EFFECT OF PUBLIC PRIVATE PARTNERSHIP ON ROAD INFRASTRUCTURE DEVELOPMENT IN KENYA

BY

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DECLARATION

This Research Project is my original work and has not been submitted for examination in any other University.

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This Research Project has been submitted for examination with my approval as University Supervisor.

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DEDICATION

This project is dedicated to my parents, Henry & Anne Kiplagat, wife, Annette Asenwa, angels

Jayden & Janelle for their prayers, unwavering support and encouragement during my studies.

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I thank the God the Almighty for the strength, knowledge and wisdom bestowed on me during my studies.

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ABSTRACT

The growing necessity to provide a set of infrastructures (such as schools, hospitals, roads and railways) required by both the society and the economical agents, along with the budgetary constraints to reduce the public debt, has resulted into govern The growing need to avail infrastructures (such as schools, hospitals, roads and railways) required by both the populace and the economic agents, along with the resource constraints to reduce the national debt, has resulted into government's seeking private sector participation in provision of these infrastructures. The Public Private Partnership (PPP) depicts a new contractual arrangement in which the public interest of getting the value for money to maximum level goes in tandem in with the private sector goal which is to obtain the maximum profit possible. The aim of this study was to analyze the effect of Public and Private Partnership on road infrastructure development in Kenya. The study was therefore aimed at answering the question as to whether the adoption of PPPs has impacted on road infrastructure development in Kenya. Transaction costs theory, agency theory and exchange theory were the anchor theories in the research. The research design adopted in the study was descriptive. The population of the research incorporated all the infrastructure projects undertaken in Kenya from 2007 to 2017. There were 185 road construction projects implemented within the period of study. Data used in the study was from secondary sources sourced from the National treasury on infrastructure projects, State Department of Infrastructure - Kenya National Highways Authority and from KNBS. The analysis of the data was done by both descriptive and inferential statistics were used to analyze. The presentation of the data analyzed was in tables' format. The results of the correlation analysis revealed that road infrastructure development was positively associated with Cost of financing road infrastructure projects using PPP where $r = 0.752$ and a level significance of 0.008 implying an indication that it was significant statistically with p value < 0.05. The findings also revealed correlation being positive on road infrastructure development and return on investment since $r = 0.373$ and level significance of 0.059, an indication that it was statistically significant. The correlation analysis finally revealed that road infrastructure development had a positive relation with length of completed roads in kilometers with $r = 0.270$ and 0.022 significance level. Findings from showed that The coefficient of determination through regression analysis showed that 58.9% of the disparities on road infrastructure development can be explained by Cost of financing road infrastructure projects using PPP, return on investment and length of completed roads in kilometers. The remaining 41.1% implies that other variables not analyzed in this study were responsible for them. Since R square and adjusted R were above average, this implies that the model can explain such variation. This indicates that the tested variables were significant in explaining the variation in road infrastructure development in Kenya. The study concluded that cost of financing road infrastructure projects using PPP is a major contributor to road infrastructure development in Kenya. This was based on the observation that it had a high correlation with road infrastructure development. The study also recommended that in the selection of PPP partners, the government should consider the cost of financing through negotiations and the duration for financing. This will help in reducing the cost of PPP while promoting development. It was lastly recommended that a study be done on determinants of the PPP choice to which this study did not cover.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The growing need to avail infrastructures (such as schools, hospitals, roads and railways) required by both the populace and the economic agents, along with the resource constraints to reduce the national debt, has resulted into government's seeking private sector involvement to join hands in the provision of such infrastructures (OECD 2008). The strategy is referred as Public-Private Partnership, since it is aimed at bringing the interests of both the public and private sector together. The Public Private Partnerships, also known as P3 or PPP, have been implemented widely globally in countries as such as Canada UK, Chile, Spain, China, India, among many others (Magro & Bartolome, 2010).

PPP depicts a new contractual arrangement whereby the interest of the public in getting value for money to maximum level goes in tandem with the goal of private sector aimed at obtaining profit maximum possible level (Loosemore, 2007). PPP has been defined as an institutional co-operation amongst public and private sectors aimed at increasing effectiveness and efficiency in delivery of public services (Hodge and Greve, 2005) defined. PPP is a contractual agreement that involves the players in the private sector for provision of services to the public through a partnership method where responsibility of delivering services, is shared jointly amongst the private and public sectors, whereby they bring on board to the enterprise skills that complement each other, Hayllar (2010). According to Ham and Koppenjan (2001), PPP is a form of co-operation amongst actors in private and public sectors where jointly they share risks, resources and costs in the provision of services and development of products.

Globally, PPP arrangements often are pursued so as to hasten the execution of projects that have high priority through use of latest technologies normally not present in standardized procurement processes of the public nature. (Beh 2010)

1.1.1 Public Private Partnerships

Governments lately use PPP's as a technique in closing the deficits in infrastructure gap deficits since it gives governments numerous benefits in trying to improve the efficiency of their operations

or sort out infrastructure shortages (Grimsey & Lewis, 2004). Private sector association in financing and development of public facilities and services, have improved in the past decade significantly. The approach to such PPPs, continue to be advanced so as to bring private and public players together in a bid to share the rewards & risks (Li, Akintoye, Edwards & Hard castle, 2005).

PPP framework is the association whereby the private and public sectors each bring their complementary talents and skills to a project, with responsibilities of different levels and involvement, with the aim of efficiently providing public services (Chan, Lam, Chan, Cheung & Ke, 2010). PPP characteristically consist of voluntary, enduring engagements that encompass substantial levels of joint decision making and resource sharing (Smith & Wohlstetter, 2006). Receiving value for money through the adoption of PPP, is a major element especially from the taxpayers" perspective (Chan et al., 2010).

The desire of the government's to sort out constraints in its capacity to providing facilities and services has made it adopt the PPP model whereby they can harness managerial skills from the private sector hence increasing effectiveness, efficiency and quality in the delivery of services (Li et al., 2005). Private sector without discriminating on the public facilities and services to offer may undertake services of simple nature based on the usage by the public and even ultimately owning and operating the public facilities as they offer services (Li et al., 2005). It is extremely hard to group said partnerships in a consistent fashion as they are set in various types and sizes (Akintoye *et al.*, 2003).

1.1.2 Infrastructure Development
A single and direct definition of infrastructure does not exist since it is a term that is more than just roads or highways. For sure, it is a vast expression encompassing many sorts of facilities that enable an organization performance. The Royal Spanish Academy have defined infrastructure as a set of services or elements which are ideal for establishing and operationalizing an entity. Grimsey and Lewis (2004), postulate the definition of infrastructure by investment outcomes According to them, infrastructure is harder to define than to recognize. Infrastructure Investment is believed to meet services of basic nature to households and industry, main and major input to economic growth and activity respectively. In addition to the infrastructure role in the society,

there are two wide categories: Economical infrastructures; Road & rail transport, sewage treatments bridges, , telecommunications networks and Social infrastructures; health, education, recreational facilities, prisons and tourism (Loosemore, 2007)

Roads and Highways development are clearly assigned as infrastructures in the economic group. Such infrastructure is believed to boost the economy plus the industry of a nation and subsequently the society's welfare. Nonetheless, this classical thought is short of the essential viewpoint of their societys role, that is they are instruments that structure not only social territory but also economically (Magro & Bartolome, 2010). In this case therefore, the economy and society have become heavily reliant on the same. Transport plans are drawn by governments and aligned to the country's aspirations even though there is inadequacy of resources thus giving rise to the need for bringing on board players in the private sector through the PPP platform in a bid to offer the necessary skills and funding (Magro & Bartolome, 2010).

1.1.3 PPP's and Infrastructure Development

The PPP Unit is formed through Section 8 of the Public Private Partnership Act 2013 as a special purpose Unit within the Government of Kenya's (GOK) National Treasury. The main focus area is to serve as the technical arm of the PPP committee and secretariat, with the role of assessing and approving PPP projects in the country. Kenya's Africa Infrastructure Country Diagnostic (AICD) report estimates that, in order to address the deficit in country's infrastructure it will call for sustained expenditures of approximately 20% of GDP which in the next decade would be equivalent to 4 billion dollars each year (Republic of Kenya, 2013).

To achieve this goal, the Government of Kenya has been pursuing alternative mechanisms geared towards at sourcing additional funding, adopting lower-cost latest technologies, while giving priority to investments in infrastructure. In this case, the Government of Kenya (GOK) has made development in infrastructure through Public Private Partnerships (PPPs) a priority as a means through which it can help meet the major shortfalls in infrastructure development in the country. Lack of adequate infrastructure is one of the major constraints for growth and business in Kenya, by establishing PPP's, Government is able to fast track development goals through a joint effort.

Public private partnership unit at the National Treasury is mandated with ensuring that the PPP Act, 2013 is adhered to (The National Treasury, 2013).

This includes establishing and maintaining a database of PPP projects in Kenya, monitoring liabilities and Accounting/budgetary issues related to PPP projects. PPP ensures that public funds are freed for other projects and this leads to project books being debt free through off balance sheet transactions. The PPP act establishes a facilitation fund to cover Government subsidies, viability gap fund, and contingent liabilities when they mature, funds for project preparation and ensuring that the projects are attractive to the public sector (The National Treasury, 2013).

1.2 Research Problem

The purpose of infrastructural developments is important in socio economic growth because of their impact on social welfare and competitiveness of nations in developed and developing nations (Robert *et al*., 2014). Traditionally, governments use public budgets to develop infrastructure projects. However, the management expertise shortage in departments of government and the limitations of public capital have led in advancement of an alternate procurement model for running and developing infrastructural projects. The procurement model is termed as public private partnership approach. The model gears towards promoting the involvement of private sector players in the course of running infrastructure programs, including designing projects, financing, construction, operation and maintenance. In the recent past, the popularity of Public Private Partnership type infrastructure (PTI) projects has been increasing more so in countries that are developing.

The rationale behind the adoption of PPPs in infrastructural development is based on the assertion that PPPs have the potential to fill the infrastructure development gap by introducing private sector technology and innovation and also leveraging scarce public funding in order to provide better quality public services through improved operational efficiency. Improving the provision of quality social services and infrastructure through higher levels of efficiency contributes directly to poverty reduction and growth in the economy. Besides the adoption and use of PPP, there is a myth about PPPs and how they aid in improving delivery of services in the economy and is also argued

that since their impact is qualitative in nature, they may not be easily measurable (World Bank, 2009; Sagalyn 2007; Nzimakwe 2006).

Different studies have been done on PPP. Internationally, Nuwagaba (2013) studied PPPs and their effects on service delivery in Rwanda. The study revealed that PPP improves service delivery. Tolani (2013) carried out an examination on perceptions of risk and allocation preferences in Public-Private Partnerships-Nigeria. The results showed that the three most important risk factors in Nigeria are: construction time delay, construction cost overrun and excessive contract variation. Reddy and Reddy (2015) studied the effect of PPP on infrastructure development in India. The study found that with PPP, there was a positive impact of the investment in infrastructure on the economic growth in terms of gross domestic product and gross capital formation. Gapochka (2016) studied the role of public private partnership in road network development in Russian Federation. The results revealed the fact that effective implementation of Public-Private Partnership in realization of road projects in Russia increases the quality of final services promotes innovation and effective risk allocation and finds new sources of investments.

