AN INVESTIGATION OF POLITICAL, ECONOMIC AND ENVIRONMENTAL RISK FACTORS THAT AFFECT SUCCESSFUL IMPLEMENTATION OF PUBLIC PRIVATE PARTNERSHIP PROJECTS IN THE KENYAN ROAD SUB - SECTOR

BY

OGOT YELLEN OKETCH

UNITED STATES INTERNATIONAL UNIVERSITY

SUMMER, 2014
AN INVESTIGATION OF POLITICAL, ECONOMIC AND ENVIRONMENTAL RISK FACTORS THAT AFFECT SUCCESSFUL IMPLEMENTATION OF PUBLIC PRIVATE PARTNERSHIP PROJECTS IN THE KENYAN ROAD SUB-SECTOR

BY

OGOT YELLEN OKETCH

A Project Report Submitted to the Chandaria School of Business in Partial Fulfilment of the Requirement for the Degree of Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY

SUMMER, 2014
STUDENT’S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University in Nairobi for academic credit.

Signed: __________________________ Date: __________________________
Ogot Yellen Oketch (Id No: 617788)

This project has been presented for examination with my approval as the appointed supervisor.

Signed: __________________________ Date: __________________________
Dr. Caren Ouma

Signed: __________________________ Date: __________________________
Dean, Chandaria School of Business
COPYRIGHT

No part of this report may be reproduced or modified in whole or in part, by any means mechanical or electronic without prior written consent from the author.

© Ogot Yellen Oketch 2014

All rights reserved
ABSTRACT

Earlier research studies on Public Private Partnerships (PPP) illustrate the importance of understanding and managing risks that attach themselves to PPP construction projects to ensure successful implementation. PPPs have gained significance in the Kenyan context in the past decade as an alternative choice for policy makers in implementing important public projects. However, successful PPP projects in the Kenyan road subsector are few and far between.

The focus of this research study was to investigate the risk factors that affect the successful implementation of PPP projects in the Kenyan road subsector. The research study specifically sought to investigate the political, economic and environmental risks that affect the successful implementation of PPP projects.

The research study was exploratory in nature. The sampling technique employed for the study was non-probability sampling and more specifically purposive judgemental sampling. Data was collected using structured questionnaires consisting of both open and closed ended questions and interviews conducted as well. Data was analysed using the Statistical Package for Social Sciences (SPSS) Software and presented using descriptive statistical techniques such as tables, graphs and means. The descriptive statistic of mean score was computed for the five-point Likert scale on the importance of each of the risk factors. In conclusion, based on the mean scores, the risk factors were ranked according to importance, as perceived by the respondents.

The target respondents for this research project were selected based on their (i) direct involvement and/or extensive experience in PPP projects within the road construction industry, (ii) in depth knowledge of PPPs. The target population chosen for the study consisted of 20 respondents. The researcher aimed to ensure that the respondents were representative of the public, private and development partner sectors.

The study found that economic risks were identified as most severe followed closely by political and lastly environmental risks. Results identified foreign exchange rate volatility, change in law and labour and material price fluctuation as the top three most severe risk factors respectively. As illustrated by the research findings, out of the fifteen (15) identified risk factors, foreign exchange rate volatility was identified as the most
significant economic risk factor, with a mean score of 4.33 out of the possible 5.0. This was closely followed by change in law risk which was perceived as a very significant political risk factor, with an overall mean score of 4.08. In conclusion, the study found loss of natural habitat as the most significant environmental factor with an overall mean score of 3.25 and was ranked 10th.

Recommendations for improvement suggest that where applicable parties involved insure against risk. Creating a conducive operating environment for PPP implementation will act as an incentive to donors and private sector, thus government needs to put in place appropriate legal frameworks to help such arrangements thrive. It is recommended that economic risks be averted/ reduced by providing stipulations in the PPP contract where exchange rates are fixed to help reduce effect of these risks, in addition to costs should be set in a stable foreign currency. Further, prior to commencement of the project it is recommended that a feasibility study be conducted to ascertain the viability of the project. As regards environmental risks, it is recommended that, organizations/ institutions abide by the environmental laws to alleviate chances of risks that may deter project progress.

