working on public-private partnership projects, current academic standing, and current employment. The results are shown in the following manner:

4.3.1 Respondents' Gender

The goal of the study was to determine how gender was represented in the research; Figure 4.1 presents the findings.

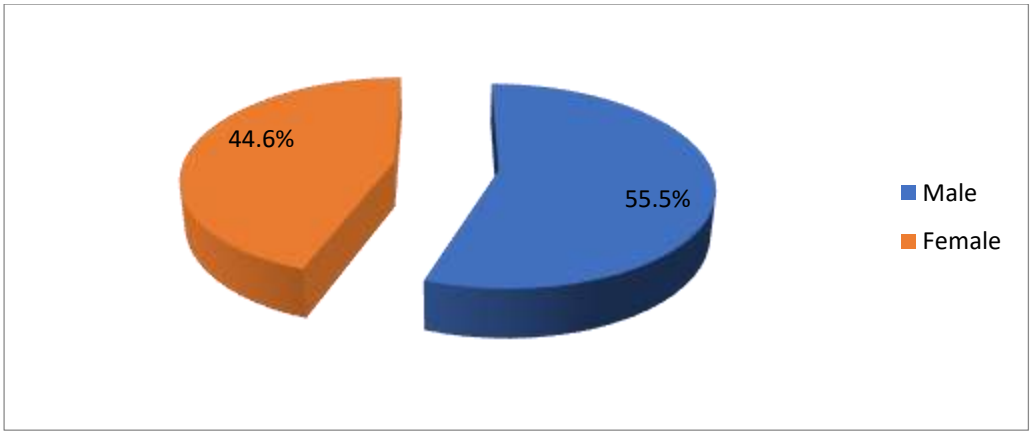

Figure 4.1: Respondents' Gender

The outcomes presented in Figure 4.1 demonstrate that, with 55.5% of respondents being male, the majority of respondents were female (44.6%). To provide a true representation of men and women in the study, the gender of the respondents was required. The gender distribution reflects a balanced representation, allowing the study to capture diverse perspectives from both male and female practitioners in the PPP road sector.

4.3.2 Respondents' Years Worked in Public Private Partnership Projects

The purpose of the study was to determine how long the respondents had worked on public-private partnership projects. The results are displayed in Table 4.3.

Table 4.3: Respondents' Years Worked in Public Private Partnership Projects

Years	Frequency	Percentage
1 - 5	16	10.2
6 - 10	40	25.5
11 - 15	100	63.7
Above 15	1	0.6
Total	**157**	**100**

Source: Survey Data (2022)

According to Table 4.3's results, the majority of respondents (63.7%) had worked on public-private partnership projects for 11 to 15 years, followed by 25.5% who had worked on them for 6 to 10 years, 10.2% who had worked on them for 1 to 5 years, and 0.6% who had worked on them for more than 15 years. This demonstrated the respondents' diverse range of work experiences, which allowed them to better understand the goals of public-private partnerships, what the organization expected of them, and the opportunities they had to advance their professional development and acquire relevant skills. A majority (63.7%) had significant professional experience (11–15 years), suggesting that respondents possessed adequate exposure to PPP road projects and could provide reliable and informed responses.

4.3.3 Respondents' Present Academic Status

The purpose of the study was to determine the respondents' current academic standing. The results are displayed in Figure 4.2.

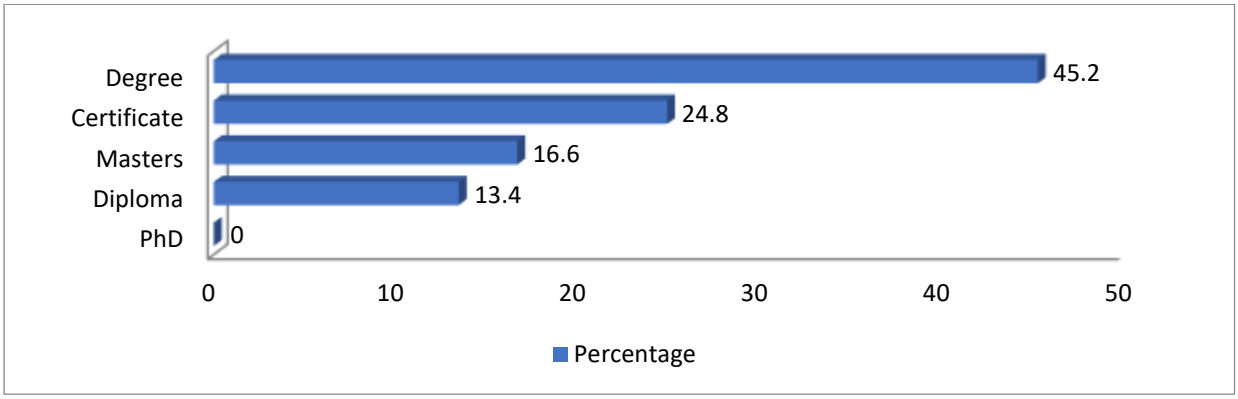

Figure 4.2: Respondents' Present Academic Status

The findings, as seen in Figure 4.2, indicate that 45.2% of respondents had their current academic status at the degree level, followed by 24.8% with a certificate, 16.6% with a

master's, and 13.4% with a diploma. It was vital to ascertain the respondents' current academic standing because when workers receive sufficient training for their positions, job satisfaction rises, boosting productivity at work and improving the performance of Kenyan road projects. Most respondents held at least a degree, indicating strong academic grounding, which increases the credibility of the insights provided about PPP project performance.

4.3.4 Respondents' Current Position

The purpose of the study was to ascertain the respondents' present situation. The results are displayed in Table 4.4.

Table 4.4: Respondent's Current Position

Years	**Frequency**	**Percentage**
Project managers	51	32.5
Project contractors	54	34.4
Government liaison officer	52	33.1
Total	**157**	**100**

Table 4.4 displays the results, indicating that the participants were primarily project contractors (34.4%), followed by government liaison officers (33.1%) and project managers (32.5%). The distribution shows adequate representation of all key actors engaged in PPP road project conceptualisation, financing, implementation, and supervision.

4.4 Results of Descriptive Analysis

The Mean (M) and Standard Deviation (SD) were used to present the quantitative data results. The sections below present the findings.

4.4.1 Project Identification Mechanisms

Table 4.5 presents the results of the descriptive statistics on the project identification mechanism.

Table 4.5: Project Identification Mechanisms

Statements on Project Identification Mechanisms	**M**	**SD**
Intensive literature analysis on the road project was conducted.	4.14	0.796
There were brainstorming sessions held on different occasions.	4.17	0.706
Prudent customer research on the road project was appropriately conducted.	3.84	1.163
During project identification, consultants were able to foresee a number of conflicts from all spheres.	4.17	0.839
A feasibility study was conducted to determine the viability of this road infrastructure project	4.34	0.712
Feasibility studies identified possible risks to be encountered in the project implementation phase	4.20	0.925
Different challenges to be encountered in the implementation phase of this project were projected in the feasibility studies	3.92	1.243
Project budgeting was done accurately during scoping of the study	3.74	1.156
Project milestones were well projected in the feasibility study of this project	4.08	0.961
This project's objective analysis was done accurately	3.87	1.230
Different stakeholders were consulted prior to deciding to undertake this project	4.21	0.927
The interests of different stakeholders in this project were harmonized prior to commencement	4.15	1.114
Project evaluation criteria were set out in the phase of project identification	4.30	0.858
Aggregate Score	**4.33**	**0.972**

Source: Survey Data (2022)

Regarding the effect of project identification on the performance of road infrastructure development projects in Kenya, the respondents agreed, as shown by the findings shown in Table 4.5. This is clear from the combined mean score of 4.33, which shows a significant influence, and the standard deviation of 0.972, which shows a low degree of response variation. These findings are consistent with Wera's (2016) investigation

into the connection between project identification and performance using a case study research design. Wera's study's conclusions showed that project identification is critical to a project's success in terms of cost, schedule, and quality. Similarly, the findings of Mkuni's (2018) study, which focused on the assessment of the project identification cycle in Zambia's road construction projects, also support the notion that deficiencies in the project identification processes can have negative consequences on project delivery, such as cost overruns, delays, and quality shortfalls. The results of both studies highlight the significance of effective project identification in ensuring project success.

The respondents expressed agreement on several statements related to project identification. Firstly, the fact that they both scored 4.34 on the mean with a standard deviation of 0.712 suggests that they thought a feasibility study had been done to evaluate the project's viability for building roads. Second, with a mean score of 4.30 and a standard deviation of 0.858, they admitted that project evaluation criteria were set during the project identification phase. Furthermore, with a mean score of 4.21 and a standard deviation of 0.927, the respondents also agreed that different stakeholders were consulted before the project was decided to be undertaken and that feasibility studies revealed potential risks during the project implementation phase (mean score of 4.20, standard deviation of 0.925). Furthermore, they identified brainstorming sessions as occurring during project identification (mean score of 4.17, standard deviation of 0.706) and the consultants' capacity to foresee conflicts resulting from divergent viewpoints (mean score of 4.17, standard deviation of 0.839). The respondents (mean score of 4.15, standard deviation of 1.114) also concurred that a thorough literature analysis was done on the road project and that the interests of various stakeholders were aligned prior to the project's start (mean score of 4.14, standard deviation of 0.796).