Locally, Mwangi (2010) studied the effects of financing infrastructure project on economic development. The study revealed that infrastructure projects have a significant influence on economic development in Kenya. Mburu (2013) studied the correlation between investment in infrastructure and economic growth. The study found out that government's investment in infrastructure had a significant and positive effect on economic growth in Kenya. Bosire (2015) studied the determinants of the success of infrastructure projects financed by public private partnerships in Kenyan counties. Ojewang' (2015) studied the influence of PPP on provision of affordable housing in Nairobi County-Kenya. The study found that that the risk allocation, private capital, delivery time and cost savings in a Public Private Partnerships model of procurement have an influence in provision of affordable housing in Nairobi County, especially for the lower and middle income groups. The study found the relationship between government guarantees and success of the projects to be significant. To fill the existing knowledge gap, this study was therefore aimed at answering the question as to whether the adoption of PPPs has impacted on road infrastructure development in Kenya.

1.3 Objective of the research

The objective of the study was to examine the effect of Public and Private Partnership on road infrastructure development in Kenya.

1.4 Value of the Study

The study findings are important to the government of Kenya. By highlighting on how the adoption of PPP has impacted on the road infrastructure development in Kenya, Government can be able to make well informed decisions in the initiation of PPP projects across different sectors in Kenya

The study findings are also important to makers of policies. By highlighting on the impacts of PPP on the road infrastructure development, policy makers can be at a position to evaluate the effectiveness of the policies in place in regard to PPP and ensure that they are geared towards economic growth of the Nation

Finally, the study findings are of importance to scholars. The study increases literature on PPP and how it impacts on road infrastructural development. It therefore forms the basis upon which other studies on PPP will be carried out.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This literature used in the study is presented in this section. The chapter also describes how different theories were used to highlight relationships between the variables under study. It also presents review of different empirical studies relevant to the variables under study.

2.2 Theoretical Framework

Theories to be used in the study are presented in this section. Transaction theory, agency theory and exchange theories were used to explain the correlation between the variables under study as explained below.

2.2.1 Transaction Costs Theory

Transaction cost theory dates from the following question: "Why don't all the economic processes (transactions) take place in the market, but in enterprises (hierarchies)?"According to Coase (1937) and later to Williamson (1979), transaction costs play the crucial role for the existence of hierarchies. Transaction costs result from the search of appropriated partners, from cost of negotiation and completion of a contract as well as from costs of controlling and enforcement of the contract, which is the center stage of transaction costs theory. The decision if an economic transaction is made in the market or in a hierarchy depends on the amount of total costs (transaction cost + production costs) (Muhlenkamp, 2006).

Many tasks of the public administration require specific capital. Thus the transaction costs theory is applicable to PPPs. At the beginning of the process there is an award procedure in order to find the best potential seller. Afterwards we can find extensive, but also inevitably incomplete contracts to be negotiated, monitored and enforced. However, if the public administration chooses hierarchy as an alternative, that means it takes charge of the task itself, these costs don't arise. But on the other hand there possibly emerge higher production costs due to legal regulations or policy objectives that restrict the radius of operation more than in the private sector (Muhlenkamp, 2006).

Finally the total cost of co-operation with a private firm and a pure public solution (there are also intermediate forms) are compared. The more specific the needed capital is, the bigger is the hold-up risk and the expensive are the legal regulations and their monitoring and enforcement. When applying the transaction costs theory to PPP, one has to consider two peculiarities: The public administration wants to achieve other objectives than a private enterprise – instead of realization of profits, public interests; and the selection of the partner is liable to stricter regulations than in the private sector- award procedure.

In theoretic models the objective of public interest is interpreted as welfare maximization, the sum of producer surplus and consumer surplus. This implies, firstly, a conflict of interests between public administration and private partners. However, economic literature identifies this goal conflict as the driving force of operational efficiency at least in PPP undertakings. Secondly, the aim of welfare maximization potentially weakens negotiation position of the public administration compared to the private partner. Bos (2001) showed that efficient contracts are possible for the cases of unilateral and mutual specific investments, if the buyer behave welfare maximizing and non-varying quality. This theory was therefore used to explain the effectiveness of PPP in road infrastructure development by comparing the costs of road infrastructural projects funded by PPP versus the total cost of road infrastructural projects.

2.2.2 Agency Theory

This theory was postulated by Fama (1980), agency theory is commonly referred to as the principal-agent theory. The theory formalizes assumptions about the distribution of property rights and information in the writing of contracts that define organizations. More importantly, it looks into the associations amongst the agents and principals to whom organizations have vested authority in them (Fama and Jensen, 1983).

The theory opines that principals must resolve two main tasks in the choice and control of agents: first is the selection of fine agents, either contractors or employees, and offer compensations that would make them behave as expected. Secondly, monitoring the agents behavior in order to ensure that their performance is as per their initial agreement (Baysinger, Kosnick and Turk, 1991). There arises problems in the event that conflict on the goals of parties changes or the costs of monitoring

the agents activities increases. Asymmetry in information brings to fore the moral hazard problem and adverse selection (Baysinger, Kosnick and Turk, 1991).

In Public Private Partnership, principal agent relationship exists as the private party is the agent and the public partner being the principal. When the relationship amongst the players is not clearly spelt, then agency theory problems, such as asymmetry in information would normally arise (Hillman and Dalziel, 2003).The quality of the participants and the relationships among them and how it is thought out at the beginning determines the success or failure of PPP (Bhagat and Black, 2002).

This theory was used to explain how the relationship between the players in PPP projects impacts on the road infrastructural development. In this case, the length of road completed and the numbers of projects in progress during the time of the study. All these indicators pointed to the impacts of PPP projects on road infrastructural development of the nation.

2.2.3 Exchange theory

The conceptual framework postulated by the theory is almost same to resource dependency standpoint in one central way. These hypotheses are affirmed to the concept of interdependencies and that governments should relate amongst the various stakeholders in order to obtain resources for the attainment of their set goals. Though the two theories are fairly different in their approach to get over dependencies, resource dependency theory highlighted above, recommends an asymmetric balance of IORs in pursuing control and power. On the flipside, the Exchange theory refers to exchange amongst organizations centered on intentions of mutuality where 'the connection process is described through balance, equity, mutual support and harmony, instead of domination, conflict and coercion (Oliver 1990). Nevertheless, it doesn't essentially imply that the resources exchange is always mutual and equal. Outright equality therefore would be enormously problematic in attempting to achieve even though not sought. Rather than absolute equality in the exchange of resources, symmetry denotes comparative equality.

The main objective in establishment of PPPs which suit the principles of exchange theory is that organizations agree to such engagements in pursuit of mutually beneficial or common goals of interests. Though impression in scarcity of resources fortifies exchange theories and resource dependency, there is likelihood of it inducing co-operation as compared to competition (Alter and Hage, 1993). Therefore above theory was used in this study to explain the effectiveness of PPP in road infrastructure development in Kenya.

2.3 Public-Private Partnership

Today, PPPs are no longer limited to public services in the developed world and now constitute an important fixture of international development strategy. From 2007 to 2011, PPPs as defined by the World Bank amounted to approximately USD 79 billion spread across investments in 134 Developing countries. PPPs also accounted for around 15 to 20 percent of total infrastructure spending in developing countries. From 2012 to 2014,investments in PPPs grew to an average of USD 124 billion in new projects per year, though in 2015 declined slightly to USD 111.6 billion(World Bank Group, 2015).

Even though new funding is substantial, PPPs remained concentrated in a relatively small number of countries. For instance, between 2011 and 2015, Laos accounted for one third of total PPP funding in infrastructure in low-income countries eligible to draw from the International Development Association (IDA) of the World Bank Group (World Bank Group, 2016). In 2015, Turkey alone comprised 40 percent of global PPP financing in infrastructure. Even though the total amount of funding declined in three countries, Brazil, India, and China, they still accounted for 131 of the total 300 PPP projects in infrastructure in 2015 (World Bank Group, 2015). Within developed countries, PPPs are present but not prevalent; in a 2010 survey of 22 member countries of the Organization for Economic Cooperation and Development (OECD), only four (Mexico, Chile, Australia and South Korea) used PPPs for more than 10 percent of total infrastructure spending (Burger, 2013).

The scope of PPPs can be broad; examples of existing PPP projects include trash disposal systems, prisons, information technology services, stadiums, and pipelines. However, the vast majority of PPPs in developing countries have historically been concentrated in the infrastructure and energy

sectors. According to the World Bank, from 2012 to 2015 PPPs in IDA countries focused exclusively on energy, transportation, and water and sewage projects; even then, a vast majority (86 percent) of the projects were in the energy sector, principally in hydroelectric and wind power generation (World Bank Group,2016).

Transportation projects have focused on highways, seaports, and airports. According to the same World Bank report; the vast majority of these IDA PPP projects were "greenfield investments" (86 percent), a rate higher than in non-IDA countries (68 percent). There is also variation in funding structures. Within the World Bank PPI database, which only examines infrastructure projects, approximately 53 percent of total investment for IDA PPPs was raised through multilateral development banks, with another 43percent from private investments. Only four percent came from public sources, such as public banks or government budgets (World Bank Group, 2016). Moreover, commercial partners were more likely to obtain equity rather than debt. While commercial banks only sourced 27 percent of total debt, they held 73 percent of the equity in the PPP projects; most of the debt was in the form of borrowings from the multilateral or bilateral development banks.

In recent years, more investment has been targeted at non-traditional sectors for developing countries, such as healthcare and education. In the healthcare sector, the World Bank has promoted PPPs as a way to fund vaccinations, hospital construction and maintenance, and food fortification in the developing world (World Bank Group, 2013). However, given the social objectives for healthcare, some PPPs have encountered significant cost overruns and disappointing outcomes. Oxfam criticized one health care PPP in Lesotho for costing three times as much as the old public hospital (Marriott, 2015). Additionally, the World Bank has supported PPPs in education, both in new schools construction and in the operation of existing educational services. Proponents have argued that PPPs in education introduce competition in the education market while reducing the government risk (Patrinos, 2009). PPP projects earmarked for renewable energy have increased tremendously. In 2015, investment in renewable energy increased to USD 9.4 billion, and focused on PPP investments in solar, wind, hydro, and geothermal energy. Renewable accounted for 63 percent of all energy investments via PPP projects in database of the World Bank (World Bank Group, 2015).