Recommendations for further studies were as follows: Further research on the risks that affect PPP projects is recommended, as the risks that affect development and implementation of PPP projects are diverse. In addition, research into the development of a generic risk assessment / management model and an equitable risk allocation mechanism for the construction industry at a national level is recommended. Researchers should consider conducting research on risk mitigation strategies for similar construction projects.

In conclusion, it is recommended that the Kenyan PPP program be driven solely by the Central Government as opposed to the County Governments as this would ensure standardization, consistency and stability in the PPP market. Having 47 unique PPP markets would dissuade private participation and increase costs.
ACKNOWLEDGEMENT

The success of this project depended largely on the encouragement, assistance and guidance of many others. I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this research project.

First and foremost, I would like to thank the Omnipresent God, without whom it would have been impossible to complete this journey.

I take this opportunity to express my profound gratitude to my Professor, Dr. Caren Ouma for her exemplary expertise, guidance and constant encouragement throughout the life of this project.

I also take this opportunity to extend a deep sense of gratitude to the respondents, who set aside time to contribute to this research project. Further I would also like to thank my employer, Kenya National Highways Authority for facilitating the completion of this project. I am forever grateful for the valuable expertise and information provided by colleagues in their respective fields, I am grateful for their cooperation during the period of this assignment.

Special thanks to my Mentor, Ms. Esther Kebaya, for her cordial support, expertise, guidance and constant encouragement, few are blessed with a boss as understanding and caring as you. Thank you.

To my phenomenal brother: Yuri Ogot, you have been and always will be a positive motivating force within my life.

Lastly, I am forever indebted to my parents: Mrs. Jane Okeya Ogot and Eng. Abiud Ogot Achuodho for your love and support and for the sacrifices you have made, to ensure that my dreams came to fruition.

Any omission in this brief acknowledgement does not mean lack of gratitude.
DEDICATION

“You educate a man; you educate a man. You educate a woman; you educate a generation.”

Bringham Young.

…………………to the Ogots that you dared educate a girl child.
**TABLE OF CONTENTS**

STUDENT'S DECLARATION ........................................................................................................ i
COPYRIGHT .............................................................................................................................. ii
ABSTRACT ............................................................................................................................... iii
ACKNOWLEDGEMENT ............................................................................................................ v
DEDICATION ............................................................................................................................ vi
LIST OF TABLES ...................................................................................................................... ix
LIST OF FIGURES ................................................................................................................... x
ABBREVIATIONS AND ACRONYMS .................................................................................... xi

CHAPTER ONE .......................................................................................................................... 1
1.0 INTRODUCTION ................................................................................................................ 1
  1.1 Background of the Problem ............................................................................................ 1
  1.2 Statement of the Problem ............................................................................................. 7
  1.3 Purpose of the Study ..................................................................................................... 9
  1.4 Research Questions ...................................................................................................... 9
  1.5 Significance of the Study ............................................................................................. 10
  1.6 Scope of the Study ....................................................................................................... 10
  1.7 Definition of Terms ..................................................................................................... 10
  1.8 Chapter Summary ....................................................................................................... 12

CHAPTER TWO ........................................................................................................................ 13
2.0 LITERATURE REVIEW ...................................................................................................... 13
  2.1 Introduction .................................................................................................................. 13
  2.2 Political Risk Factors Affecting the Successful Implementation of PPP Projects ........ 13
  2.3 Economic Risk Factors Affecting the Successful Implementation of PPP Projects .... 21
  2.4 Environmental Risk Factors Affecting the Successful Implementation of PPP Projects .... 28
  2.5 Chapter Summary ....................................................................................................... 32

CHAPTER THREE .................................................................................................................... 33
3.0 RESEARCH METHODOLOGY .......................................................................................... 33
  3.1 Introduction .................................................................................................................. 33
  3.2 Research Design .......................................................................................................... 33
  3.3 Population and Sampling Design .................................................................................. 33
  3.4 Data Collection Methods ............................................................................................. 36
  3.5 Research Procedure ..................................................................................................... 36
3.6 Data Analysis Methods ........................................................................................................37
3.7 Chapter Summary ..................................................................................................................38