Additionally, the respondents agreed with the following statements: thorough customer research on the road project was conducted (mean score of 3.84, standard deviation of 1.163); accurate budgeting was carried out during the scoping of the study; an accurate analysis of the project's objectives was performed (mean score of 3.87, standard deviation of 1.230); and feasibility studies projected the challenges that would be encountered during the project's implementation phase (mean score of 3.92, standard deviation of 1.243) (m= 3.74, sd= 1.156).

The outcomes are in agreement with the study conducted by Mutwiri *et al.* (2018), which examined the role of project identification and initiation as a determinant of success in CDF project performance in three arbitrarily chosen constituencies in Kenya. According to the study, project identification and initiation accounted for 43.4 percent of the success achieved in CDF projects. The findings also align with the observations made by Qian *et al.* (2017), who emphasize the significance of project identification as a crucial element in the successful completion of any project, with certain researchers considering it as the initial step in the project cycle. In their study, Nnadi, Ejiofor, and Emmanuel (2021) examined how project identification affected the way road construction projects performed in Nigerian construction companies. According to the study's findings, 38.8% of the respondents strongly agreed that correctly identifying projects has a significant impact on how well roads are constructed. An R2 value of 0.555 and a P-Value of less than 0.05 were obtained from the regression analysis of the responses, suggesting that appropriate project identification accounts for about 55.5% of road project performance. Furthermore, the study conducted by Yidnekachew (2021) cantered on evaluating the practice of Project Identification & Design, using World Vision Ethiopia as an example. The majority of grant-funded project ideas were found

to originate from donors, as revealed by the study's findings. Additionally, the organization demonstrated competence in engaging stakeholders in the identification and design of projects for both sources of funding.

Lastly, Figure 4.3 presents the results of an additional question posed to the respondents regarding the value of project identification mechanisms.

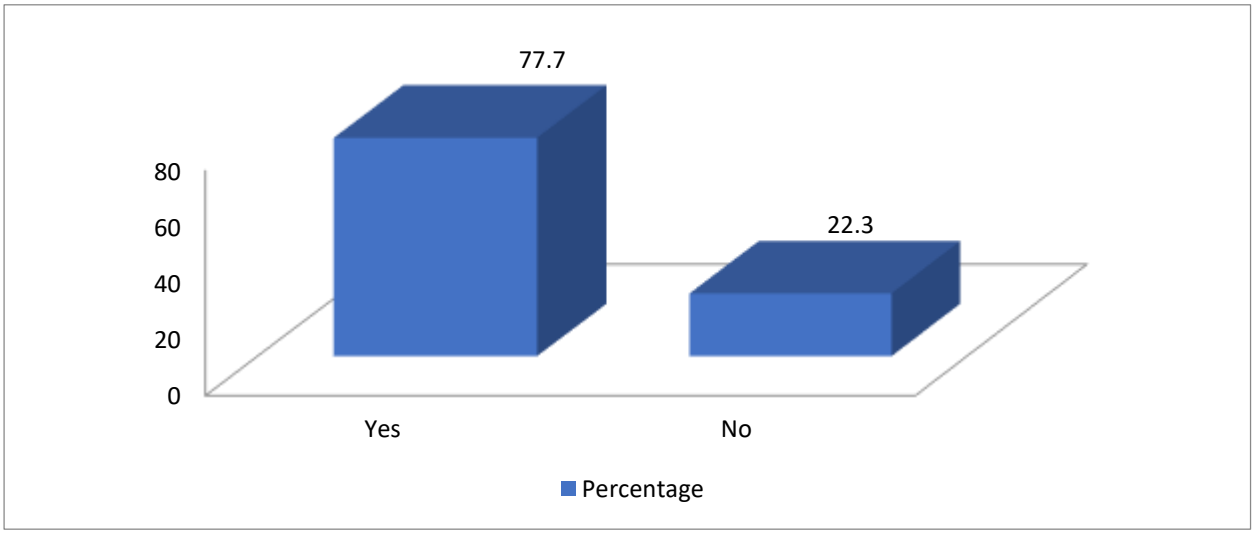

Figure 4.3: Project Identification Mechanisms

The results illustrated in Figure 4.3 reveal that a significant portion (77.7%) of the individuals involved expressed agreement regarding the utility of project identification mechanisms, while 22.3% expressed disagreement. Furthermore, the respondents emphasized that project identification mechanisms are beneficial as they facilitate the development of preliminary proposals that establish the most effective interventions and course of action within specified limitations of time and budget. Moreover, these systems guarantee that project resources are properly identified and used. These results are consistent with the study carried out in Turkana County, Kenya by Diing and Nyonje (2022), which looked into the effects of participatory project identification on

community water point projects. The study found that participatory project identification had a significant impact on the sustainability of community water point projects. Additionally, the findings from the study by Naeem, Khanzada, in support of this idea, Mubashir and Sohail (2018) investigate the relationship between project identification and project success, identifying organizational culture as a moderator and risk management as a mediator. The study's findings showed that predictors had both significant and insignificant effects on response variables.

From the interviews conducted, the respondent indicated that project success was strongly influenced by feasibility studies, brainstorming, stakeholder consultation, and early conflict identification. These findings align with Wera (2016), who emphasised that proper identification improves cost, schedule, and quality performance.

4.4.2 Project Financing

Table 4.6 presents the results of the descriptive statistics regarding project financing.

Table 4.6: Project Financing

Statements on Project Financing	M	SD
The source for funding this road project was through capital stocks shares.	4.27	0.853
The cost of the project was largely financed through own funds.	4.29	0.720
Money for this road project were acquired from bank loans.	4.25	0.724
The project financing assessment considered the proportion of finances to be provided by the Government of Kenya	3.88	1.227
The Government of Kenya committed to availing the required finances for the project on a timely basis	3.90	1.099
This project is partly financed by private capital	4.19	0.921
This project is partly funded through Government bonds	4.13	0.981
This project is partly funded through repayable loans from financial institutions	3.99	1.050
The project is financed wholly through the user-pay arrangements	4.00	0.954
The project has the support of Multilateral Development banks.	3.78	1.180
The costing of each financing was assessed and affordable ones chosen	4.14	0.820
The risks involved in different financing mechanisms were assessed before settling on the ones chosen	4.32	0.834
The contract covenants between financiers and Government of Kenya were assessed prior to disbursement of funds for the project	3.81	1.277
Private investment capital was assessed and found viable for this project	3.72	1.367
All the financing advanced towards the project can be fully accounted for	3.46	1.466
Aggregate Score	**4.01**	**1.032**

The participants' consensus is demonstrated by the findings presented in Table 4.6 that project financing affected how well road infrastructure development projects in Kenya performed. The standard deviation of 1.032 suggests that there was little variation in the responses, which is consistent with the overall mean score of 4.01. These results are consistent with research by Garrido, Gomez, de los Ángeles Baeza, and Vassallo (2017), which looked at the funding that the EU gave to Spain's road infrastructure to improve economic performance. The researcher reveals that Public-Private Partnership (PPP) projects that received financial backing from the EU resulted in the expansion of the economy and increased returns on investment. Additionally, these results are in line

with the study carried out by Sakaja and Akali (2018), who looked into how the financial capability of contractors affected the efficiency of road construction in Kakamega County. It was established that performance of road construction in the county was greatly enhanced by the financial capability of contractors.

The participants reached a consensus on various statements, including the assessment of risks associated with different financing mechanisms before selecting the chosen ones (M=4.32, SD=0.834). Furthermore, it was found that the project's cost was primarily financed through internal funds (M=4.29, SD=0.720), and the funding for this road project was obtained through capital stock shares (M=4.27, SD=0.853). Moreover, bank loans were utilized to acquire the necessary funds for this road project (M=4.25, SD=0.724), and private capital played a partial role in financing the project (M=4.19, SD=0.921). The costing of each financing option was assessed, and affordable options were selected (M=4.14, SD=0.820). Additionally, the project received partial funding through Government bonds (M=4.13, SD=0.981), and the project's entire financing was facilitated through user-pay arrangements (M=4.00, SD=0.954).

The respondents also reached a consensus on the assertions that; this project is partially financed through repayable loans from financial institutions (M=3.99, SD=1.050), the Government of Kenya made a commitment to timely allocate the necessary funds for the project (M=3.90, SD=1.099), the contractual obligations between financiers and the Government of Kenya were evaluated before disbursing funds for the project (M=3.81, SD=1.277), the project is supported by Multilateral Development banks (M=3.78, SD=1.180), and that private investment capital was examined and deemed feasible for this project (M=3.72, SD=1.367).

These findings are in accordance with the study conducted by Khmel and Zhao (2016), which focused on mechanisms that project owners and developers can adopt to attract funding for highway infrastructure construction projects. The study found that developing a financial strategy assists project managers in securing capital that enhances the project's capacity, and through income generating activities, the project is able to meet its financial obligations. Apart from bank financing for infrastructure development projects, Naumenkova, Tishchenko, Mishchenko, and Ivanov (2020) argue that these projects can obtain funds through corporate state financing, which involves the mechanism of public-private partnership. In this approach, the central government or state entices private investors to co-finance projects that are requested by the public. The findings also align with Mukami's (2021) research, which examined the influence of funding initiatives on Kitale Town construction projects that are county-funded. The results of the study indicate that which were based on the objective of funding activities, construction projects have experienced delays in funding due to various factors. These include delayed allocation of funds from the national government to the county budget, inadequate resource management by project managers, insufficient prioritization of worker salaries, uneven emphasis on project construction, and the potential insufficiency of contractors' resources.