The database of World Bank Group (World Bank, 2015) outlines key areas where private and public sector can implement Public Private Partnership projects.
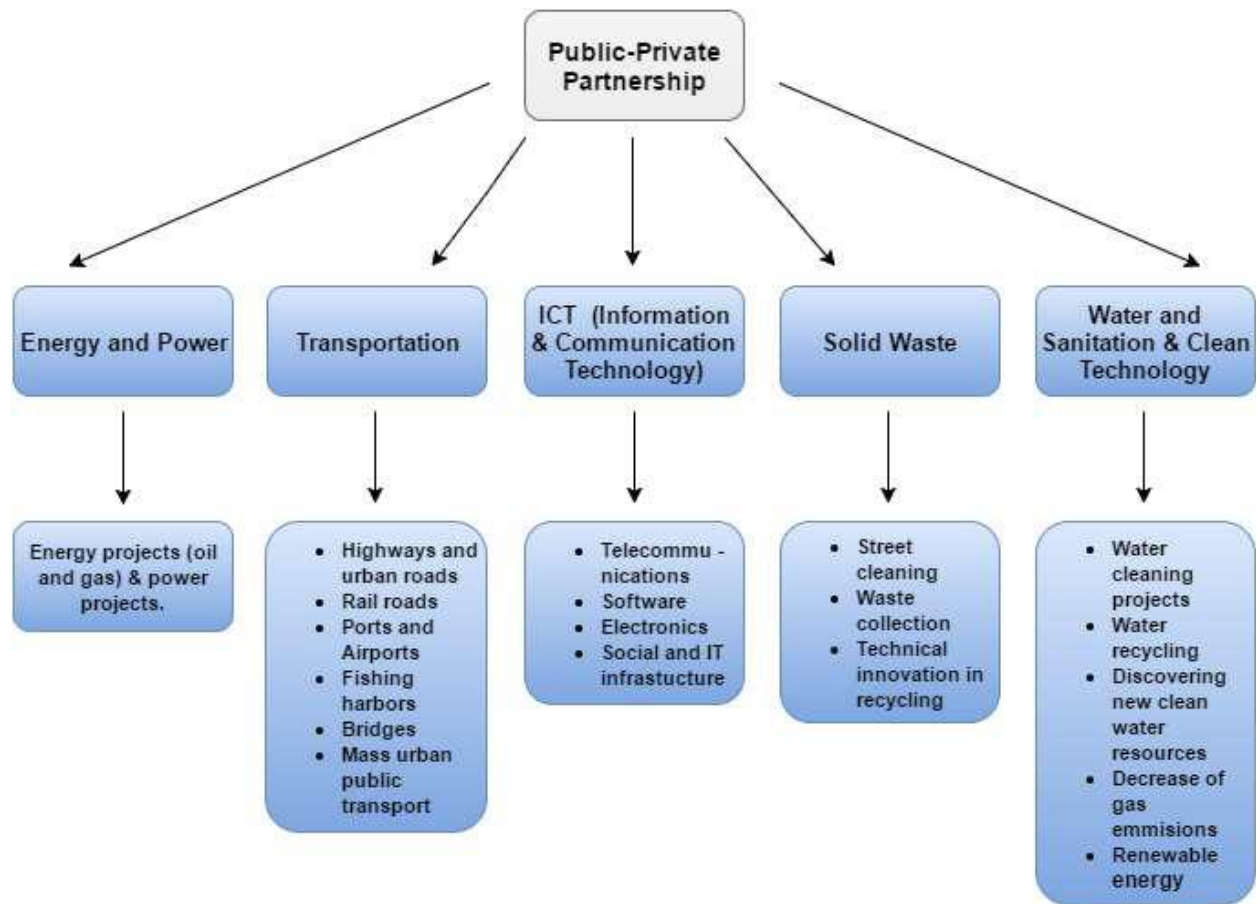
Figure 2.1: Public-Private Partnership spheres (World Bank Group, 2015)

With the information from database of World Bank Group (2015), the author generates commonly used sectors where PPP is applied.

2.3.1 Energy and Power

Oil and gas and the power industries are two crucial sectors in energy and power. World Bank (2015) describes the sector, as class of stocks, related closely to supplementing energy and production using different approaches. In addition, it includes natural resources exploration, such as oil & gas. It's an important sector since most nations rely heavily on the exportation of oil and gas as a key avenue of financing government's exchequer. Since the sector requires heavy

investments which always are not fully covered by the government, PPP is seen as a key framework where financing and implementation of projects can be actualized.

2.3.2 Transportation

This is a strategic sector which is important to a nation's economic development. The sector encompasses construction and maintenance of ports, airports, roads and highways, fishing harbors, railways, mass urban public transport services and bridges. The creation of new infrastructure facilities in transport sector and the renovation of existing ones have a positive impact on operations of both private and public sectors through security of citizens, increased logistics speed of operations, and safety of goods; in addition to improving a country's investment climate so as to attract foreign and local investors. This makes PPP to be an ideal model to solve the current problems and development of future transport infrastructure (World Bank, 2015).

2.3.3 ICT - Information & Communication Technology

The Inventions in ICT spectrum and market demand increase has pushed governments of countries to put more efforts and money on improvement of the sector. ICT embodies software, , electronics infrastructure, telecommunication and IT services. Continuous improvement in this sector is held to increase globalization and trade thus boosting a country's competitive advantage of. Governments therefore in conjunction with private players offer it's' support for growth of this spectrum, through the PPP relationships (World Bank, 2015).

2.3.4 Solid Waste

Generally a government has responsibility for management services of solid waste. Historically, the governments' role in this sphere has always included waste collection, cleaning of streets and creation of programs that would ensure cleanliness of the society's environment. Nevertheless, in recent times, developing countries' governments understand that involving the private sector can boost significantly improvement of environmental situation by actively engaging them in waste collection activities. Currently, businesses and governments work actively on various relating to collection of waste, cleaning streets, technological innovations and supporting volunteers financially to take part in management of solid waste (World Bank, 2015).

2.3.5 Water, Sanitation & Clean Technology

In recent times, there has been a dramatic change in the earth's climate which has raised a wakeup call to humanity to find solutions of saving the environment from over pollution. Inadequate safe and clean water for drinking and running daily operations, rapid increase in gas emissions, pollutions in city streets and extinction of specific animal species globally are ideally problems faced by the society in recent days. Therefore, this has informed the need of governments to work closely with the private sector in a bit to address such problems. Through the PPP framework in Projects covering Water & Sanitation, and Clean Technology areas such as, forums, investment in development of new technology and innovations, drafts and voluntary activities have turned out to be core PPP elements between governments and businesses in the field (World Bank, 2015).

2.4 Empirical Studies

Findings from the large number of case studies conducted on PPPs have shown that there are improvements in gains on infrastructural services and assets. Though the researches only show scenarios before PPP projects and after, they reveal success stories on the contributions made in the development of infrastructure that is efficient. This section therefore presents some of the empirical studies on the impacts of PPP on infrastructural development across different sectors.

An analysis on the impact of involving the private sector in the productivity of firms undertaking electricity distribution was conducted by Estache and Rossi (2004). By using the model of stochastic production frontier, they estimated the effect involving private sector. The sapling of 110 entities from 14 nations in Latin America for the period 1994-2000 was used. Differences in legislations, ownership structures and the involvement of private sector were the distinct features of such firms in electricity distribution. Findings by the author's findings were that there was on average better performance by private firms at approximately 30% as compared to firms in the public sector in operation and delivery of services. The findings do not justify the impact of regulatory regime to the differences in the prices of electricity. Moreover, the gains in productivity were not matched with price cuts after private sector involvement. This simply means that a portion of this was held by the state and operators and in the terms of higher rent and revenue in form of taxes respectively.

Based on empirical analysis with the use of time series data in 32 of LAC countries (1995-2006), Andreset al. (2013) concludes that there is a considerable impact of positive nature in participation of private sector on labor productivity, quality of service, and coverage in utilities evaluated when regulations are strong. There is no distinction amongst greenfield projects, divestitures, concessions and management & lease contracts. The expressions "private participation in infrastructure" & "privatization" is interchangeably used to imply the private sector participation (PSP) that is of four types. Through the research of 181 electricity distribution firms, the information on LAC electricity benchmarking database, water distribution and telecommunication that were implemented through privatization in the 1990's (World Bank, 2008) with 250 state-owned and private utilities annual information.

Gassner et al. (2007, 2009) researched on PSP impact in water and sanitation services and distribution of electricity. The research compares firms with PSP to a counterfactual of "sufficiently" same SOE's. The private partner in the form of performance based contracts and divestures is expected to possess decisions making power so as to have an impact on the firm's performance. Research findings from such PSP show that there is increased output in the form of connections of electricity(Increase in connections of residents by 29% per worker), 19% and 12% sanitation and water connections increase respectively, the ratios in bills collection is 50% and 85% higher in water and electricity as compared to SOE's, and lastly there was improvement in the quality of services through electricity distribution losses reduction and efficiency in water and electricity services The researchers point out that the gains in efficiency do not automatically translate to reduction in prices since such efficiency could be used cover up for previous services that were not profitable or the private operator could as well keep the same. Moreover, there is the likelihood that such improvements could be for a short term period due to the non- robust investment in utilities by private and public sectors. The study used data from more than 1,200 utilities (926 SOEs and 301PSP's) in transitioning and developing economies from 71 countries that have had their operations for more than a decade.

Marin et al. (2009) examine data of performance for more than 65 large projects under PPP in water sector through management contracts, lease-affermage or concessions that have existed at least five years (management contracts being three years). Four dimensions were analyzed by the

researchers; access in form of expansion and coverage, service quality, efficiency in operations and levels of tariffs. The researchers used average measures in SOE in order to expound the differences when such measures are available. The size of the sample represented population of almost 100 million people served (between 1990 and 2007 almost half of close to half of the urban population that has been served by operators in private water sector). The research concludes that PPPs have lead to significant improvements in efficiency of operations.

Marin *et al* (2009) finds out that through PPP projects in water sector, since 1990 more than 24 million people in developing countries have had access to piped water. The researchers look at concessions' performance since many of such concessions failed to invest the amount of private funding they had originally committed and did not always attain their initial contractual goals for coverage. In the pool of 30 concessions studied, those that performed well were the ones that had the element of both public and private funding (Cordoba in Argentina, Guayaquil in Ecuador and Colombia).On the contrary, lease-affermage was mentioned by the researchers in scenarios where there was successes in expansion of access (for instance in Ivory Coast and Senegal). In the aforementioned scenarios, public asset holding company undertook the investment with no or very limited money from the government. Through quality of service, the main challenge for most PPPs was to eliminate rationing of water, a measure which also aids a higher quality of water by reduction of risks of pipe infiltration. The researchers point out a number of examples (Countries in West Africa and Colombia) where there was improved service continuity courtesy of private operators by beginning from systems that were highly deteriorated.