CHAPTER FOUR .....................................................................................................................39
4.0 RESULTS AND FINDINGS ................................................................................................. 39
4.1 Introduction .......................................................................................................................... 39
4.2 General Information of Respondents .................................................................................. 40
4.3 Political Risk Factors Affecting the Successful Implementation of PPP Projects .......... 41
4.4 Economic Risk Factors Affecting the Successful Implementation of PPP Projects .......... 45
4.5 Environmental Risk Factors Affecting the Successful Implementation of PPP Projects ... 49
4.6 Analysis by use of Descriptive and Inferential Statistics .................................................. 52
4.7 Chapter Summary ............................................................................................................... 54

CHAPTER FIVE ..........................................................................................................................55
5.0 DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS ...................................... 55
5.1 Introduction .......................................................................................................................... 55
5.2 Summary ............................................................................................................................. 55
5.3 Discussions .......................................................................................................................... 56
5.4 Conclusions .......................................................................................................................... 61
5.5 Recommendations ............................................................................................................... 62

REFERENCES ..........................................................................................................................65
APPENDICES .............................................................................................................................76
 Appendix I: Summary of Kenya’s Road Network Conditions by road class and surface type ................................................................................................................................. 76
 Appendix II: Trans African Highway .......................................................................................... 77
 Appendix III: Nairobi Urban Toll Road Concession .................................................................. 78
 Appendix IV: Various definitions of PPP .................................................................................. 79
 Appendix V: Perceptions of Foreign Bribery by Sector .............................................................. 80
 Appendix VI: Examples of Corruption in the Different Stages of Infrastructure Delivery ...... 81
 Appendix VII: Questionnaire ...................................................................................................... 83
LIST OF TABLES

Table 3.1: Population Size and Sample Distribution……………………………………34
Table 3.2: Sample Size Distribution………………………………………………………36
Table 4.1: Years of Experience………………………………………………………………41
Table 4.2: Number of PPP Projects Participated in……………………………………..41
Table 4.3: Frequency Distribution of Restriction on Repatriation of Funds…………49
Table 4.4: Reliability Statistics_Cronbach's Alpha……………………………………54
LIST OF FIGURES

Figure 4.1: Response Rate .................................................. 39
Figure 4.2: Area of Specialization ............................................ 40
Figure 4.3: Impact of Corruption on PPP Project Implementation ...... 42
Figure 4.4: Impact of Expropriation on PPP Project Implementation .... 43
Figure 4.5: Impact of Change in Law on PPP Project Implementation .... 43
Figure 4.6: Impact of Taxation on PPP Project Implementation .......... 44
Figure 4.7: Impact of Public Opposition on PPP Project Implementation .... 45
Figure 4.8: Impact of Foreign Exchange Rate Volatility on PPP Project Implementation .... 46
Figure 4.9: Impact on Interest Rate Volatility on PPP Project Implementation .... 46
Figure 4.10: Impact of Inflation on PPP Project Implementation .......... 47
Figure 4.11: Impact of Unfavourable Economy on PPP Project Implementation .... 48
Figure 4.12: Impact of Labour & Material Price Fluctuation on PPP Implementation .... 48
Figure 4.13: Impact of Loss of Natural Habitat on PPP Project Implementation ........ 50
Figure 4.14: Impact of Edge Effects and Pollution on PPP Project Implementation ...... 50
Figure 4.15: Impact of Indigenous Peoples on PPP Project Implementation ........ 51
Figure 4.16: Impact of Cultural Heritage on PPP Project Implementation .......... 52
Figure 4.17: Mean Score Ranking of Risk Factors .......................... 53
ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOT</td>
<td>Build-Operate-Transfer</td>
</tr>
<tr>
<td>DRC</td>
<td>Democratic Republic of Congo</td>
</tr>
<tr>
<td>ECA</td>
<td>Economic Commission for Africa</td>
</tr>
<tr>
<td>FEV</td>
<td>Foreign Exchange Volatility</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GoK</td>
<td>Government of Kenya</td>
</tr>
<tr>
<td>IDA</td>
<td>International Development Association</td>
</tr>
<tr>
<td>IRV</td>
<td>Interest Rate Volatility</td>
</tr>
<tr>
<td>KeNHA</td>
<td>Kenya National Highways Authority</td>
</tr>
<tr>
<td>PFI</td>
<td>Private Finance Initiative</td>
</tr>
<tr>
<td>PPP</td>
<td>Public Private Partnership</td>
</tr>
<tr>
<td>RSIP</td>
<td>Road Sector Investment Programme</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Science</td>
</tr>
<tr>
<td>SSA</td>
<td>Sub-Saharan Africa</td>
</tr>
<tr>
<td>UNTACDA</td>
<td>United Nations Transport and Communications Decade in Africa</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollar</td>
</tr>
<tr>
<td>USIU</td>
<td>United States International University</td>
</tr>
</tbody>
</table>
CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Problem