The participants expressed a neutral opinion regarding the assertion that all the funding provided for the project can be fully accounted for (mean = 3.46, standard deviation = 1.466). This discovery contradicts the findings of Gorshkov and Epifanov (2016), who observed that when examining the financing of projects for the construction of underground structures, it is generally presumed that the refunds and repayments will be made from the project's own generated cash flows when the projects are financed

through debt. The finding is also in agreement with Gichuru's (2016) investigation into the impact of bank loan funding on project performance, specifically focusing on youth group initiatives funded by Kenyan commercial banks in the Imenti South District. The study concludes that high interest rates on bank loans, insufficient collateral, and inflexible repayment terms negatively have an adverse effect on the availability of credit, which will negatively affect the performance of youth group projects.

From the interviews conducted, the respondents indicated that the project financing mechanisms employed in the current project encompassed various approaches. For instance, the government may choose to fund the project entirely or partially with its own capital investment and look to the private sector for its knowledge and effectiveness. Alternatively, the government may opt to engage a private operator to manage and maintain the facilities or provide the required services, while outsourcing the civil works for the project through conventional procurement methods. Respondents strongly agreed that multiple financing streams including government funds, capital stock shares, bank loans, private capital, and government bonds played a key role in project success. Consistent with Khmel & Zhao (2016), financing capacity is a major enabler of road project performance.

4.4.3 Project Risk Management

The descriptive statistics results on project risk management are provided in Table 4.7.

Table 4.7: Project Risk Management

Statements on Project Risk Management	M	SD
Through this mechanism of project risk management, the road project consultants were able to tap in opportunities associated with this project	4.08	0.954
During this phase, various project threats were able to be spotted.	4.35	0.741
Uncertainties of this road project were foreseen through project risk management.	4.26	0.846
Through project risk management, aspects of time were appropriately catered for.	4.34	0.951
The practice of project risk management boosted decision making about the project.	4.41	0.891
The project cost was adjusted based on the information arising from this exercise of risk management.	4.30	0.828
There was risk assessment in this project prior to its commencement	4.30	0.836
Risk assessment involved critical analysis of potential risks in different phases of the project	4.31	0.733
All possible project risks were identified in the feasibility study	4.03	1.182
Some of the project risks identified were mitigated through insurance	4.41	0.981
Some of the risks identified were mitigated through training of staff on health and safety at the workplace	3.92	1.209
Some of the risks identified in the project were mitigated through signing contracts with suppliers	3.85	1.181
Some of the risks identified were managed through efficient internal control measures	4.11	1.092
Some of the project risks were managed through recruitment of qualified and experienced staff	4.44	0.976
Aggregate Score	**4.22**	**0.957**

The findings presented in Table 4.7 demonstrate that the participants were in agreement that project risk management affected how well road infrastructure development projects in Kenya performed. The combined mean score of 4.22 and the low response variation, as shown by the standard deviation of 0.957, both support this. The participants expressed strong agreement with the statements that certain project risks were addressed through the recruitment of qualified and experienced staff (M=4.44, 0.976), and that some identified risks were mitigated through insurance and the implementation of project risk management, which enhanced decision making

regarding the project (M=4.41, SD=0.981). These findings align with the study conducted by Gitau (2015), which discovered that project performance in Rwanda was greatly enhanced by the application of risk management during the planning stage. The results also align with the study conducted by Gain, Mishra, and Aithal (2022) regarding the risk management strategies used in Nepali road construction projects. It was primarily noted that the monitoring and evaluation reports of comparable previous projects are frequently used as a technique for risk identification, and direct judgment is frequently used for risk assessment of road construction projects in the Sindhupalchowk district, from both the client's and contractor's perspectives. From the contractor's point of view, risk response strategy entails keeping an eye on potential threats and making backup plans; from the client's point of view, risk is transferred.

The respondents agreed on the statements that; during this phase, various project threats were able to be spotted (M=4.35, SD=0.741), through project risk management, aspects of time were appropriately catered for (M=4.34, SD=0.951), Risk assessment involved critical analysis of potential risks in different phases of the project (M=4.31, SD=0.733), the project cost was adjusted based on the information arising from this exercise of risk management (M=4.30, SD=0.828), there was risk assessment in this project prior to its commencement (M=4.30, SD=0.836), uncertainties of this road project were foreseen through project risk management (M=4.26, SD=0.846), Some of the risks identified were managed through efficient internal control measures (M=4.11, SD=1.092), all possible project risks were identified in the feasibility study (M=4.03, SD=1.182), some of the risks identified were mitigated through training of staff on health and safety at the workplace (M=3.92, SD=1.209) and that some of the risks

identified in the project were mitigated through signing contracts with suppliers (M=3.85. SD=1.181).

The findings agree with Ansary and Renault (2019) study that found that risk management was responsible for over 60% of the variations in project performance in South Africa. According to Zou *et al.* (2008), ensuring value for money and protecting public and the interests of end users can be successfully achieved primarily by risk identification, assessment, and management practices. According to Kalam's (2022) investigation into risk identification for PPP road projects in Bangladesh, the most important risk factor for these projects is land availability. The public's acceptance of toll roads, delays in land acquisition, corruption in the government sector, and inadequate planning for public-private partnerships (PPPs) are the other top risk factors. The project risk management practices in Ghana's construction industry were studied by Bransah (2020), and the results indicate that contractors use accurate programs for past and current projects that are similar to their own as the most effective way to prevent risks. Close supervision of subordinates has also been found to be the maximum used remedial approach in addressing danger factors in production. The outcomes however determined that Contractors do no longer utilize risk analysis strategies but resort to the usage of contrast of projects for the functions of analysis.

From the interviews, the respondents indicated that the present project employed project risk management techniques, including identifying potential hazards that the project may encounter. Project risks can be identified, analysed, and decisions about how to reduce them can be made with the aid of risk evaluation. The process by which the project team reduces the likelihood of a risk during project implementation by implementing the required actions is known as risk mitigation. The findings show that

early threat identification, uncertainty analysis, insurance, training, and internal controls were critical in enhancing performance. This aligns with Gitau (2015), who found that integrating risk management during planning improves project outcomes.

4.4.4 Stakeholder Participation

The descriptive statistics results on stakeholder participation are provided in Table 4.8.

Table 4.8: Stakeholder Participation

Statements on Stakeholder Participation	**M**	**SD**
Bringing stakeholders on board brought about local knowledge.	4.30	0.957
There were a series of workshops conducted with stakeholders about this road project.	4.25	0.952
Numerous interviews were held from diverse stakeholders about this road project.	4.32	0.801
Part of resources for the smooth operations of this road project were contributed by the stakeholders.	4.37	0.842
Goals of this road project were realized by the input of local stakeholders.	4.59	0.640
Project managers identified all stakeholders in the project in advance	4.60	0.669
All stakeholders were involved in identification of this development project	4.22	1.004
All stakeholders participated in the design of this project	3.89	1.306
All stakeholders have participated in the monitoring and evaluation of this project	4.22	1.072
All stakeholders have participated in evaluation of this project	4.38	0.964
Key stakeholders have helped in conflict resolution on the project	4.13	1.218
The stakeholders help improve communication on project progress	3.89	1.467
Aggregate Score	**4.26**	**0.991**

Source: Survey Data (2022)

According to the aggregate mean score of 4.26 and the standard deviation of 0.991, which shows a low degree of response variation, the respondents agreed that the involvement of stakeholders had a significant influence on the progress of road

infrastructure development initiatives in Kenya. The respondents overwhelmingly agreed with the following statements: project managers pre-identified all project stakeholders (M=4.60, SD=0.669) and that goals of this road project were realized by the input of local stakeholders (M=4.59, SD=0.640). According to Lawer (2019) who examined the participation of stakeholders in large scale infrastructure projects in Ghana; sharing that stakeholder participation in the projects help in addressing any concerns of a social, cultural and environmental nature. The stakeholders also ensure that their interests and expectations are included in the scope of the project. The finding also agrees with Yousif (2019) examined stakeholder management's impact on public construction projects' performance in northern Iraq. The research showed that production commercial enterprise challenges, inability to execute given venture responsibilities and ineffective techniques used to collect venture substances are some of the important thing challenges affecting the overall performance of public production initiatives stakeholders' government approach. The outcomes further confirmed that production stakeholders' control does no longer continually paintings and isn't always suitable for all varieties of mission.

The respondents agreed on the statements that; all stakeholders have participated in evaluation of this project (M=4.38, SD=0.964), part of resources for the smooth operations of this road project were contributed by the stakeholders (M=4.37, SD=0.842), numerous interviews were held from diverse stakeholders about this road project (M=4.32, SD=0.801), bringing stakeholders on board brought about local knowledge (M=4.30, SD=0.957), there were a series of workshops conducted with stakeholders about this road project (M=4.25, SD=0.952), All stakeholders were involved in identification of this development project (M=4.22. SD=1.004), all

stakeholders have participated in the monitoring and evaluation of this project (M=4.22, SD=1.072), Key stakeholders have helped in conflict resolution on the project (M=4.13, SD=1.218), All stakeholders participated in the design of this project (M=3.89, SD=1.306) and that the stakeholders help improve communication on project progress (M=3.89, SD=1.467).