Public private partnerships for delivery of services has exposed major opportunity for special groups and women entrepreneurs in local services deliveriny and creating conditions for empowerment at the grass root level. The PPP between Cadbury India, Kerala Agricultural University and DBT in a period of 23 years trained 250 women and established 28 cocoa chocolate units in different parts of Kerala. Thirumadhuram Pineapple project through PPP involving Kudumbhasree Project Mission, Department of Agriculture, women SHG sand Nadukkora Agro-processing centre could produce 25,000 tonnes of pineapple in 500 ha and directly employed 12,500 women (Rajendran*et al.* 2010). PPP in vegetable marketing in Coimbatore district of Tamil Nadu enhanced the income level of farmwomen by 20 per cent (Thangamani*et al* 2012).

Wibowo and Alfen (2013) researched on the impact of financing PPP infrastructure projects on growth of the economy; a descriptive survey was done on various categories of projects laying more focus on agricultural and road construction projects. A sample of 100 projects was used and data was analyzed using a regression model, analysis findings reflected that the relationship between growth in the level of GDP and PPP infrastructure financing was positive

Ncube (2010) conducted a descriptive survey involving 200 infrastructural projects, a large panel data for 136 countries, the research aim was to identify the correlation between financing infrastructure projects with its impact on economic development, a comparative analysis was done on the projects in relation to the impact of projects on economic development. The results of the study found financing of infrastructure has a positive correlation with economic development.

Leley (2013) in his study assessed workers in ministry of public works, Ministry of Roads, Construction companies and independent project management companies. To establish a clear picture of the scenario, various research methods were employed in the study. Quantitative and Qualitative means of collecting data was used in the research. Analyzed data was summarized through both inferential and Descriptive statistics. Presentation and interpretation were also done to ascertain the relevance of the objectives. The presentation was done in form of tables, figures and frequencies and the explanation of every table given was given as a conclusion after every analysis. All the factors influencing implementation of donor funded infrastructural projects were analyzed in a separate table or figure. The main factors summarized include logistics, human factors, proliferation, coordination and technology.

Caspary (2009) investigated on the link between project performances through improving sustainability in large infrastructure projects financing. A comparative study was conducted to look into the rigidity of different types of public financing institutions' safeguard mechanisms in financing large dams in developing countries. This was achieved by examining: the institutional strategies and policies in place in a set of key public financing institutions; and project-level case studies of dams financed by these institutions and the stringency with which existing policies are applied by the key financing institutions. A trend analysis was carried out and the results of the study showed a positive correlation between project financing and infrastructure development.

Bruin and Flint-Hartle (1999) undertook a research in New Zealand to look at the motivators of property investing by investors. Amonst the motivator included return on investment expected, attitude towards risk and accumulation of wealth through capital gain in long-term. The biggest consideration in property investment decision was long-term capital gain and accumulation of wealth. Rental investment was the reason that was most important from 43 per cent of respondents while 17 per cent of the respondents identified it as the second most important reason.

Mburu (2013) studied the correlation between growth in Kenya's economy and infrastructure investment by the government. Descriptive research design was adopted in the study. Emphasis was given to secondary data obtained from Government development expenditure in infrastructure through the Economic Survey reports published by the Kenya National Bureau of Statistics. The data included the government investments in infrastructure and also economic growth data from CBK covering a period of ten years between 2005 and 2012. In order to test the relationship between the variables the inferential tests including the regression analysis was used. The study found that, investment in infrastructure development by government had a significant and positive effect on economic growth in Kenya for the period of this study. The study recommended that adequate funding should be directed towards infrastructure projects preparation, implementation and maintenance. The study suggested that proper reform policy should be complemented with the availability of necessary infrastructures that are important for the economic development in the country. There should be established Initiatives focusing on sponsoring of specific infrastructure projects and political championing with possible impact on economic integration.

Bosire (2015) conducted a study to establish the determinants of success of urban infrastructure projects financed by public private partnerships in Kenyan counties. Descriptive research design was used for the study. Semi-structured questionnaire targeting 47 county employees responsible for PPP projects implementation was used to collect the primary data. 41 questionnaires were returned providing 87.23% rate of response. Research findings showed that all counties have a PPP unit which is in line with the national governments initiative to encourage PPP funding of projects for improving infrastructure levels across the counties. It also found that 70.73% of the counties have in place PPP implementation guidelines which are instrumental in guiding the process. The study further found that 26.2 % of variations in the proportion of urban infrastructure

projects funded within the PPP framework are explained by changes in macro-economic conditions, government guarantees, project implementability and procurement process. The findings show a statistically significant relationship that is positive between government guarantees and success of the projects. There was also a statistically significant relationship between macro-economic conditions and success of the projects that is negative. The study also notes a positive relationship between project implementability and successes as well as a negative relationship between procurement process and project success. The relationships are not statistically significant. The study recommended that government should support infrastructural development by providing project guarantees and ensuring the macro-economic environment is sound for private investments. The study further recommended that counties should address the concerns on procurement transparency and they should enhance their capacity for project feasibility inquiries, design and implementation.

Mwangi (2010), undertook a research to find the impact of financing infrastructure projects on economic development. Descriptive survey was carried out at Ministry of Lands where target population of 15 respondents were got through census. Secondary and primary data sources were used and data was analyzed through descriptive statistics where standard deviation and mean was used to show the relationship amongst the two variables. The results concluded that Infrastructure Projects investment has a considerable influence on development of the Kenyan economy.

In his study, Kamau (2010) investigated on the link between Financing Infrastructure Projects on Economic Growth in Kenya, a descriptive study was used and census was used to administer questionnaires to 25 respondents, both secondary and primary data sources were used and their analysis was through descriptive statistics where the results showed the relationship between economic growth and financing infrastructure projects as positive.

Nguri (2009) established that municipal projects in infrastructure i.e roads, power, telecommunication and water undertaking etc also housing projects i.e schools, hospitals including other educational institutions can attract PPP financing. There was also identification of the various models in PPP finance for projects in municipality which included BOOT, contracting, BOT and

leasing as well as concessioning. Moreover, the study found out the necessary obligations to be met before a municipal authority or country can roll out PPP projects.

2.5 Conceptual Framework for the Study

The conceptual framework below highlights the correlation amongst the study variable. The independent variables are: PPP funded road infrastructure, Return on investment and number of road infrastructure projects completed while the dependent variable is road infrastructure development.

Public Private Partnership (PPP) -Road infrastructure under PPP	
Return on Investment	**Road Infrastructure Development**
Number in kilometers of Roads Infrastructure completed	
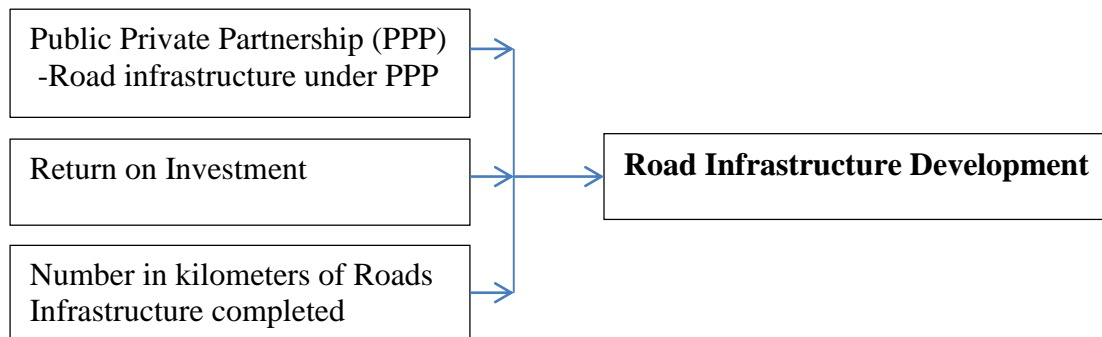
Independent Variables   **Dependent Variable**

Figure 2.2: Conceptual Framework

2.6 Summary of Literature Review

Different literature has been reviewed in this chapter including the theories to be used. Empirically, Mburu (2013) studied the relationship between investment in infrastructure and economic growth. He applied descriptive research design where he used secondary data from Economic survey reports and Central Bank of Kenya. The research looked into a period of 7 years from 2005-2012. His findings revealed that government investment in infrastructure development by government had significant and positive effect on economic growth in Kenya. The current research thus seeks to fill the literature gap by looking at the impact of PPP on road infrastructure development. Descriptive research design will be adopted for the study where the secondary data will be collected from the Kenya National Treasury. The study focused on a 11 year period between 2007 - 2017.

Another study by Bosire (2015) looked at the determinants of the success of infrastructure projects financed by public private partnerships in Kenyan counties. The research design used was descriptive where primary data was collected using questionnaires. The study targeted County government employees. The findings reflected that the relationship between government guarantees and success of the projects was positive and statistically significant. The current study focuses on the impact of PPP on road infrastructure development in Kenya where secondary data will be used in the study. Some of the gaps as depicted by the empirical studies are shown below in table 2.1.

Table 2.1 Summary of Research Gaps

Author of study	Focus of Study	Methodology	Findings	Knowledge Gaps	Focus of current study
Gapochka (2016)	The role of private-public partnership in the road network development in Federation of Russia	Qualitative research design was used in the study	The findings showed that PPP finds new sources of investments, increases the quality of final services and promotes effective risk allocation and innovation.	Qualitative research was used in the study	The current study focuses on how PPP has impacted on the development of road infrastructure
Mwangi (2010)	Effect of financing infrastructure projects on economic development	Descriptive research design was used where both primary and secondary data was used	The study found that infrastructure Projects has a significant influence on economic development in Kenya	This study was carried out at the Ministry of lands	The current study focuses on how PPP has impacted on the development of road infrastructure
Mburu (2013)	Relationship between investment in infrastructure and economic growth.	Descriptive research design where secondary data from Economic survey reports and Central Bank of Kenya was used. Period of focus 2005-2012	The study found that government's investments in infrastructure development had a significant and positive effect on economic growth in Kenya	The current research intends to fill the literature gap by looking at the impact of PPP on economic growth.	The study will focus on 11 year period of between 2007 and 2017.
Bosire (2015)	Determinants of the success of infrastructure projects financed by public private partnerships in Kenyan counties	Descriptive research design was applied in the research where primary data was collected using questionnaires	The findings disclosed that there was statistically significant relationship that is positive between government guarantees and success of the projects	Current research focuses on the impact of PPP infrastructure projects on economic growth in Kenya where secondary data will be used	Secondary data will be used in the current study

CHAPTER THREE
METHODOLOGY

3.1 Introduction

This chapter covered the methodology adopted in the study. The chapter presented the research design, the population sample and size, collection of data, validity/reliability of data and analysis of data.

3.2 Research Design

Descriptive research design was used in the study. Descriptive studies aim at showing the impact one variable has on another (Jupp, 2006). The design is therefore geared towards finding the how, where and what of a phenomenon. This method was deemed ideal as the research wanted to assess the effect of PPP on infrastructural development in Kenya. Time series empirical data on the variables was used to describe and examine how the adoption of PPP has impacted on infrastructure development in Kenya for the period 2007 to 2017.