Transport is an indispensable element of development and socio-economic growth. As engines of economic integration, transport infrastructure and service facilities constitute a tool for accessing national and regional trade in a radically changing global environment, transport infrastructure remains a pillar of development with a view to accelerating growth and reducing poverty. Given the challenges of globalization, Africa is lagging significantly behind (United Nations, Economic and Social Council and Economic Commission for Africa, 2009). Partly a factor of cost and partly a matter of convenience, roads dominate the minds and pockets of transportation planners and government providers (Ministry of Roads, Republic of Kenya, 2010).

Inadequate infrastructure is a constraint on growth worldwide, and particularly in developing countries. Infrastructure services are often inadequate to meet demand, resulting in congestion or service rationing. Infrastructure services are also often of low quality or reliability, while many areas are simply un-served (The World Bank, 2012).

When infrastructure is absent or degraded, it no longer fulfils its connective functions, and the economy suffers. As essential transactions and movements are delayed or disrupted, transport costs rise, individuals lose time in unremunerated commuting, and firms must fight harder to compete. To restore the connections, new infrastructure must sometimes be built, or—more frequently—old infrastructure restored or improved (Carruthers, Krishnamani and Murray, 2008). Extensive and efficient infrastructure is critical for ensuring the effective functioning of the economy as it is an important factor determining the location of economic activity and the kinds of activities or sectors that can develop in a particular economy. Well-developed infrastructure reduces the effect of distance between regions, integrating the national market and connecting it at low cost to markets in other countries and regions. In addition, the quality and extensiveness of infrastructure networks significantly impact economic growth and affect income inequalities and poverty in a variety of ways. A well-developed transport and communications infrastructure network is a prerequisite for the access of less-developed communities to core economic activities and services (World Economic Forum, 2010).
Due to rapid social and economic growth, a massive demand for investment in infrastructure has been witnessed in many countries. Infrastructure is vital to any development process and impacts on the quality of development of any country and consequently on the quality of life of its people. Infrastructure quality, cost and reliability—whether in power, roads, rail, port or air— is directly associated with levels of income; in general the poorer a country’s infrastructure, the poorer are its citizen. With globalization, it will be increasingly difficult for Africa to remain competitive if its infrastructure systems continue to be sub-standard (World Bank, 2008).

Road infrastructure accounts for 80 per cent of the goods traffic and 90 per cent of the passenger traffic in the continent, further road infrastructure carries over 93 percent of all freight and passenger traffic in the country (ECA, 2009), for this reason it (roads) is the mode which has received the most attention (Nathan Associates, 2011). As literature documents, Africa’s existing transport facilities are poor and badly integrated compared with world standards. Currently, Africa’s road network covers about 2,299,070 kilometres. This is 234,457 kilometres or 11.36 per cent longer than what was reported at the end of the second United Nations Transport and Communications Decade in Africa (UNTACDA II) in 2000. Conditions on most African roads remain deplorable, as most parts of the road networks remain unpaved (Economic Commission for Africa [ECA], 2010). Appendix I was extracted to illustrate road network conditions in Kenya.