The findings agree with Assefa, Worke, and Mohammed (2015) study that used a case study of a region in western Ethiopia to investigate an analysis of the role of participants in the management of a road construction project. Study results showed that respondents were poorly engaged between external stakeholders and project stakeholders, as well as limited time, less budget and consumer interest at the design level. The findings also agree with Musau (2019) that was conducted on community participation and accountability programs for development projects. The researcher noted that social interaction allows the populace a chance to share their views and give suggestions on the project. Stakeholder engagement and project schedule as well as project specifications showed a strong and positive correlation, according to Mambwe, Mwanaumo, Nsefu, and Sakala's (2020) investigation into the effect of stakeholder engagement on construction project performance in the Lusaka District. Additionally, the results demonstrated a strong but negative correlation between stakeholder engagement and project cost.

From the interviews, the respondents indicated that the effective stakeholder participation mechanisms that were used in this project included gender representation. These included early stakeholder identification, frequent meetings to get to know the identified stakeholders, listening to their opinions, placing trust in the stakeholders, teamwork to improve stakeholders' understanding of the project, managing stakeholder

expectations appropriately, providing frequent feedback, and so on. Stakeholder participation through interviews, workshops, conflict resolution, design involvement, and monitoring positively influenced performance. This is consistent with Musau (2019), who asserted that community engagement improves project accountability and success.

4.4.5 Legal Framework

The descriptive statistics results on the moderating effect of legal framework are provided in Table 4.9.

Table 4.9: Legal Framework

Statements on Legal Framework	**M**	**SD**
There are laws in place detailing every stage of engagement with stakeholders of the road project.	3.92	1.095
There procedures in place that have to followed in order to realize the phenomenon PPPs	4.09	0.865
Relevant government agencies have stipulated various guidelines that have to be adhered to for PPPs goal realization.	4.20	0.740
There are strict standards set that have to be met for each and every road project involving PPPs.	3.96	1.002
The legislature has enacted multiple regulations on the phenomenon PPPs that make it possible for the executive/consultants/contractors to enter into PPP arrangements.	4.19	0.761
There are always issuance of directives at any point on what is expected of the road project.	4.13	0.898
There is a legal framework on when to choose PPP as a procurement option	3.98	1.059
The PPP mechanism has a clear operational framework and/or processes for the management of PPPs	4.21	0.954
There is a regulatory framework for project financing of PPP projects	4.11	0.716
There is a legal framework for contracting and effective risk management.	4.41	0.631
There is a legal framework on the institutional set-up of the bodies involved in the PPP mechanism	4.40	0.587
There is a legal framework in place for performance management that is focused on quality, cost, and time.	4.37	0.894
Aggregate Score	**4.16**	**0.850**

Source: Survey Data (2022)

Based on the findings presented in Table 4.9, it can be observed that the standard deviation is relatively low at 0.850, indicating a consistent trend among the respondents. Additionally, the aggregate mean score of 4.16 suggests a general consensus among the participants. The results indicate that the respondents largely agreed on the notion that the legal framework plays a significant role in moderating the performance of road infrastructure development projects in Kenya. Furthermore, the respondents expressed strong agreement towards the existence of a legal framework for contracting and effective risk management (M=4.41, SD=0.587) and that there is a legal framework on the institutional set-up of the bodies involved in the PPP mechanism (M=4.40, SD=0.587) and that there is a legal framework in place for performance management that is focused on quality, cost, and time (M=4.37, SD=0.894). The findings align with Ndumia's (2020) research, which focused on the influence of regulatory structures on the efficiency of building construction endeavours in Nairobi County, Kenya. The investigation revealed that although architects and quantity surveyors are well-versed and authorized in building planning and design, their primary duty is to offer guidance to clients and evaluate their requirements. Nairobi County has established a legal and regulatory framework to facilitate digital platforms for overseeing development applications, involving stakeholders and the general public in the decision-making process. NEMA effectively enforces environmental regulations, proposes measures to mitigate significant adverse impacts of building projects, and NCA registers and certifies builders. NCA regularly releases its code of ethics.

The respondents agreed on the statements that; the PPP mechanism has a clear operational framework and/or processes for the management of PPPs (M=4.21, SD=0.954), relevant government agencies have stipulated various guidelines that have

to be adhered to for PPPs goal realization (M=4.20, SD=0.740), the legislature has enacted multiple regulations on the phenomenon PPPs that make it possible for the executive/consultants/contractors to enter into PPP arrangements (M=4.19, SD=0.761), there are always issuance of directives at any point on what is expected of the road project (M=4.13, SD=0.898), there is a regulatory framework for project financing of PPP projects (M=4.11, SD=0.716), there procedures in place that have to followed in order to realize the phenomenon PPPs (M=4.09, SD=0.865), there is a legal framework on when to choose PPP as a procurement option (M=3.98, SD=1.059) and that there are laws in place detailing every stage of engagement with stakeholders of the road project (M=3.92, SD=1.095). The findings align with the study conducted by Mwelu, Davis, and Watundu (2020) on the role of compliance mediation in Uganda's road construction regulatory system. Their research illustrates that factors such as knowledge of public procurement regulations, oversight measures, penalties for employees, and contractors' reluctance to deviate from regulations play a crucial role in influencing the connection between the success of public road construction projects and adherence to the public procurement regulatory framework.

The results are consistent with a study by Jefferies *et al.* (2002) that looked at the Critical Success Factors (CSFs) of an Australian stadium constructed using the Build Operate Own Transfer (BOOT) mode of PPP. That study found that the government's effective management of the bidding process, a streamlined and transparent negotiation process, and well-managed project agreements were the most crucial elements in the Super Dome project's success. The findings also agree with Kim *et al.* (2011) who conducted research on institutional arrangements and the implementation of Korean PPP infrastructure projects. According to researchers, a transparent and effective

procurement process is essential to reduce transaction costs and to minimize the amount of time spent negotiating and concluding a contract. Respondents agreed that PPP legislation, guidelines, institutional frameworks, financing policies, and risk management rules significantly support project performance. The findings reflect Ndumia (2020), who noted that regulatory structures shape construction project outcomes.

4.4.6 Performance of Road Infrastructure Development Projects

Table 4.10 presents the descriptive statistics findings regarding the performance of road infrastructure projects.

Table 4.10: Performance of Road Infrastructure Development Projects

Statements	M	SD
All the operations of the project were extremely efficient.	4.29	0.864
The contractor employed advanced technology in undertaking the project.	4.49	0.730
The contractor has employed highly skilled manpower to undertake the project.	4.30	0.746
The human resource carrying out the project have an outstanding reputation experience in their career.	4.03	1.094
This project is on schedule as per project plan	4.20	0.830
The implementation of this project has adhered to budgetary provisions	4.34	0.781
The implementation of this project is likely to be completed on time	4.19	0.968
The quality of this project is as per the plan	4.36	0.871

The findings presented in Table 4.10 demonstrate a strong consensus among the respondents regarding their agreement with the statements. the contractor employed advanced technology in undertaking the project (M=4.49, SD=0.730), the quality of this project is as per the plan (M=4.36, SD=0.871) and that the implementation of this project has adhered to budgetary provisions (M=4.34, SD=0.781). The findings agree

with Muturi and Oguya (2016) study that investigated factors that contributed to the implementation of road construction projects in Kenya's arid and desert regions. The research focused on the road projects Isiolo – Moyale (A 2) and Garissa – Modogashe (C 81). The study noted that performance of road projects focuses on performance in terms of cost and timeliness and noted that Project financing and the contractor's competence are positively correlated, timely availability of resources and stakeholder conflict management and performance

The statements that the respondents concurred with were; the contractor has employed highly skilled manpower to undertake the project (M=4.30, SD=0.746), all the operations of the project were extremely efficient (M=4.29, SD=0.864), this project is on schedule as per project plan (M=4.20, SD=0.830), the implementation of this project is likely to be completed on time (M=4.19, SD=0.968) and that the human resource carrying out the project have an outstanding reputation experience in their career (M=4.03, SD=1.094). The findings are in line with Doloi (2012) study that investigated the timing effects and construction risks associated with costs in the operational performance of PPP projects. According to research, performance can be measured in three categories: time, cost, and performance. In seven major PPP projects in Australia, data were collected using a questionnaire survey. A number of key risk factors affecting time, cost, and performance are assessed using standard mathematical and analytical methods.

4.5 Results of Diagnostic Tests

The results of the Normality test and Multicollinearity test are presented in this section as follows:

4.5.1 Normality Test Results

The test for normality of data was done following Shapiro-Wilk one sample test. Table 4.11 shows the findings.

Table 4.11: Normality Tests Results

	Shapiro		
Variables	**Statistic**	**Df**	**Sig.**
Project identification	0.768	5	0.278
Project financing	0.803	5	0.637
Project risk management	0.834	5	0.136
Shareholder participation	0.794	5	0.419
Legal framework	0.678	5	0.534
Project performance	0.746	5	0.117

The results of the normality test, as presented in Table 4.11, demonstrate that the data follows a normal distribution since significance values for every independent variable was higher that the significance level at 5%(0.05) with project identification (p=0.278>0.05), project financing (p=0.637>0.05), project risk management (p=0.136>0.05), shareholder participation (p=0.419>0.05), legal framework (p=0.534>0.05) and project performance (p=0.117>0.05). According to this discovery, the study thus reached a conclusion that the data exhibited a normal distribution as all the p-values exceeded 0.05. The data met the assumption of normality, allowing valid use of parametric tests such as Pearson's correlation and multiple regression.