3.3 Population of the Study

All infrastructure projects undertaken in Kenya from 2007 to 2017 under PPP formed the research population. There were 185 road construction projects implemented within the duration of study.

3.4 Data Collection

Secondary data was used in the research which was sourced from the National treasury on infrastructure projects, State Department of Infrastructure - Kenya National Highways Authority and from KNBS. The data contained the nature and cost of all projects across the study period.

3.5 Data Reliability

Reliability is the consistency of outcomes under same conditions. To ensure reliability, all the years under study (2007-2017) was considered.

3.6 Data Analysis

SPSS Version 21 was used to analyze the data collected from secondary sources. Secondary data gathered were reviewed for completeness and consistency for purposes of analysis. The Data collected were sorted, cleaned and coded and then entered into Statistical Package for Social science for analysis. Data was analyzed through inferential and descriptive statistics. The data after analysis was presented in a table form.

Road Infrastructure development as an independent variable was measured using net assets of all the road infrastructure projects. The independent variables were; cost of financing road infrastructure projects using PPP as measured by the cost of financing road infrastructure projects under PPP divided by the total costs of financing all infrastructure projects, return on investment will be measured using the percentage increase in the value of the road infrastructure projects divided by the total cost financing all the road infrastructure projects. The other variable will be number of kilometers of road infrastructure projects completed will be obtained by dividing the kilometers of completed road infrastructure projects by the total number in kilometers of all road infrastructure projects within the study period.

3.6.1 Analytical Model

Multiple regression model was used to achieve the objective of the study.

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

Where; Y= Road infrastructure development

β_0= Y intercept

B_1 to β_3 = regression coefficients

X_1= Cost of financing road infrastructure projects using PPP

X_2 = Return on investment

X_3 = Length of completed roads in kilometers

ε= Error term – to be used is a confidence interval of 5%.

3.6.2 Inferential Statistics

Inferential statistics including regression and correlation were applied in the study. These analyses were carried out to test the relationships between the study variables. Correlation was aimed at showing both the degree to which the study variables vary from one another and direction independently from case by case. Regression analysis on contrary was done test on the extent to which different variables affect road infrastructure development. Joint regression analysis showed the strength of the independent variables in highlighting changes in the dependent variable of the study.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

In the previous chapter, methodology to be adopted in the research was postulated. This chapter therefore presents the analysis, results and interpretation of the findings of the study. The aim of this research was to examine the effect of Public and Private Partnership on road infrastructure development in Kenya. To achieve the purpose, the first section presents the findings from descriptive statistics while the second section presents the analysis and findings of the study. The study used secondary data from State Department of Infrastructure, Kenya Roads Board, Kenya National Highways Authority and KNBS Statistical Abstract 2017. The study focused on 11 year period from 2007 to 2017.

4.2 Descriptive Statistics

Descriptive statistics was carried out on the study variables for a period between 2007 and 2017. The findings were captured in terms of mean, standard error and standard deviation as enumerated in Table 4.1.

Table 4.1 Descriptive Measures

Descriptive Statistics				
	N	Mean	Std. Error	Std. Deviation
Road infrastructure development	11	27.629566	13.4279247	44.5353881
Cost of financing road infrastructure projects using PPP	11	.448200	.0637265	.2113570
Return on investment	11	1.123482	.0211792	.0702433
Length in Kilometers of Completed Roads	11	.846673	.0614835	.2039178
Valid N (list wise)	11			

The findings on Table 4.1 show the lack of significant difference in the data for the independent variables: Cost of financing road infrastructure projects using PPP, return on investment and length of completed roads in kilometers (Standard deviation <1). This is an indication that there was little variation in the data on the data for the independent variables across the study period. On the contrary, the difference was significant in the data on road infrastructure development (dependent variable) with a standard deviation >1. This is therefore means that development in the road infrastructure greatly varied across the period of study.

4.3 Correlation Analysis

The relationship amongst the study variables used was by performed through correlation analysis. The analysis indicates the extent to which variables differ amongst each other independently and direction from case by case. Correlation coefficient is the outcome of correlation analysis testing linear relationships among two variables (Crossman, 2013).

The range of correlation coefficient falls between -1 and +1. A correlation coefficient of +1 denotes a positive perfect linear correlation between two variables while -1 correlation reflects a negative linear correlation amongst two variables. There is no linear relationship amongst two variables when the Correlation coefficient is 0 (Wond, 2012). Table 4.2 presents the findings from correlation analysis.

Table 4.2: Correlation Analysis

		Road infrastructure development	Cost of financing road infrastructure projects using PPP	Return on investment	Length of Completed Roads in Kilometers
Correlations					
Road infrastructure development	Pearson Correlation	1	.752**	.373	.270
	Sig. (2-tailed)		.008	.059	.022
	N	11	11	11	11
Cost of financing road infrastructure projects using PPP	Pearson Correlation	.752**	1	.345	.390
	Sig. (2-tailed)	.008		.099	.035
	N	11	11	11	11
Return on investment	Pearson Correlation	.373	.345	1	.495
	Sig. (2-tailed)	.059	.099		.021
	N	11	11	11	11
Length of completed Roads in kilometers	Pearson Correlation	.270	.390	.495	1
	Sig. (2-tailed)	.022	.035	.021	
	N	11	11	11	11
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: (Secondary Data)

The findings from correlation analysis in Table 4.2 reflects that road infrastructure developmentis positively correlated with the cost of financing road infrastructure projects using PPP where r = 0.752 and at level of significance of 0.008 and p value < 0.05 implies that it is statistically significant. The findings further reflects that the existence of correlation which is positive between

road infrastructure development and return on investment where r = 0.373 and at level of significance of 0.059 implying it is statistically significant. Findings further reflect that road infrastructure development has a positive correlation with length of completed roads in kilometers with r = 0.270 and 0.022 level of significance. The level of significance values show that correlation's probability being a fluke is extremely low; thus the confidence on the relationships amongst the study variables is genuine.

4.4 Regression Analysis

The analysis test through multiple regressions was conducted to test on the extent to which the variables under study affect road infrastructure development. The independent variable included: Cost of financing road infrastructure projects using PPP, return on investment and length of completed roads in kilometers.

Below, is the multiple regression model applied:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

Where: Y = Road infrastructure development

β_0 = Y intercept

β_1 to β_3 = regression coefficients

X_1 = Cost of financing road infrastructure projects using PPP

X_2 = Return on investment

X_3 = Length of completed roads in kilometers

ε = Error term

The regression model applied in the research was aimed at determining the degree to which the dependent variable is affected by the independent variables. As reflected in Table 4.3, R was 0.768 while R Square was 0.589 at level of significance of 0.05. The coefficient of determination shows that 58.9% in the road infrastructure development variations can be explained by Cost of financing road infrastructure projects using PPP, return on investment and length of completed roads in kilometers. The remaining 41.1% can be justified by variables that were not covered in this research. Since adjusted R and R square are above average, this implies that the model can explain the above average variation.

Table 4.3 Model Summary

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.768[a]	.589	.413	34.1224839

a. Predictors: (Constant), Length of Completed Roads in Kilometers, Cost of financing road infrastructure projects using PPP, Return on investment

Source: (Secondary Data)

The ANOVA analysis in Table 4.4 reflects F statistics is 0.000 level of significance, which less than 0.05 and the F value of (3.345) at confidence level of 0.05 significance.

Table 4.4 ANOVA

		ANOVA[a]				
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11683.601	3	3894.534	3.345	.000[b]
	Residual	8150.407	7	1164.344		
	Total	19834.008	10			

a. Dependent Variable: Road infrastructure development

b. Predictors: (Constant), Length in Kilometers of Completed Roads, Cost of financing road infrastructure projects using PPP, Return on investment

Source: (Secondary Data)

Table 4.5 shows beta coefficients of the dependent variable vis a vis independent variables.

Table 4.5 Coefficients

	Coefficients[a]					
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	224.461	204.339		1.098	.008
	Cost of financing road infrastructure projects using PPP	129.723	74.986	.616	1.730	.027
	Return on investment	147.324	239.156	.232	.616	.057
	Length of completed roads in kilometers	31.685	83.985	.145	.377	.017

a. Dependent Variable: Road infrastructure development

Source: (Secondary Data)

The regression model is written as: Road infrastructure development = 129.723* Cost of financing road infrastructure projects using PPP+147.324* Return on investment + 31.685* Length of completed roads in kilometers.

The regression Coefficients of Beta indicates that all the variables tested: Cost in financing road infrastructure projects using PPP, return on investment and length of completed roads in kilometershave positive relationship with road infrastructure development

With p-values less than 0.05 from the findings, it demonstrates that all the variables tested are statistically significant.

4.5 Discussion of Findings

The results of the correlation analysis revealed that road infrastructure development was positively associated Cost of financing road infrastructure projects using PPP where r = 0.752 and that the level of significance being 0.008 and indication that it was statistically significant at p value <

0.05. The findings also showed the correlation between road infrastructure development and return on investment to be positive where r = 0.373 and a level of significance 0.059, an indication that it was statistically significant. The correlation analysis finally revealed that road infrastructure development had a positive relation with length of completed roads in kilometers with r = 0.270 and 0.022 level of significance. These findings are in line with that of World Bank (2015) which found that current transport infrastructure facilities renovation and new ones creation has a positive effect on public and private sector operations thus increasing logistical operations speed, citizenry security and goods safety; as well as improvement in the investment climate thus attracting both foreign and domestic investors. Thus the reason why PPP is believed to be jointly valuable instrument for addressing problems in transportation experienced lately and transportation infrastructure development in future (World Bank, 2015).The findings are also in line with that of Wibowo and Alfen (2013) who undertook a research on the effect of financing PPP infrastructure projects on growth of the economy. The research findings showed that relationship between PPP infrastructure financing and growth of the level of GDP was positive.

Regression analysis findings showed the coefficient of determination being 58.9% of the variations on road infrastructure development can be explained by Cost of financing road infrastructure projects using PPP, return on investment and length of completed roads in kilometers. The remaining 41.1% relates to variables not analyzed under this study. The model also can explain the above average position as postulated by the R square and adjusted R position. This implies that that the variables analyzed were significant in explaining the variation in road infrastructure development in Kenya.These findings are in line with that of World Bank Group (2016) who found that approximately 53 percent of total investment for International Development Association (IDA) PPPs was raised through multilateral development banks, with another 43 percent from private investments. Only four percent came from public sources, such as public banks or government budgets (World Bank Group, 2016). This is an indication that PPP is a major financier for road infrastructure projects thus resulting into road infrastructure development particularly in developing nations.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The objective of the research was to examine the effect of Public and Private Partnership on development of road infrastructure in Kenya. The summary of findings, conclusions, implications of the research and recommendations are to be highlighted.