Road construction and maintenance standards are not uniform for all African countries. As shown in Appendix II, which illustrates condition of international road networks in Africa. Moreover few countries have relatively adequate financial and human resources to build roads and maintain them to international standards; many African countries are not in a position to do so. Overall, road network development has been inadequate in many African countries. Of even greater concern is the poor maintenance of existing roads, resulting in many sections of the network to be unusable during the wet season (ECA, 2009).

This poor infrastructure performance reflects pervasive challenges facing governments. First, most countries simply are not spending enough to provide the infrastructure needed. Secondly, poor planning and coordination, weak analysis underpinning project selection, pursuit of political gain, and corruption, mean that the limited resources are often spent on
the wrong projects. Moreover, the delivery of infrastructure assets and services often disappoints - construction of new assets costs more and takes longer than expected, and service delivery is weak. Finally, infrastructure assets are often poorly maintained, increasing costs and reducing benefits (The World Bank, 2012).

The deplorable state of African infrastructure is attributed to budgetary deficit. The infrastructure deficit estimates for Sub-Saharan Africa is substantially higher than what domestic resources can meet, further it has been shown that there is insufficient public funding to close the gap between infrastructure needs and availability of funds. Leveraging the private sector through Public Private Partnerships (PPP) is one option that is increasingly being pursued the world over, to help address the infrastructure gap. The advent of the new millennium saw the re-introduction of PPPs in Kenya for the mobilization of resources (Shendy, Kaplan and Mosley, 2011).

Public Private Partnerships may be defined as institutional relationships between the state and the private for-profit and/or the private not for-profit sector, where the different public and private actors jointly participate in defining the objectives, the methods and the implementation of an agreement of cooperation. PPPs are a variation of privatization in which elements of a service previously run solely by the public sector are provided through a partnership between the government and one or more private sector companies (On’golo, Spellman and Walker, 2006). In addition, PPPs involve private sector supply of infrastructure assets and services that have traditionally been provided by the government. An infusion of private capital and management can ease fiscal constraints on infrastructure investment and increase efficiency (International Monetary Fund [IMF], 2004).

PPP has been used internationally in more than 85 countries as a procurement method for delivering public infrastructure (Regan, Smith and Love, 2009). There are well established programs in a number of countries (including Chile, Ireland, Mexico and the United Kingdom) (IMF, 2004). Its main characteristics include a competitive bidding process, appropriate balance of project risks, private sector innovation and expertise (Adams, Young and Wu, 2006). A range of public private partnership arrangements are rapidly becoming the preferred way to provide public services worldwide because PPPs have been seen as a mechanism to tackle inefficiencies and insufficient governmental
funds for infrastructure development (Jin and Doloi, 2008). PPP is an increasingly popular choice for policy makers in implementing public works projects especially in the face of a shortage of government financial resources and where it is necessary to counter public inefficiency (Terry, 1996; Alfen, Kalidindi, Ogunlana, Wang, Abednego, Jungbecker, Jan, Ke, Liu, Singh and Zhao, 2009). PPPs are more efficient than public investment and government supply of services. One particular concern is that PPPs can be used mainly to bypass spending controls, and public investment off budget and debt off the government balance sheet (IMF, 2004).

Estimates suggest that Africa requires infrastructure investment of 5 to 6 per cent of GDP per year. It is estimated that African countries will require about US$18 billion in infrastructure financing, or approximately 6 per cent of GDP, each year this decade. Neither the public sector nor the multilateral development institutions have the capacity to provide more than a small fraction of this investment. If African countries are to get the economic and social infrastructure and other services they need, then the private sector, working in partnership with governments, must play a leading role in bridging the resource gap (On'golo et al., 2006). The aim of PPP contracts are to reduce cost and price; to increase the quality; reduce risks and failures; improve coordination and to share responsibility and capacity (Andersen, Cao, Tvarno and Wang, 2010).