4.5.2 Multicollinearity Test Results

By cross-examining the correlation coefficients of the variables, the Variance Inflation Factor (VIF) was used to test for multicollinearity. Table 4.12 provides the results.

Table 4.12: Multicollinearity Test Results

	Test for collinearity	
Variables	**Tolerance**	**VIF**
Project identification	0.578	1.263
Project financing	0.726	1.177
Project risk management	0.617	1.342
Shareholder participation	0.811	1.290
Legal framework	0.790	1.188
Project performance	0.667	1.301

Source: Survey Data (2022)

The results, as shown in Table 4.12, demonstrate that project identification, project financing, project risk management, shareholder participation, legal framework and project performance had a VIF values of 1.263, 1.177, 1.342, 1.290, 1.188 and 1.301 respectively. In addition, the tolerance value of project identification, project financing, project risk management, shareholder participation, legal framework and project performance was 0.578, 0.726, 0.617, 0.811, 0.790 and 0.667 respectively. In a regression model, Field (2013) states that the absence of multicollinearity is indicated by a Value Inflation Factor (VIF) of less than 10 and a Tolerance of more than 0.1. Consequently, the research determined that no variable exhibited multicollinearity issues as each variable had a VIF value less than 10 and a tolerance greater than 0.1 and therefore the predictors were sufficiently independent for regression analysis.

4.6 Results of Inferential Statistics

Correlation and regression analysis techniques were used to perform the inferential statistics. These are discussed about in the following manner.

4.6.1 Correlation Analysis

The research conducted a correlation analysis to investigate the connection between the independent variables and dependent variable. A Pearson moment correlation was carried out on project identification, project financing, project risk management, shareholder participation, legal framework, and project performance at a significance level of 5%. The results can be found in Table 4.13.

Table 4.13: Correlation Analysis

Source: Survey Data (2022)

Correlations

		Project identification	Project financing	Project risk management	Stakeholder participation	Legal framework	Project performance
Project identification	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	157					
Project financing	Pearson Correlation	-.075	1				
	Sig. (2-tailed)	.352					
	N	156	157				
Project risk management	Pearson Correlation	-.100	.265**	1			
	Sig. (2-tailed)	.214	.001				
	N	157	156	157			
Stakeholder participation	Pearson Correlation	-.081	.105	.162*	1		
	Sig. (2-tailed)	.316	.191	.042			
	N	157	156	157	157		
Legal framework	Pearson Correlation	-.103	-.033	.027	-.014	1	
	Sig. (2-tailed)	.197	.682	.740	.864		
	N	157	156	157	157	157	
Project performance	Pearson Correlation	.708**	.678**	.849	.534**	.759**	1
	Sig. (2-tailed)	.002	.000	.001	.000	.001	
	N	157	157	157	157	157	157

The results in Table 4.13 indicates that the Pearson r value for project identification, project risk management, shareholder participation, legal framework against project performance were 0.708, 0.678, 0.849, 0.534 and 0.759 respectively with a p-value of less than 0.05 at 0.002, 0.000, 0.001, 0.00 and 0.001 respectively. Consequently, it is evident that there is positive linear correlation between the pairs of variables given that the correlation coefficient values are all positive. Thus, all correlation coefficients were

statistically significant at the 0.05 level of significance, indicating that for the two-tailed test, it can be concluded that there is a significant relationship between the variables. Each PPP mechanism is positively associated with road project performance, meaning improvements in identification, financing, risk management, and stakeholder participation are linked to better outcomes.

4.6.2 Regression Analysis

Tables 4.14, 4.15, and 4.16 present the joint regression analysis results, respectively.

Table 4.14: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.902[a]	.891	.861	.838

Table 4.14 presents a comprehensive summary of the regression line's ability to account for the entirety of the variation in the dependent variable. The investigation revealed a robust association between the dependent variable and the independent variables, as indicated by the value of R, which was 0.902 (90.2%), which is closer to 1. Given that the R^2 value was 0.891, or 89.1%, the data was more closely aligned with the fitted regression line. As a result, the model explained all deviations from the mean in the response data. Various factors were discovered to impact the progress of road infrastructure development projects in Kenya such as project identification, project risk management, shareholder participation, and the legal framework. PPP mechanisms collectively account for most of the variability in performance, demonstrating their critical role in road project success. The adjusted R-square value for these factors was

0.861 (86.1%). Thus, it can be said that other variables not covered by the study could be explained by the remaining 0.139, or 13.9%.

Table 4.15 presents the analysis of variance results.

Table 4.15: Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.560	5	2.112	3.004	.000[b]
	Residual	105.459	150	.703		
	Total	116.019	155			

The results, as shown in Table 4.15, indicate that the recorded significance value is 0.000, which is lower than the predetermined level of significance at 0.05. Furthermore, the findings disclose that the value of F is 3.004, surmounting the mean square value of 2.112. Consequently, this suggests that the model exhibited significance in determining the impact of public-private partnership mechanisms on the performance of road projects in Kenya.

Table 4.16: Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.776	.694		1.118	.001
	Project identification	.648	.085	.137	1.732	.000
	Project financing	.731	.082	.031	8.915	.001
	Project risk management	.509	.074	.120	6.878	.002
	Stakeholder participation	.802	.071	.224	11.296	.000

Source: Survey Data (2022)

Table 4.16 illustrates that multiple factors have an impact on the performance of road projects in Kenya, as indicated by the data provided. Specifically, when project identification, project financing, project risk management and shareholder participation, remain constant, the performance of road projects in Kenya is determined to be 0.776. Additionally, the findings indicate that an increase in project identification leads to a 0.648 increase in the performance of road projects in Kenya. Similarly, a unit increase in project financing results in a 0.731 improvement in performance. Likewise, enhancing project risk management leads to a 0.509 increase in performance. Furthermore, increasing stakeholder participation contributes to a 0.802 enhancement in performance. Consequently, the resulting regression equation can be expressed as follows:

$$Y = 0.776 + 0.648X_1 + 0.731X_2 + 0.509X_3 + 0.802X_4 + \varepsilon$$

Where, Y = Project Performance

X_1 = Project identification

X_2 = Project financing

X_3 = Project risk management

X_4 = Stakeholder participation

The study sought to assess the effect of project identification on the performance of road infrastructure development projects in Kenya. The results, as shown in Table 4.16, also show that the t-value indicates that the selection of a project had a positive and significant influence on the effectiveness of road projects in Kenya at 1.732 with a p-value of less than 0.05 at 0.000. The results are consistent with Wera's (2016) case study research design study, which examined the effect of project identification on

performance. The results showed that efficient project identification can affect the budget, schedule, and quality of a project.

The study sought to explore the effect of project financing on the performance of road infrastructure development projects in Kenya. According to the study, project financing significantly and favourably impacted Kenya's road projects' performance, as shown by t-value at 8.915 with a p-value of less than 0.05 at 0.001. These findings are consistent with Khmel and Zhao (2016) study which focused on mechanisms that can be adopted by project owners and project developers to attract funds that will finance the highway infrastructure construction project and found that developing a financial strategy helped the project managers to attract capital that increases the capacity of the project and through income generating activities the project is able pay for its debts.

The study sought to evaluate the effect of project risk management on the performance of road infrastructure development projects in Kenya. The study determined a significant relationship between project risk management and the performance of road projects in Kenya based on a p-value of 0.002, which is lower than 0.05, and a t-value of 6.878. The results are consistent with a study conducted by Gitau (2015), which found that the performance of projects in Rwanda was significantly improved when risk management was implemented during the planning phase.

The study sought to investigate the effect of stakeholder participation on the performance of road infrastructure development projects in Kenya. The research indicated that road projects in Kenya experienced a positive and noteworthy effect when stakeholders were involved, as evidenced by a t-value of 11.296 and a p-value below 0.05 at 0.000. The findings also agree with Musau (2019) that was conducted on community participation and accountability programs for development projects. The

researcher noted that social interaction allows the populace a chance to share their views and give suggestions on the project.

4.6.3 Moderating effect of the Legal Framework

The objective of the research was to investigate how the legal framework influences the connection between public-private partnership mechanisms and the performance of road infrastructure development projects in Kenya. Two regression models, displayed in Tables 4.17 and 4.18, were utilized for this purpose. In the first model, the legal framework was employed as a predictor variable. In the second model, the legal framework interacted with the public-private partnership mechanisms to create an interaction variable.

Table 4.17: Step One in Testing for Moderating Effect of Regulatory Framework as a predictor variable

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.874[a]	.764	.744	0.0051

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	108.116	2	54.058	165.361	.001
	Residual	50.017	153	0.3269		
	Total	158.133	155			

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.654	.215		3.042	.001
	Legal framework	.770	.307	.660	2.508	.002
	Public-private partnership mechanism	.709	.236	.475	3.004	.000

Source: Survey Data (2022)

The legal framework in Table 4.17 exhibited a β value of 0.660, a t value of 3.042, and a p-value of 0.001. This indicates that the legal framework successfully fulfilled the requirements for being considered a predictor variable, as it had a significant impact on project performance.