5.2 Summary of Findings

The outcomes from descriptive statistics showed that there was no significant difference in the data for the independent variables: Cost of financing road infrastructure projects using PPP, return on investment and length of completed roads in kilometers (Standard deviation <1). This was an indication that there was little variation in the data for the independent variables across the study period. On the other hand, there was significant difference in the data on road infrastructure development (dependent variable) with a standard deviation >1. This was an indication that development in the road infrastructure greatly varied across the period of study.

The results of the correlation analysis revealed that road infrastructure developmentwas positively associated with Cost of financing road infrastructure projects using PPP where $r = 0.752$ and that at level of significance of 0.008 an indication of the statistical significance at p value < 0.05. The findings also revealed the correlation between road infrastructure development and return on investment to be positive where $r = 0.373$ and at level of significance of 0.059, an indication that it was statistically significant. The correlation analysis finally revealed that road infrastructure development had a positive relation with length of completed roads in kilometers with $r = 0.270$ and 0.022 significance level.

The findings of the correlation analysis further revealed that cost of financing road infrastructure projects using PPP had a strong relationship with road infrastructure development which was the dependent variable ($r=0.752$). This is an indication that the cost of financing road infrastructure projects using PPP had a greater effect compared to other study variables. This was followed by return on investment ($r=0.373$) and finally the length of completed roads in kilometers (($r=0.270$).

It was therefore deduced from the significance values that the probability of the correlation between the study variables being coincidental is very low; thus showing the assurance and confidence on the relationships amongst the variables.

Regression analysis findings showing the coefficient of determination, implies that 58.9% of the road infrastructure development variations can be explained by Cost of financing road infrastructure projects using PPP, return on investment and length of completed roads in kilometers. The remaining 41.1% shall be expounded by the variables which were not discussed under this study. The model thus can explain the above average variation position as expounded by R square and adjusted R. This indicates that the variables tested were significant in explaining the variation in road infrastructure development in Kenya.

The findings from ANOVA showed F statistics significance of 0.000 that is less than 0.05 and the F value of (3.345) at confidence level 0.05 being significant. Finally, the findings on the Coefficients of Beta in the regression showed that the total tested variables: Cost of financing road infrastructure projects using PPP, return on investment and length of completed roads in kilometers have positive relationship with road infrastructure development. It was further found that the tested variables are significant statistically with their p-values being less than 0.05.

5.2 Conclusions

These are the conclusions arrived at from the research findings:

The study concludes that cost of financing road infrastructure projects using PPP is a major contributor to road infrastructure development in Kenya. This was based on the observation that it had a high correlation with road infrastructure development.

The study also concludes that return on investment and length of completed roads in kilometers also influences the development of road infrastructure in Kenya.

This research immensely contributes to the existing theories and literature on public-private partnership especially with regard to infrastructural development. Theories such as transaction cost theory focusing on search of appropriated partners, from cost of negotiation and completion of a contract as well as from costs of controlling and enforcement of the contract can be used to explain

the choice of financing using PPP. This study found that cost of financing road infrastructure projects using PPP impacts on the road infrastructure development in Kenya.

The findings of the study also contribute to the formulation of policies guiding the choice of financiers for PPP. Government bodies such as State department of Infrastructure, Kenya Roads Board, and Roads agencies – Kenya National Highways Authority, Kenya Rural Roads Authority and Kenya Urban Roads Authority can use the findings of the study to come up with policies regulating the choice of PPP financiers in Kenya.

5.4 Recommendations

The recommendations arrived at from the research findings are as;

The government should put into consideration the road infrastructure development such as the length of road constructed and the duration taken. By ensuring that projects are completed within specified time, the government will save on wastages due to delays and also promote growth in the economy through use of constructed roads.

The study also recommends that in the selection of PPP partners, the government should consider the cost of financing through negotiations and the duration for financing. This will help in reducing the cost of PPP while promoting development.

5.5 Suggestions for Further Research

This research was undertaken in order to examine the effect of Public Private Partnership on road infrastructure development in Kenya. The researcher therefore recommends that a different study be conducted on the determinants of the choice of PPP partnerships which was not the concern of this study.

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APPENDIX 1: LIST OF ROAD INFRASTRUCTURE PROJECTS

				ANNEX VII: TEMPLATE FOR UPDATING PROJECT DETAILS FOR FY 2018/19 BUDGET					

State Department of Infrastructure - Kenya National Highways Authority

	IFMIS Code	Project Title	Length (Lane Km)	Estimated Cost of Project/Contract Value (a)	Financing		Timelines	
				Total	Foreign	GoK	Start Date	Completion Date
1	1091110801	Magumu - Njambini Road	22	820,320,126		820,320,126	15-Mar-13	15-Mar-15
2	1091111101	Rumuruti - Mararal Road (phase I)	35	3,989,211,846	-	3,989,211,846	11-Jun-13	1-Jun-18
3	1091111301	Londiani-Fort Tenan-Muhoroni Road	63	5,468,960,786	-	5,468,960,786	20-Jul-10	2-Jan-15
4	1091111901	Maumau - Ruambwa - Nyadorera - Siaya Road	31	2,596,902,092	-	2,596,902,092	15-May-13	12-May-17
5	1091112201	Mbita cause way Bridge	1	1,065,976,165	105,000,000	960,976,165	23-Jan-13	20-Jan-16
6	1091112401	Kehancha-Suna - Masara Road	68	5,903,140,601		5,903,140,601	15-May-13	30-Jul-17
7	1091102201	Marsarbit- Turbi Road	122	-	13,246,460,900	434,157,504	5-Apr-11	4-Jun-16
8	1091102301	Turbi - Moyale Road	121	14,046,896,920	13,148,904,124	897,992,796	12-Oct-12	23-Sep-16
9	1091102101	Timboroa - Eldoret Road	76	5,434,860,652	4,416,060,325	1,018,800,327	28-May-12	28-Jun-16

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10	1091116401	Athi River - Namanga Road including Namanga One Stop Border Post	135	9,012,901,788	6,552,000,000	2,460,901,788	6-Jun-07	1-Jun-16
11	1091117001	Jn. A109 (Changamwe round about) - Moi International Airport Access Road & Port Reitz Road	6	5,897,089,231	1,809,678,000	4,087,411,231	9-Apr-15	27-Oct-18
12	1091101004	NCTIP: Rehabilitation of Njoro Turnoff - Timboroa Road	84	6,077,153,674	3,870,692,962	2,206,460,713	9-Oct-06	19-Mar-10
13	1091101008	NCTIP: Rehabiliation of Nyamasaria - Kisian Road	22	8,140,437,887	3,878,095,620	4,262,342,266	9-Feb-12	16-Jun-15
14	1091101203	KTSSP: Rehabilitation Kisumu - Kakamega Road	47	9,219,020,496	6,424,884,076	2,794,136,420	5-Jan-13	1-Dec-18
15	1091101206	KTSSP: Rehabilitation Webuye - Kitale Road	58	5,908,571,071	4,548,686,488	1,359,884,583	10-Jan-13	19-Aug-18
16	1091101208	KTSSP: Rehabilitation MajiyaChumvi - Bachuma Gate Road	53	5,798,508,016	4,750,753,795	1,047,754,221	3-Nov-14	18-Nov-17
17	1091100402	MPARD Package 1: Miritini- Mwache Road including Kipevu Link Road	10	18,756,435,483	11,524,257,378	7,232,178,105	18-May-15	18-Jun-18
18	1091110401	Mariakani - Kaloleni - Kilifi Road : Phase I & II	54	4,203,590,934	-	4,203,590,934	18-Jul-12	18-Dec-17
19	1091110601	Thua Bridge	1	652,586,968	-	652,586,968	8-Jun-12	21-Dec-15
20	1091111401	Sotik - Ndanai Road	20	2,149,591,972	-	2,149,591,972	7-Sep-11	11-May-14
21	1091111501	Ndanai - Gorgor Road	13	1,100,714,249	-	1,100,714,249	1-Jun-14	13-Jan-17
22	1091140801	Enjinja - Bumala Road	37	2,356,506,338	-	2,356,506,338	21-Oct-11	19-Jun-16
23	1091111801	Rangala-Siaya-Bondo Road	42	1,793,573,075		1,793,573,075	5-Jan-09	5-Jul-15
24	1091112101	Homa Bay-Mbita Road	41	4,106,551,858	-	4,106,551,858	3-Feb-10	23-Oct-15

25	1091111701	Ndori- Ng'iya&Kogelo Access Road	20	1,532,719,990		1,532,719,990	12-Aug-14	14-Dec-12
26	1091112301	RodiKopany - Ndhiwa - Karungu Road	50	1,344,076,590		1,344,076,590	30-Apr-12	30-Sep-17
27	1091141601	Ena-Ishiara - Chiakariga Road	57	3,298,061,109		3,298,061,109	1-Jun-08	1-Jul-11
28	1091114701	Thika - Magumu Road	85	1,304,912,086		1,304,912,086	1-Jul-12	1-Jun-15
29	1091114801	Lomut - Lokori Road – Design	100	38,541,000		38,541,000	16-Apr-12	15-Apr-13
30	1091115201	Lanet- Ndundori Road	30	1,148,837,797		1,148,837,797	1-Jul-10	1-Dec-13
31	1091101701	Merille- Marsarbit Road	121	14,954,212,432	9,160,295,814	5,793,916,618	21-Aug-13	27-Jan-16
32	1091102401	Mwatate - Taveta Road	99	9,124,971,822	6,868,304,495	2,256,667,327	17-May-14	17-Feb-18
33	1091116201	Eldoret - Webuye Road	60	6,926,459,485	4,616,215,339	2,310,244,146	1-Mar-11	9-Jul-16
34	1091116301	Webuye - Malaba Road	59	6,876,791,535	4,711,074,256	2,165,717,280	1-Mar-11	7-May-16
35	1091113301	Kapsoit - Sondu Road – Design	34	69,984,300		69,984,300	6-Jan-12	6-Dec-12
36	1091101102	EATTFP: One Stop Border Post at Taveta Border Crossing-DFID	N/A	635,725,013	456,796,678	178,928,335	4-Jul-12	30-Apr-15
37	1091112601	Kitui Turn Off- Mwingi- Garissa Road – Design	300	141,017,300		141,017,300	4-Nov-12	3-Nov-15
38	1091101005	NCTIP: Rehabiliation of Mau Summit - Kericho Road (B1)	58	8,965,456,314	4,296,616,654	4,668,839,660	16-Sep-10	4-Mar-15
39	1091101006	NCTIP: Rehabiliation of Kericho - Nyamasaria Road	76	10,374,803,302	3,406,584,416	6,968,218,886	16-Sep-10	30-Oct-14
40	1091101007	NCTIP: Rehabiliation of Kisumu-Airport-Kisian Road	9	3,556,343,009	-	3,556,343,009	12-Jan-15	9-Dec-15
41	1091101003	NCTIP: Rehabiliation of Machakos Turnoff - JKIA Road	33	8,313,009,898	5,569,716,631	2,743,293,266	11-Nov-06	16-Dec-13