In this regard, Kenya has undertaken numerous studies including, but not limited to draft policy statement on PPPs of 2010; draft Kenya PPP Operating Guidelines of January, 2011 among others which seek to address the institutional framework that will be necessary for the successful implementation of PPPs in the Country. The establishment of a PPP Secretariat and a PPP steering Committee and most recently a PPP unit prove Kenya's commitment to improving its infrastructure (Shendy et al., 2007).

Kenya is committed to the implementation of the PPPs across all sectors to help with economic expansion and stimulate job creation, reduce government sovereign borrowing and associated risks, provide new sources of investment capital for required infrastructure projects, reduce the funding gap for infrastructure estimated at USD 40 billion, utilize efficiencies of the private sector in running public services among others (Ministry of Finance - Republic of Kenya, 2013).
There are 260, 886 km of public roads in Kenya, of which 11 percent, 33 percent and 56 percent are in good, fair and poor condition respectively as at 2009. Currently, funding for Kenyan road sub-sector is obtained from the Exchequer, Local Government, Road Maintenance Levy Fund, Transit Tolls, Agricultural Cess and Development Partners. To meet the road infrastructure goals envisioned in the Vision 2030, additional funds are required for the road sub-sector to bridge the funding gap estimated at Ksh.20 billion yearly, the Government has thus identified PPPs as an extra budgetary source of funds for the sector (Ministry of Transport, Republic of Kenya, 2009).

PPPs offer alternatives to attract new sources of private financing and management while maintaining a public presence in ownership and strategic policy setting. Developing countries are also investing significant resources and government attention to reform their infrastructure sectors and improve the efficiency of infrastructure procurement and management, often through private participation. These partnerships can leverage public funds and offer advantages of contracting with well qualified private enterprises to manage and deliver infrastructure services (Delmon, 2007). More importantly, PPP projects help mobilize competition to drive down project costs and improve innovation (Delmon and Juan, 2008). They require clear goals and objectives, good public leadership, and strong government institutional capacities for effective implementation. Risk allocation - balanced in line with reward - between the public and private partners is key to the success of these partnerships (Delmon, 2007). In addition, PPP enables governments that are already stretched for resources with the present economic climate, to utilize alternative private sector sources of finance while simultaneously gaining the benefits that the private sector can bring in terms of skills and management (Ismail and Ajjia, 2013). Ultimately, PPP can bring greater value for money from the public sector resources (Treasury Taskforce, 1999; Ninth Malaysia Plan, 2006).

Leveraging private sector participation in infrastructure can bring experience, efficiency and finance in providing quality infrastructure services at better value for money than traditional government procurement (Shendy et al., 2011). PPPs can mobilize additional sources of funding and financing for infrastructure. PPPs can help improve project selection, subjecting assumptions to the market test of attracting private finance. Countries with relatively long PPP histories have found that PPPs manage construction better than traditional procurement, with projects coming in on time and on budget more
often. PPPs can also help to ensure adequate maintenance keeps assets in a serviceable condition (The World Bank, 2012). In addition, successful PPPs deliver high-quality services to consumers and the government at significantly lower cost than would be the case with public investment and government provision of the same services. However; PPP projects are plagued with numerous risks which if not managed can prove detrimental to the success of the project; identification and management of risks is therefore critical in any PPP project (IMF, 2004).

Projects procured by PPP tend to be subject to more risks compared to those projects that are procured traditionally because of the complexity of PPPs in terms of documentation, financing, taxation, technical details, sub-agreements et cetera involved in major PPPs (Cheung and Chan, 2011). The nature of risks alters over the duration of the project (Grimsey and Lewis, 2002), in addition, recognition of obstacles at an early stage allows detection of obstacles and enables the PPP stakeholders to avoid them and take mitigation measures (Chan, Lam, Chann, Cheung and Ke, 2010). The underlying rationale behind risk transfer in PPP is that risk should be allocated to the party that is best placed to manage it at the least cost (Glaister, 1999). Thus it is important to note that the management of risks is critical to the success of any PPP project.