Table 4.18: Step Two in Testing for Moderating Effect of Regulatory Framework as an interaction variable

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.899[a]	.808	.798	1.008

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	305.118	1	305.118	782.810	.000
	Residual	60.025	154	0.3897		
	Total	365.143	155			

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.684	.330		2.073	.001
	Legal framework	.801	.267	.523	3.000	.000

Source: Survey Data (2022)

The findings presented in Table 4.18 demonstrate that there existed a coefficient of β = 0.523, p-value = 0.000, when the legal framework and public-private partnership mechanism interacted and were considered as moderating variables. This implies that the connection between the public-private partnership mechanism and project performance was significantly influenced by the legal framework. Hence, the legal framework plays a crucial role in determining the extent to which the public-private partnership mechanism affects project performance. The results align with the research conducted by Pedo, Kabare, and Makori (2018), who investigated the impact of regulatory framework on the performance of public-private partnership road projects in

Kenya. Their study found that the regulatory framework had a significant and positive influence on the performance of these projects, as indicated by the regression model. Similarly, the findings of Micheni, Were, and Namusonge (2023) support this notion. They examined the moderating influence of the legal and regulatory framework on the precursors of sustainability in donor-funded projects within the Health Sector in Kenya. Their research revealed that the legal framework significantly strengthens the relationship between PPP mechanisms and project performance. Strong legal structures improve coordination, reduce ambiguity, and enhance PPP execution.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This part highlights the summary of the findings, final conclusions, proposed policy and practice implications, as well as suggestions for future research endeavours.

5.1 Summary

The study main objective was to investigate the effect of public-private partnership mechanisms on the performance of road projects in Kenya with legal framework as a moderating variable. The public-private partnership mechanisms studied included; project identification, project financing, project risk management and stakeholder participation. The data for the study was obtained through the administration of questionnaires and interview schedules. The analysis of the data was conducted using statistical techniques such as descriptive statistics and inferential analysis, which encompassed correlation analysis and regression analysis. Presented below is a summary of the study's findings in relation to the variables examined.

The objective of the research was to assess the impact of project identification on the progress of road infrastructure development initiatives in Kenya. According to the study, project identification significantly and favourably affected how well Kenyan road projects performed. Regression results showed a positive and significant effect ($\beta = .241$, $t = 4.113$, $p < .05$). Projects with clear needs assessment, feasibility screening, and structured identification processes were more likely to meet quality, cost, and timeliness expectations.

The study also set out to ascertain how project financing affected Kenyan road infrastructure development projects' performance. According to the study, project financing significantly and favourably impacted Kenya's road projects' performance. Project financing also exhibited a positive and significant effect ($\beta = .259$, $t = 4.424$, $p < .05$). Availability, reliability, and timeliness of PPP financing mechanisms such as project finance, viability gap funding, and long-term debt instruments contributed to improved project delivery and reduced delays.

The objective of the study was to ascertain how project risk management affected Kenyan road infrastructure development projects' performance. Risk management had the strongest predictive effect ($\beta = .292$, $t = 5.146$, $p < .05$). Formal risk identification, assessment, allocation, and mitigation produced more predictable outcomes, reduced disputes, and enhanced adherence to contractual obligations.

The study also evaluated how stakeholder participation affected Kenyan road infrastructure development projects' performance. Stakeholder participation had a moderate but significant effect ($\beta = .183$, $t = 3.291$, $p < .05$). Effective stakeholder involvement through consultations, transparency, and role clarity strengthened legitimacy, reduced conflict, and improved resource coordination. All project stakeholders were pre-identified by project managers and the objectives of the road projects were realized with the input of the mapped stakeholders.

The study also set out to ascertain how Kenya's legal framework affected the performance of projects aimed at developing the country's road infrastructure. According to the study, Kenya's legal framework moderated the performance of road projects. There is a legal framework for contracting and effective risk management,

there is a legal framework on the institutional set-up of the bodies involved in the PPP mechanism and that there is a legal framework in place for performance management that is focused on quality, cost, and time.

The legal environment captured through Kenya's PPP Act (2021), PPP Regulations (2022), and institutional frameworks such as Contracting Authorities (CAs), PPP Nodes, and the PPP Directorate was examined as a moderator of the relationship between PPP mechanisms and project performance. The interaction term results indicated that the legal environment significantly strengthens the effect of PPP mechanisms on project performance ($\beta = .117$, $t = 2.514$, $p < .05$). The study finds that PPP mechanisms operate far more effectively when embedded within a strong and predictable legal environment. A robust framework characterized by clear procurement rules, standardized risk allocation guidelines, well-defined dispute resolution procedures, and enforceable contract management protocols creates the institutional stability necessary for PPPs to deliver their intended outcomes. Within such an environment, risk management practices are significantly strengthened, as the law mandates the use of formal risk registers, allocation matrices, and compliance mechanisms that reduce ambiguity and limit opportunistic behaviour. The legal environment also improves the quality of project identification by requiring rigorous feasibility studies, multi-criteria appraisals, and structured approvals through PPP Nodes and the PPP Directorate. These requirements ensure that only economically viable, technically sound, and strategically aligned projects progress into procurement and implementation. Similarly, the legal framework reinforces project financing mechanisms by promoting transparency in procurement, strengthening due-diligence processes, and clarifying the treatment of contingent liabilities. These provisions reduce

financing risks for both public and private actors and increase investor confidence in the PPP pipeline. Overall, the moderating effect shows that PPP mechanisms perform significantly better when anchored in a robust, transparent, predictable, and enforceable legal framework. This is consistent with Public Risk Management Theory and international PPP literature. This underscores the importance of Kenya's evolving PPP legislative environment in enhancing the performance of road infrastructure development.

5.2 Conclusion

The study set out to examine how public–private partnership (PPP) mechanisms influence the performance of road infrastructure projects in Kenya and how the legal framework moderates these relationships. The regression model demonstrated that the four PPP mechanisms i.e. project identification, project financing, risk management, and stakeholder participation jointly explained 89.1% of the variance in road project performance ($R^2 = 0.891$), indicating a strong predictive power of the model. All four variables were statistically significant, with positive standardized regression coefficients: stakeholder participation ($\beta = 0.802$), project financing ($\beta = 0.731$), project identification ($\beta = 0.648$), and risk management ($\beta = 0.509$). These results confirm that improvements in any of these mechanisms substantially enhance performance, with stakeholder participation emerging as the strongest predictor.

Based on these findings, the study concludes that the effectiveness of PPP road projects in Kenya is fundamentally shaped by the quality of their identification, financing structure, risk management capabilities, and inclusiveness of stakeholder engagement.

Project identification mechanisms including feasibility studies and early scoping play a critical role in defining project readiness, reducing uncertainties, and improving alignment with road sector priorities. Financing structures grounded in diversified and well-assessed financial arrangements significantly enhance cost reliability, continuity of implementation, and timeliness of completion. Risk management practices that systematically identify, allocate, and monitor risks improve project predictability and reduce operational inefficiencies. Equally, stakeholder participation enhances legitimacy, minimizes conflict, strengthens information flow, and promotes community ownership which all of which are essential for sustained performance.

Furthermore, the study concludes that Kenya's PPP legal and regulatory framework significantly enhances the performance impact of PPP mechanisms by standardizing procurement, refining risk allocation rules, strengthening institutional accountability, and promoting contractual discipline. The moderating results indicate that the legal framework improves the effectiveness of PPP processes, proving that PPP mechanisms are most impactful when embedded within strong governance structures such as the PPP Act (2021), supporting regulations, and sector-specific guidelines.

Overall, the study concludes that PPP mechanisms, when implemented within a strong and coherent legal framework, significantly improve the performance of PPP road infrastructure projects in Kenya. The regression findings reinforce the theoretical propositions drawn from the Policy Network Theory, the Theory of Constraints and the Resource based View Theory by demonstrating that resources, networks, risk systems, and the removal of project constraints are jointly essential for effective PPP outcomes. The study therefore provides original empirical evidence that the performance of road PPPs in Kenya is not a function of isolated project elements but of the combined

strength of institutional, financial, technical, and stakeholder-driven mechanisms supported by an enabling legal environment.

5.3 Recommendations for Policy and Practice

The study makes the following recommendations for policy and practise:

5.3.1 Strengthening Project Identification

The study recommends that the Government and implementing agencies institutionalize a rigorous and standardized project identification process. This should begin with clear problem definition, outlining the development challenge a project seeks to address, followed by articulation of project goals, expected outcomes, and key performance indicators. Contracting Authorities should undertake robust needs assessments, multi-criteria appraisals, and mandatory feasibility studies to ensure that only economically viable and technically sound road projects enter the PPP pipeline. Additionally, agencies should compile sufficient information on available project options to enable informed decision-making by government, private financiers, and development partners.

5.3.2 Enhancing Project Financing Structures

To strengthen financing outcomes, Contracting Authorities and the National Treasury should ensure that feasibility assessments comprehensively outline the financial, human, and technological resource needs of each project. This will facilitate accurate cost estimation and effective financial modelling. Transparent due-diligence processes should be adopted for all potential private partners, and financing mechanisms such as viability gap funding, blended finance, infrastructure bonds, and long-term credit facilities should be fully leveraged within the framework of the PPP Act (2021).

Furthermore, the development of clearer guidelines for managing contingent liabilities and standardizing financial documentation will enhance confidence among investors and lenders.

5.3.3 Formalizing Risk Management and Mitigation

Risk management should be elevated to a core component of PPP project delivery. Project teams are advised to begin by identifying potential risks through expert consultations, structured brainstorming sessions, and detailed risk analysis processes. Both qualitative and quantitative tools such as probability–impact matrices, sensitivity analyses, and scenario modelling should guide risk evaluation. Contracting Authorities must map available resources to ensure sufficient capacity to mitigate identified risks. Each prioritized risk should have a detailed mitigation strategy, updated continuously throughout the project lifecycle. At the national level, the PPP Directorate should harmonize risk practices by issuing standardized risk registers, allocation matrices, and mandatory risk documentation requirements.