42	1091112901	Kisian -Busia Road – Design	95	98,670,227		98,670,227	7-Mar-11	6-Aug-15
43	1091110301	Modika - Nuno Road (phase II)	12	1,491,606,238		1,491,606,238	8-Mar-12	22-May-15
44	1091115701	LAPSSET Garissa-Isiolo Road – Design	263	213,232,894	183,821,460	29,411,434	1-Jan-15	1-Jul-16
45	1091115801	LAPSSET Lamu - Garissa Road – Design	305	291,605,332	256,259,231	35,346,101	28-Apr-14	11-Oct-15
46	1091115001	Ndori-Owimbi	22	700,002,484	-	700,002,484	28-Apr-12	11-Oct-15
47	1091115101	Owimbi - Luanda Kotieno	26	1,049,472,915	-	1,049,472,915	28-Apr-12	11-Oct-15
48	1091115301	Kisii - Chemosit (C21)	72	465,748,822	-	465,748,822	28-Apr-12	11-Oct-15
49	1091141701	Emergency Maintenance of Kisumu – Kakamega	N/a	355,433,874	-	355,433,874	28-Apr-12	11-Oct-15
50	1091141801	Wakor Bridge	N/a	172,722,966	-	172,722,966	28-Apr-13	11-Oct-16
51	1091118401	Wargadud–Bambo	42	659,360,000	-	659,360,000	21-Jan-16	1-Oct-18
52	1091113101	Ngewa - Kibichoi - Jn D397 (Ichaweri) (RUIRU) Road – Design	50	55,000,000		55,000,000	22-Feb-13	10-May-16
53	1091113201	Nginyang - Lokori - Lokichar Road – Design	200	74,000,000		74,000,000	6-Sep-11	6-Sep-14
54	1091117701	Stand Khisa-Khumsalaba Road		-		-	28-Apr-12	11-Oct-15
55	1091101108	EATTFP: Construction of Axle Load Stations at Mariakani	NA	840,289,343	280,620,268	559,669,074	22-May-17	2-Feb-17
56	1091101107	EATTFP: Construction of Axle Load Stations at Athi River	N/A	628,866,051	222,287,287	406,578,765	30-Jun-15	7-Mar-17
57	1091101104	EATTFP: Busia OBP	N/A	1,048,258,612	754,766,864	293,491,748	10-Jul-12	30-Jul-15
58	1091101219	KTSSP: Mombasa Northern Bypass – Design	38	524,031,504	524,031,504	-	14-Apr-15	24-Mar-17

59	1091101215	KTSSP: Nakuru-Nyahururu-Nyeri - Marua– Design	170	317,918,132	317,918,132	-	14-Oct-15	12-June-17
60	1091101013	NCTIP: NBI URBAN TOLL CONCESSIONING	N/A	120,480,360		120,480,360	1-Jun-95	30-Sep-15
61	1091140001	NCTIP: ASSORTED EQUIPMENT-MATERIALS DEPARTMENT	N/A	67,940,001	-	67,940,001	1-Jun-95	30-Sep-15
62	1091101002	NCTIP: Rehabiliation of Sultan Hamud - Machakos Turnoff Road (A109)	55	4,869,594,403	3,262,628,250	1,606,966,153	10-Nov-06	2-Jul-12
63	1091142001	NCTIP: Construction of Road Over Rail at Makutano	2	582,774,315	-	582,774,315	9-Feb-11	30-Jun-15
64	1091101010	Emergency Restoration of Public Assets at Kisumu	N/A	128,626,629	128,626,629	-	21-Sep-15	13-Mar-16
65	1091101011	Emergency Restoration of Public Assets Homa Bay &Oyugis	N/A	95,801,364	95,801,364	-	21-Sep-15	28-Dec-15
66	1091118601	Leseru-Kitale (B2/A1) (Lot No. 1)	60	429,657,181	-	429,657,181	16-Jun-16	15-Jun-17
67	1091137301	Mariakani–Kilifi		450,000,000		450,000,000	19-Jun-07	17-Nov-10
68	1091141101	Kanyonyo-Embu		108,000,000		108,000,000	19-Jun-14	17-Nov-16
69	1091140901	Mwabungu - Mamba (c108)		50,000,000		50,000,000	19-Jun-14	17-Nov-16
70	1091141501	Ndenderu-Banana-Kanungo		50,000,000		50,000,000	19-Jun-14	17-Nov-16
71	1091135001	Sagana - Kutus-Kianjiru		80,000,000		80,000,000	19-Jun-14	17-Nov-16
72	1091134301	Karen Roundabout	3	695,229,299		695,229,299	19-Jun-15	17-Nov-17
73	1091139301	Muranga-Sagana - Marua (A2)		800,000,000		800,000,000	13-Aug-10	31-Jan-16
74	1091101106	EATTFP: One Stop Border Post at Isebania Border Crossing	N/A	512,831,608	346,892,809	165,938,799	4-Jul-12	30-Apr-15

75	1091100601	Nairobi Southern Bypass	26	25,619,481,910	14,622,050,880	10,997,431,030	2-Jul-10	31-Jul-15
76	1091113001	Wajir - Buna –Moyale		205,854,445	-	205,854,445	18-May-12	18-May-15
77	1091111201	Chepterit - Baraton University - Kimondi Road	12	1,779,541,653		1,779,541,653	14-Aug-12	8-Sep-16
78	1091101105	EATTFP: One Stop Border Post at Lungalunga Border Crossing	N/A	633,100,636	433,930,444	199,170,192	5-Jul-12	30-Apr-15
79	1091141001	Naivasha–Njabini						
80	1091141301	Kangundo-Mwala						
81	1091142001	Road over rail bridge along Mau Summit - Timboroa Road						
82	1091142101	Dundori-Olkalau-Njambini		614,920		614,920		
83	1091112001	Kendu Bay-Homa Bay Road	38					
84	1091116601	Nairobi - Thika Highway Improvement Project Lot 1 & 2	27	26,595,735,714	10,644,900,066	15,950,835,648	1-Jul-07	19-Jul-12
85	1091116701	Nairobi - Thika Highway Improvement Project Lot 3	24	12,649,959,302	11,209,988,784	1,439,970,518	2-Jul-07	20-Jul-12
86	1091116801	Emali- Oloitoktok Road		5,255,257,531	1,665,862,376	3,589,395,155	1-Jun-08	1-Jul-12
87	1091117101	Isiolo - Merille Road	120	49,472,500	-	49,472,500	1-Jun-07	1-Jul-10
88	1091111001	Kangema - Gacharage Road	35	4,467,528,083	-	4,467,528,083	1-Aug-12	27-Feb-16
89	1091101000	Northern Corridor Rehabilitation-III	N/a					
90	1091141401	Moiben - Kapcherop–Kitale						
91	1091110201	Loruk - Barpelo Road	62	6,537,295,046	95,000,000	6,442,295,046	17-Aug-11	30-Nov-18
92	1091101214	KTSSP: Technical Support Programmes	N/a	85,000,000		85,000,000	15-Nov-14	31-Dec-18

93	1091110701	Oljororok - Ndundori Road	35	2,359,865,914	-	2,359,865,914	24-May-13	13-Jan-19
94	1091112501	Chebilat - Ikonge - Chabera Road	45	3,352,376,396	-	3,352,376,396	12-Jul-12	27-Aug-18
95	1091101210	KTSSP: Interchanges at Nyahururu, Njoro, & Mau Summit Turnoffs	N/A	3,484,737,319	2,577,524,877	907,212,442	2-Feb-15	16-Dec-18
96	1091110501	Chiakariga - Meru Road	56	5,143,165,666	-	5,143,165,666	18-Jun-12	31-Oct-18
97	1091101103	EATTFP: One Stop Border Post at Malaba Border Crossing	N/A	636,956,521	467,145,247	169,811,274	4-Jul-12	30-Mar-18
98	1091110101	Voi - Mwatate - Wundanyi (phase I&II) Road	45	3,395,448,358		3,395,448,358	22-Mar-11	4-Jan-18
99	1091118501	Bambo–Rhamu	59	878,898,778	-	878,898,778	21-Jan-16	20-Jul-18
100	1091101209	KTSSP: Access roads to HQ (Barabara) and EASA	N/A	324,000,000	272,160,000	51,840,000	13-Nov-17	25-Dec-18
101	1091101213	KTSSP: HQ Complex for the Road subsector Instituitions (Barabara Plaza)	3	4,118,605,891	2,568,935,191	1,549,670,700	13-Mar-17	13-Dec-18
102	1091101308	NUTRIP: Capacity building and Technical Assistance Programme	N/a	150,000,000	150,000,000	-	1-Jul-13	31-Dec-19
103	1091101412	SS-EARTTDFP Capacity building and Technical Assistance Programme	N/a	3,400,000,000	2,856,000,000	544,000,000	1-Jul-16	31-Dec-21
104	1091114901	Jn A1 (Makutano) - Todonyang Road (C47) – Design	187	280,000,000		280,000,000	3/1/208	30-Sep-18
105	1091115601	Kenol - Muranga - Sagana Road (C71/C73) – Design	45	164,857,840		164,857,840	12-Oct-16	1-Nov-19
106	1091102001	Support to Road Sector: Capacity Building Component	N/a					
107	1091115901	LAPSSET Isiolo - Nginyang Road – Design	330	178,198,572	156,815,310	21,383,262	20-Feb-15	31-Dec-18

108	1091101216	KTSSP: Malindi-Madogo-Garissa– Design	330	280,797,868	280,797,868	-	28-Sep-15	28-Nov-18
109	1091101218	KTSSP: Nakuru-Loruk-Marich Pass – Design	280	270,533,738	270,533,738	-	9-Mar-15	9-Mar-18
110	1091101217	KTSSP: Lake Victoria Ring Road – Design	450	335,000,552	335,000,552	-	13-Jul-15	30-Oct-18
111	1091136801	NETIP: Lot 1_Isiolo – Kula Mawe	77	94,510,967	89,510,967	5,000,000	2-Aug-17	2-Feb-18
112	1091136802	NETIP: Lot 2_Kula Mawe–Modogashe	113	74,222,398	69,222,398	5,000,000	2-Aug-17	2-Feb-18
113	1091136803	NETIP: Lot 3_Modogashe –Samatar	90	245,508,411	210,508,411	35,000,000	1-Aug-17	1-Feb-18
114	1091136804	NETIP: Lot 4_Wajir – Wargetut	119	109,988,532	104,988,532	5,000,000	1-Aug-17	1-Feb-18
115	1091136805	NETIP: Lot 6_Wargetut – Elwak	56	101,841,805	96,841,805	5,000,000	9-Aug-17	9-Feb-18
116	1091136806	NETIP: Lot 7_Elwak - Rhamu	142	100,000,000	50,000,000	50,000,000	30-Sep-17	30-Mar-18
117	1091110901	Kutus -Kerugoya -Karatina Road		702,856,828		702,856,828	24-Apr-12	24-Apr-18
118	1091101205	KTSSP: Rehabilitation Kakamega - Webuye Road	40	4,595,344,294	3,928,354,519	666,989,775	10-Oct-16	1-Dec-18
119	1091117801	Road Reserves Mapping, protection & Network Management	N/a	550,000,000		550,000,000		
120	1091116901	Development Projects Monitoring and Evaluation, P&E , Quality Assurance & Safety Audits	N/a	550,000,000		550,000,000		
121	1091118301	Elwak–Wargadud	60	704,099,750	-	704,099,750	14-Feb-16	13-Aug-18
122	1091100301	Nuno - Modogashe Road Project	135	8,638,797,574	6,526,359,441	2,112,438,134	1-Nov-15	1-Nov-18
123	1091101204	KTSSP: Construction of Kisumu Boys - Mambo Leo Road	5	3,170,394,481	2,812,139,724	358,254,757	11-Jul-16	4-Sep-18