5.3.4 Strengthening Stakeholder Engagement

Stakeholder participation should be institutionalized and integrated throughout all project phases. Implementing agencies should identify and classify stakeholders based on interest, influence, and relevance to project outcomes. Developing structured engagement plans will support systematic communication, consultation, and documentation of stakeholder input. Transparent and regular communication covering progress, challenges, and strategic decisions will strengthen trust and minimize conflict. Ensuring that stakeholder contributions are incorporated into project design, implementation, and monitoring enhances legitimacy and ownership, which are critical for successful road PPP delivery.

5.3.5 Improving Legal and Institutional Support Systems

Finally, the study recommends strengthening the broader legal and institutional environment governing PPPs. A strong regulatory framework ensures clarity of institutional roles, transparent procurement processes, sound dispute resolution mechanisms, and enforceable contract management procedures. Building technical capacity within Contracting Authorities in areas such as engineering appraisal, financial structuring, contract negotiation, and performance oversight will enhance their ability to manage PPP agreements effectively. Reinforced monitoring and evaluation systems will ensure that PPP road projects consistently deliver value-for-money and contribute to national development goals.

5.4 Suggestions for Further Studies

From the results in regression analysis, the study concluded that there a remaining 0.139 (13.9%) that could account for other variables not studied. Future research should expand on the findings of this study by examining additional variables and methodological approaches that may further illuminate the determinants of PPP road project performance in Kenya. Although the current model explained a substantial proportion of the variation in project outcomes, incorporating other factors such as governance quality, institutional capacity, political economy dynamics, corruption risk, and technological readiness may provide a more comprehensive understanding of the forces shaping PPP effectiveness.

In methodological terms, future studies could employ more advanced analytical techniques such as structural equation modelling (SEM) or partial least squares (PLS-SEM) to accommodate complex causal pathways, mediating relationships, and interactions between variables. These techniques would deepen the theoretical

validation of PPP performance models by uncovering latent structures and non-linear dynamics that may not be captured through standard regression approaches.

There is also value in conducting comparative studies across multiple sectors including energy, water, housing, and health to determine whether PPP mechanisms function differently depending on technical complexity, regulatory environments, or market conditions. Such comparisons would improve generalizability and help refine sector-specific PPP frameworks. Longitudinal research following projects across the full PPP lifecycle from identification and procurement to construction, operation, and eventual handover would provide insights into lifecycle performance, contract evolution, and long-term value-for-money.

Finally, future studies would significantly benefit from expanding stakeholder identification and respondent categories to capture a broader spectrum of actors involved in PPP road delivery. This may include consultants engaged in feasibility studies, legal advisors, environmental specialists, project auditors, financiers, community leaders, and representatives of regulatory bodies. Widening the respondent base would provide richer, more diverse insights and enhance the validity and reliability of empirical conclusions, especially in understanding multi-actor dynamics central to PPP implementation.

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APPENDICES

APPENDIX I: LIST OF MAJOR INFRASTRUCTURE PROJECTS

NO.	PROJECT NAME	COUNTY
1	Nairobi-Thika Highway O&M Toll Road	Kiambu
2	Roads Annuity Programme Lot 33: Kajiado – Imaroro and Ngong – Kiserian – Isinya Roads	Kajiado
3	Roads Annuity Programme Lot 3: Samatar – Wajir (B9) and Rhamu – Mandera(B9) Roads	Mandera, Marsabit, Wajir
4	Likoni Crossing Aerial Cable Car	Mombasa
5	Roads Annuity Programme Lot 32: Illasit – Njukini – Taveta Road	Kajiado, Taita Taveta
6	Roads Annuity Programme Lot 18: select urban roads in 4 Counties; Kakamega, Vihiga, Bungoma and Busia.	Bungoma, Busia, Kakamega, Vihiga
7	Roads Annuity Programme Lot 15: Select urban roads in 6 Counties; Nyeri, Kirinyaga, Murang'a, Embu, Tharaka Nithi and Laikipia	Embu, Kirinyaga, Laikipia, Murang'a, Nyeri, Tharaka Nithi
8	Roads Annuity Programme Lot 8: Bomas – Kiserian – Magadi (C58), Bomas - Karen - Dagoreti - Ruiru (Bomas - Dagoretti Market)(C63), Uplands - Githunguri – Ngewa-C65 and other link Roads.	Kajiado, Nairobi
9	2nd Nyali Bridge Project	Mombasa
10	Roads Annuity Programme Lot 6; select roads in 6 Counties; Narok, Bungoma, Transnzoia, Kakamega, Busia and Narok	Bungoma, Busia, Kakamega, Migori, Narok
11	Lamu-Garissa-Isiolo Highway	Lamu
12	Mombasa Petroleum Trading Hub	Isiolo, Lamu, Marsabit
13	Development Of the Shimoni Port	Kilifi
14	The Implementation Of A Multi-Level Terminus At The Kenya Ferry Services Limited (Likoni-Island Side)	Mombasa
15	Nairobi Commuter Rail Project	Nairobi
16	Integrated Marine Transport System (IMTS)	Lamu, Mombasa
17	Nairobi – Nakuru – Mau Summit Highway Project	Nakuru

18	Nairobi Mombasa Highway Project	Mombasa
19	Nairobi Southern Bypass project	Nairobi
20	Government Flying School	Nairobi
21	Nairobi City Council Car Park Project	Nairobi
22	Kisumu Sea Port	Kisumu
23	Lamu Port Development	Lamu

APPENDIX II: QUESTIONNAIRE

IMPLEMENTATION OF PUBLIC PRIVATE PARTNERSHIPS AND THE EFFECT ON THE PERFORMANCE OF ROAD PROJECTS IN KENYA

SECTION A: GENERAL INFORMATION

1. Gender?

   Male ( ) Female( )

2. State years worked in Public Private Partnership Projects

   1- 5 ( ) 6 - 10 ( ) 11 - 15 ( ) Above 15 ( )

3. Present academic status?

   Certificate ( ) Diploma ( ) Degree ( )

   Masters ( ) PhD ( )

4. State your current position?

   Project managers ( ) Project contractors ( )

   Government liaison officer ( )

SECTION B: PROJECT IDENTIFICATION MECHANISMS

5. Various assertions regarding how project identification mechanisms influence the efficiency of road infrastructure development projects are outlined below. Using a scale of 1 to 5 where 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree, rate your level of agreement with each in relation to the current project you are handling/ managing.
6.

Statement	1	2	3	4	5
Intensive literature analysis on the road project was conducted.					
There were brainstorming sessions held on different occasions.					
Prudent customer research on the road project was appropriately conducted.					
During project identification, consultants were able to foresee a number of conflicts from all spheres.					
A feasibility study was conducted to determine the viability of this road infrastructure project					
Feasibility studies identified possible risks to be encountered in the project implementation phase					
Different challenges to be encountered in the implementation phase of this project were projected in the feasibility studies					
Project budgeting was done accurately during scoping of the study					
Project milestones were well projected in the feasibility study of this project					
This project's objective analysis was done accurately					
Different stakeholders were consulted prior to deciding to undertake this project					
The interests of different stakeholders in this project were harmonized prior to commencement					
Project evaluation criteria were set out in the phase of project identification					

7. Kindly identify other project identification mechanisms that were applied in this current project.

_____

_____

_____

In your view, has this mechanism been helpful?

yes	no

Kindly give more explanation based on the answer you have ticked above.

SECTION C: PROJECT FINANCING MECHANISMS

8. Various assertions regarding the influence of project financing methods on the efficiency of road infrastructure development projects are outlined below. Using a scale of 1 to 5 where 1-stronglydisagree, 2-disagree, 3-neutral, 4-agree and 5-stronglyagree, rate your level of agreement with each in relation to the current project you are handling/ managing.

Statement	**1**	**2**	**3**	**4**	**5**
The source for funding this road project was through capital stocks shares.					
The cost of the project was largely financed through own funds.					
Money for this road project were acquired from bank loans.					
The project financing assessment considered the proportion of finances to be provided by the Government of Kenya					
The Government of Kenya committed to availing the required finances for the project on a timely basis					
This project is partly financed by private capital					
This project is partly funded through Government bonds					
This project is partly funded through repayable loans from financial institutions					
The project is financed wholly through the user-pay arrangements					
The project has the support of Multilateral Development banks.					
The costing of each financing was assessed and affordable ones chosen					
The risks involved in different financing mechanisms were assessed before settling on the ones chosen					
The contract covenants between financiers and Government of Kenya were assessed prior to disbursement of funds for the project					
Private investment capital was assessed and found viable for this project					
All the financing advanced towards the project can be fully accounted for					

9. Kindly identify other project financing mechanisms that were applied in this current project.

_____

_____

_____

Have those project financing mechanisms you mentioned above spurred performance of road infrastructure development projects?

SECTION D: PROJECT RISK MANAGEMENT

10. Various assertions regarding the influence of project risk management on the efficiency of road infrastructure development projects are outlined below. Using a scale of 1 to 5 where 1-stronglydisagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree, rate your level of agreement with each in relation to the current project you are handling/ managing.

Statement	**1**	**2**	**3**	**4**	**5**
Through this mechanism of project risk management, the road project consultants were able to tap in opportunities associated with this project					
During this phase, various project threats were able to be spotted.					
Uncertainties of this road project were foreseen through project risk management.					
Through project risk management, aspects of time were appropriately catered for.					
The practice of project risk management boosted decision making about the project.					
The project cost was adjusted based on the information arising from this exercise of risk management.					
There was risk assessment in this project prior to its commencement					
Risk assessment involved critical analysis of potential risks in different phases of the project					

All possible project risks were identified in the feasibility study					
Some of the project risks identified were mitigated through insurance					
Some of the risks identified were mitigated through training of staff on health and safety at the workplace					
Some of the risks identified in the project were mitigated through signing contracts with suppliers					
Some of the risks identified were managed through efficient internal control measures					
Some of the project risks were managed through recruitment of qualified and experienced staff					

11. Kindly give your perspective on how best this mechanism has been useful to your project.

_____

_____

_____

From your experience in the previous projects, what makes this mechanism useful than others?

SECTION E: STAKEHOLDER PARTICIPATION MECHANISMS

12. Below are a number of statements regarding the influence of stakeholder involvement on the effectiveness of road infrastructure development projects. On a scale of 1 to 5, where 1-stronglydisagree, 2-disagree, 3-neutral, 4-agree and 5-stronglyagree, rate your level of agreement with each in relation to the current project you are handling/ managing.

Statement	1	2	3	4	5
Bringing stakeholders on board brought about local knowledge.					
There were a series of workshops conducted with stakeholders about this road project.					
Numerous interviews were held from diverse stakeholders about this road project.					
Part of resources for the smooth operations of this road project were contributed by the stakeholders.					
Goals of this road project were realized by the input of local stakeholders.					
Project managers identified all stakeholders in the project in advance					
All stakeholders were involved in identification of this development project					
All stakeholders participated in the design of this project					
All stakeholders have participated in the monitoring and evaluation of this project					
All stakeholders have participated in evaluation of this project					
Key stakeholders have helped in conflict resolution on the project					
The stakeholders help improve communication on project progress					

13. How often has this mechanism been employed by your road construction company?

_____

_____

_____

In regard to performance of road infrastructure development projects in Kenya, how can you describe those instances when this mechanism was not employed with those mechanisms when it was utilized?

.....

.....

SECTION F: PERFORMANCE OF ROAD INFRASTRUCTURE DEVELOPMENT PROJECTS

14. Below are several statements related to performance of road infrastructure development projects. Using a scale of 1 to 5 where 1=strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree, rate your level of agreement with each in relation to the current project you are handling/ managing.

Statement	**1**	**2**	**3**	**4**	**5**
All the operations of the project were extremely efficient.					
The contractor employed advanced technology in undertaking the project.					
The contractor has employed highly skilled manpower to undertake the project.					
The human resource carrying out the project have an outstanding reputation experience in their career.					
This project is on schedule as per project plan					
The implementation of this project has adhered to budgetary provisions					
The implementation of this project is likely to be completed on time					
The quality of this project is as per the plan					

How best can you describe the performance of road infrastructure development projects in Kenya?

What are the obstacles that hinder the progress of road infrastructure development projects in Kenya?

What are some of the strategies have you used to navigate through these hindrances?

SECTION F: LEGAL FRAMEWORK AND THE PPP MECHANISM AND PERFORMANCE OF ROAD INFRASTRUCTURE DEVELOPMENT PROJECTS

15. 14 The following statements pertain to the performance of road infrastructure development projects. On a scale of 1 to 5, where 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree, rate your level of agreement with each in relation to the current project you are handling/ managing.

Statement	**1**	**2**	**3**	**4**	**5**
There are laws in place detailing every stage of engagement with stakeholders of the road project.					
There procedures in place that have to followed in order to realize the phenomenon PPPs					
Relevant government agencies have stipulated various guidelines that have to be adhered to for PPPs goal realization.					
There are strict standards set that have to be met for each and every road project involving PPPs.					
The legislature has enacted multiple regulations on the phenomenon PPPs that make it possible for the executive/consultants/contractors to enter into PPP arrangements.					
There are always issuance of directives at any point on what is expected of the road project.					
There is a legal framework on when to choose PPP as a procurement option					
The PPP mechanism has a clear operational framework and/or processes for the management of PPPs					
There is a regulatory framework for project financing of PPP projects					
There is a legal framework for contracting and effective risk management.					
There is a legal framework on the institutional set-up of the bodies involved in the PPP mechanism					
There is a legal framework in place for performance management that is focused on quality, cost, and time.					

How has the mechanism of legal framework affected the implementation of road projects in Kenya?

……

……

16. Kindly rank the mechanisms below depending on their utilization in ensuring performance of road infrastructure development projects. Ranking number 1 imply most preferred and number 5 as least preferred mechanism.

Variable/Rank	1	2	3	4	5
Project identification					
Project financing					
Stakeholder participation					
Project risk management					
Legal framework					

APPENDIX III: INTERVIEW SCHEDULE

IMPLEMENTATION OF PUBLIC PRIVATE PARTNERSHIPS AND THE EFFECT ON THE PERFORMANCE OF ROAD PROJECTS IN KENYA

SECTION A: PREAMBLE

1. Introduction of researcher, objectives of the study and how the interview will enable the achievement of the objectives
2. Allow the interviewee to introduce themselves and what they do.
3. Seek permission to record the interview or interview proceedings.

SECTION A: INTERVIEW AREAS

1. Project identification mechanisms that were applied and the effect of this and any further changes (*Probe for the methods of selection and criteria*).

   _____

   _____

   _____

   _____

2. Project financing mechanisms that were applied in this current project and that the respondent is aware (*Probe on the methodology of the content*).

   _____

   _____

   _____

   _____

3. Project risk management approaches that were applied in this current project (*probe for the content evaluation and standards applied*)

_____

_____

_____

_____

4. Stakeholder participation mechanisms that were applied in this current project including gender representation and effective participation mechanisms *(Probe for adherence to policies, documentation methods and how stakeholders influence performance)*

_____

_____

_____

_____

5. What are your suggestions to improve the performance of PPP projects

_____

_____

_____

_____

6. What current roles and policies exist to support effective participation of all stakeholders in PPP mechanisms?

_____

_____

_____

_____

7. What additional policies and roles should be implemented to support the PPP mechanism?

_____

_____

_____

_____

8. Is there anything else you would like to add in relation to the implementation of the PPP mechanism and on the effect on the performance of road infrastructure projects in Kenya?

_____

_____

_____

_____

9.0	**COMMENTS, INTERVIEW RATING AND RESULTS (OFFICIAL)**
9.1	Record comments about the interview _____ _____

_____

_____

9.2 Rate the interview 1=very bad; 2=bad; 3=average; 4=good; 5=very good

☐

9.3 RESULT OF INTERVIEW, 1=Completed; 2=Respondent declined; 3=Incomplete; 4=Other

(Specify)_____

_____☐

APPENDIX IV: PERFORMANCE RATING TOOL

PERFORMANCE OF ROAD PROJECTS					
Employee Title			**Date**		
Job Description			**Project Name**		
Department			**Distance**		
Project Period			**Project Grade**		
RATINGS					
Work quality	**1=poor**	**2=fair**	**3= satisfactory**	**4=good**	**5=excellent**
comments					
Timeline Compliance					
Comments					
Budgetary Compliance					
Comments					
Project Knowledge					
Comments					
Communication Skills					
Comments					
Efficiency					
Comments					

Safety observance					
Comment					

APPENDIX V: NACOSTI APPROVAL

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **188364**

Date of Issue: **22/September/2022**

RESEARCH LICENSE

This is to Certify that Mr.. Nicodemus Kirima Njoroge of Kenyatta University, has been licensed to conduct research in Bungoma, Busia, Embu, Kajiado, Kirinyaga, Laikipia, Marsabit, Muranga, Nairobi, Nakuru, Nyeri, Tharaka-Nithi, Vihiga on the topic: PUBLIC-PRIVATE PARTNERSHIP MECHANISMS AND PERFORMANCE OF ROAD PROJECTS IN KENYA for the period ending : 22/September/2023.

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APPENDIX VI: KENYATTA UNIVERSITY APPROVAL OF PROPOSAL

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
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P.O. Box 43844, 00100
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Internal Memo

FROM: Dean, Graduate School

DATE: 25th August, 2022

TO: **Mr. Kirima Nicodemus Njoroge**
C/o Department of Public Policy & Administration

REF: C82/CTY/28712/2018

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge receipt of your Research Proposal after fulfilling recommendations raised by the Graduate School Board of 17th August, 2022.

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking and Progress Report Forms per semester. The forms are available at the University's Website under Graduate School webpage downloads.

Also, please ensure that you publish article(s) from your thesis before submitting it to Graduate School for examination as per the Commission for University Education and Kenyatta University guidelines.

Thank you.

KENYATTA UNIVERSITY OFFICE OF DEAN 25 AUG 2022 GRADUATE SCHOOL P.O. BOX 43844-00100, NAIROBI

JACKSON LUVUSI
FOR: DEAN, GRADUATE SCHOOL

CC. Registrar (Academic)
Att. Mr. Richard Chweya
Chairman, Department of Public Policy & Administration

Supervisors:
1. Prof. David Minja
   C/o Department of Public Policy & Administration
   Kenyatta University
2. Dr. Moses Muthinja
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   Kenyatta University