124	1091114001	Narok - Sekenani Road (C12)	75	2,214,834,126	-	2,214,834,126	27-Oct-16	26-Apr-19
125	1091114101	Installation of Automatic Trafficc counters and Classifiers and development of Highway Traffic Database	N/A	585,904,016	-	585,904,016	13-Aug-11	31-Jan-18
126	1091116001	Kitale -Endebes - Suam Road	45	5,997,717,511	3,897,717,511	2,100,000,000	15-Jan-18	15-Jun-20
127	1091120001	Changamwe-Magongo - KwaJomvu (A109L) Road dualling	4	2,420,327,530	2,420,327,530	-	7-Nov-17	11-Aug-20
128	1091119201	Garsen - Witu - Lamu Road(C112)	135	11,006,148,294	-	11,006,148,294	27-Feb-17	28-Aug-19
129	1091102602	Dualling of Mombasa –Mariakani	11	10,338,947,803	5,378,341,262	4,960,606,541	4-Feb-17	14-Aug-19
130	1091117201	Wei Wei Bridge	N/a	500,000,000	-	500,000,000	1-Dec-17	30-Dec-19
131	1091140201	Mpard Package 3 - Mteza – Kibundani Section	7	5,000,000,000	4,250,000,000	750,000,000	1-Aug-18	1-Aug-20
132	1091101306	NUTRIP: James Gichuru junction – Rironi (Uhuru Highway) (26 km)	26	23,478,371,181	12,500,000,000	10,978,371,181	1-Aug-18	30-Apr-21
133	1091101207	KTSSP: DuallingAthi River - Machakos Turnoff Road	21	10,314,694,165	4,158,209,286	6,156,484,879	15-Nov-14	7-Dec-18
134	1091101211	KTSSP: Interchange at KerichoJn B1/C23	N/A	1,007,993,814	768,667,594	239,326,220	7-Jun-17	7-Sep-18
135	1091101212	KTSSP: Interchange at Ahero Turnoff (Jn A1/B1)	N/A	1,111,706,990	763,634,882	348,072,108	7-Jun-17	7-Sep-18
136	1091101406	SS-EARTTDFP: Upgrading of Kalobeiyei River — Nadapal (88 km) road section	88	9,490,000,000	7,800,000,000	1,690,000,000	11-Jul-17	11-Jul-20
137	1091101407	SS-EARTTDFP: Upgrading of Lokitaung Junction to Kalobeiyei River (80 km) road section	80	9,550,000,000	7,800,000,000	1,750,000,000	1-Aug-17	1-Aug-20

138	1091101408	SS-EARTTDFP: Upgrading of Lokitaung Junction to Lodwar (80 km) road section	80	9,430,160,898	7,643,456,168	1,786,704,730	15-Aug-17	15-Aug-20
139	1091101409	SS-EARTTDFP: Replacement of Kainuk Bridge	N/A	1,837,379,312	1,508,118,622	329,260,690	17-Jul-17	17-Oct-20
140	1091101410	SS-EARTTDFP: Upgrading of Lodwar-Loichangamatak (50 km) road section	50	7,672,452,038	6,310,459,712	1,361,992,326	7-Jul-17	7-Jan-20
141	1091134401	Malaba–Busia	28	986,360,266	-	986,360,266	31-Oct-16	28-Apr-19
142	1091118701	Kitale-Morpus (A1) (Lot No. 2)	65	531,265,894	-	531,265,894	30-Jun-16	29-Jun-18
143	1091118801	MorpusJunc b4- Marich Pass (A1) (Lot no. 3)	32	308,743,512	-	308,743,512	30-Jun-16	29-Jun-18
144	1091118901	Marich Pass - Kainuk (KWS Gate) Lot 4	40	526,370,976	-	526,370,976	30-Jun-16	29-Jun-18
145	1091119001	KWS Gate - Kalemingorok (A1) (lot No. 5)	37	452,860,526	-	452,860,526	30-Jun-16	29-Jun-18
146	1091119101	Kalemingorok - Lokichar (jn C46/A1) (Lot No. 6)	33	498,358,098	-	498,358,098	30-Jun-16	29-Jun-18
147	1091134201	Lokichar (JN A1/C46) - Amosing (C46) (Lot No. 7)	36	835,779,557	-	835,779,557	21-Jun-16	29-Jun-18
148	1091134501	Nyaru–Iten	64	2,466,639,639	-	2,466,639,639	14-Nov-16	13-May-19
149	1091101016	Dhohoye Bridge on Kisian–Usenge	N/A	1,200,000,000		1,200,000,000	1-Nov-17	30-May-19
150	1091140301	Ugunja-Ukwala-Ruambwa (C92)	27	1,372,951,628	-	1,372,951,628	25-May-17	24-Nov-19
151	1091140401	Mau Narok - Kisiriri (B18)	34	1,232,217,429	-	1,232,217,429	27-May-17	26-Nov-19
152	1091140501	Ruiru – Githunguri - Uplands (C560)	47	4,167,691,617	-	4,167,691,617	6-Jul-17	5-Jun-20
153	1091140601	Posta (Naibor) – Kisima–Maralal	65	2,932,425,645	-	2,932,425,645	20-Jun-17	19-Dec-19
154	1091117401	Marigat Bridge	N/a	950,000,000		950,000,000	1-Dec-17	30-Dec-19

155	1091117501	Endau Bridge	N/a	950,000,000		950,000,000	1-Dec-17	30-Dec-19
156	1091120101	Lomut Bridge	N/a	500,000,000		500,000,000	1-Dec-17	30-Dec-19
157	1091116101	Dualling of Eldoret Town	N/a	18,200,000,000	9,000,000,000	9,200,000,000	1-Mar-18	1-Mar-20
158	1091115401	Isebania - Mukuyu - Kisii - Ahero Road (A1) Lot 1 & 2	170	28,726,650,000	24,518,000,000	4,208,650,000	9-May-17	8-Nov-20
159	1091114501	Kibwezi - Mutomo - Kitui Road (B7)	192	19,994,154,918	15,644,154,918	4,350,000,000	16-Aug-17	16-Feb-21
160	1091100403	MPARD Package 2 - Mwache – Tsunza – Mteza	9	25,000,000,000	21,250,000,000	3,750,000,000	1-Nov-18	1-Dec-21
161	1091118101	Dualling of Nairobi - Nakuru Road (Land Acquisition)	180	49,250,000,000		49,250,000,000	1-Dec-18	1-Dec-43
162	1091141901	Kitale - Morpus (KFW)	68				1-Mar-18	1-Sep-20
163	1091118001	Dualling of Mombasa - Nairobi Road (Land Acquisition)	450	39,100,000,000	33,000,000,000	6,100,000,000	1-Feb-18	1-Dec-23
164	1091142301	EXIM: Nairobi Western Bypass	17	19,900,000,000	17,300,000,000	2,600,000,000	1-Jan-18	30-Dec-20
165	1091118201	Dualling of Nakuru - Mau Summit Road (Land Acquisition)	175	6,200,000,000		6,200,000,000	1-Dec-18	1-Dec-43
166	1091119901	Bomas - OngataRongai - Kiserian Road Dualling– Design	17	100,000,000		100,000,000	1-Mar-18	30-Sep-19
167	1091101307	NUTRIP: Kisumu Northern Bypass Road (9km)	9	2,245,009,781		2,245,009,781	1-Aug-18	30-Apr-21
168	1091101411	SS-EARTTDFP: Upgrading of Loichangamatak - Lokichar (40 km) road section	40	5,210,000,000	-	5,210,000,000	1-Apr-18	1-Apr-21
169	1091114301	Maralal - North Horr Road (C77) – Design	320	103,000,000		103,000,000	1-Mar-18	30-Sep-19

170	1091114401	North Horr - Marsabit Road (C82) – Design	185	325,000,000		325,000,000	1-Mar-18	1-Sep-19
171	1091102603	Dualling of Mombasa - Mariakani Road (Lot 2: KwaJomvu - Mariakani)	30	1,000,000,000		1,000,000,000	7-Nov-17	11-Aug-20
172	1091116101	Eldoret Town Bypass Road	35	11,557,686,237	4,238,827,170	7,318,859,067	1-Oct-17	1-Jun-20
173	1091142401	Mombasa Gate Bridge (Likoni Bridge)	N/a	500,000,000		500,000,000		
174	1091142501	DuallingMeru Town Roads - (B66/A9)	Various	200,000,000		200,000,000		
175	1091142601	DuallingThika - Kenol - Marua (A2-R)	96	200,000,000		200,000,000		
176	1091117901	Bypass Rds Development Project (Nbi greater southern, Nbi Western, Aberdare ranges)	Various	100,000,000		100,000,000		
177	1091101304	NUTRIP: Southern Bypass junction-James Gichuru road junction (Mombasa road - Uhuru Highway)(12km)	12	1,174,267,739	924,267,739	250,000,000	1-Aug-18	30-Apr-21
178	1091101305	NUTRIP: JKIA junction-Southern Bypass junction and ICD Access Roads(Momasa Road) (8km)	8	974,267,739	724,267,739	250,000,000	1-Aug-18	30-Apr-21
179		DuallingMuthaiga - Kiambu (C32) Design	25	200,000,000		200,000,000		
180		Muthaiga - Kiambu - Ngewa Bypass (B30) Design	62	200,000,000		200,000,000		
181		Athi River – Machakos Turnoff Phase 1A		300,000,000		300,000,000		
182		Malaba One Stop Border Post		400,000,000		400,000,000		

183		Busia One Stop Border Post	400,000,000		400,000,000		
184		BRT on Thika Road to KNH (Superhighway)	8,000,000,000		8,000,000,000		
185		Annuity Programmes	4,000,000,000		4,000,000,000		
		TOTAL	**728,830,768,838**	**374,027,753,015**	**368,483,634,228**		