Public private partnerships (PPPs) in developing countries have become increasingly popular as a method of initiating public works projects through the private sector. These partnerships range from the construction of physical infrastructure to public administration and the provision of health and services. PPPs have the potential to increase outputs of public goods and the economic benefits associated with them through innovative use of resources as well as managerial expertise. The prevailing idea among development circles is that PPP arrangements, particularly in infrastructure, allow governments and municipalities to shift risks to the private sector. The ultimate objective is to allocate risks in such a way that both the private and the public sector benefit and consumers are well served (The Louis Berger Group, 2006). Echoing the risk allocation principle, the cardinal rule is that obstacles associated with the implementation and delivery of services should be dealt with by the party best able to manage them in a cost effective manner. A wrong risk allocation could easily lead to the failure of a PPP project. If the risks are wrongly allocated then the parties responsible for those risks may not be in capable hands to take the necessary mitigation measures. In the occurrence of an
unexpected incident or failure, the poorly assigned party will be unable to resolve the problem leading to possible downfall to the project (Chan et al., 2010). In at least 50 per cent of all PPPs that reach the implementation stage, unexpected circumstances lead to renegotiations of the original contract to realign risks (The Louis Berger Group, 2006).

1.2 Statement of the Problem

Many governments turn to PPPs because they recognize that more investment in infrastructure is needed, but the government cannot “afford” to undertake infrastructure projects through traditional public procurement. Although this is one of the most common motivations for using PPPs, it is also among the most debated. The extent to which PPPs genuinely enable governments to increase spending on infrastructure depends on the nature of the government’s funding and financing constraints (The World Bank, 2012).

The majority of developing countries have pursued PPPs in infrastructure and other public goods. Worldwide investment in PPPs in the early 1990s reached $131 billion (Thomsen, 2005). However, over the last eight years public-private partnerships have declined. Investors have discovered that the risks associated with these investments are often very costly and the returns are not as high as expected. Projects have unravelled in the face of public protests, investor withdrawal, or as a result of government dissatisfaction (The Louis Berger Group, 2006).

It is not unusual to think along the lines that PPP is only about solving the problem of capital constraint and bureaucracy in the public sector, and as a result, the risk transfer element of PPP is given less attention than it deserves (Chiu and Bosher, 2005). The study by Ke, Wang, Chan and Cheung (2009), confirmed that risk management (including risk identification, risk evaluation, risk allocation, risk management, financial risk, and political risk and market risk) has continued to be one of the main research interests for PPP in recent years. Furthermore, Khasnabis, Dhingra, Mishra and Safi (2010), emphasized the importance of future PPP studies of considering risk and uncertainties. As cited by Chan, Yeung, Wang and Ke (2011), in practice, PPP has been commonly adopted in sectors that offer the most potential for commercial opportunities such as energy supply (Pongsiri, 2004), telecommunications, road and rail transportation (Mass Transit Railway Corporation Limited, 2008), public housing (Hong Kong Efficiency Unit, 2003a), health care and hospitals (Hong Kong Efficiency Unit, 2003b),
water supply and treatment (Grimsey and Lewis, 2002; Chiu and Bosher, 2005), e-Government (Sharma, 2007), life sciences (Chataway and Smith, 2006), container terminals, (Wiegmans et al., 2002), helicopter and vehicle service (Hong Kong Efficient Unit, 2003c), schools (Utt, 1999), correctional facilities (Hong Kong Efficiency Unit, 2003d), and defence (Parker and Hartley, 2003).

Similarly, Kenya has pursued numerous PPP projects, some more successful than others; for instance Mtwapa and Nyali Bridges Concessions signed in 1959; JKIA Cargo terminal (1998); Port of Mombasa Grain Terminal (Build Operate Own; 1998); Malindi Water Utility (5 Year Management Contract; 1999), KPLC (2 Year, Management Contract; 2005), among others. However, with the collapse of the first toll road concession in the Country; the Nairobi Urban Toll Road Concession (which formed part of the larger Northern Corridor Transport Improvement Project) the Kenyan road sub-sector has yet to witness the successful implementation of a PPP road Project.

As documented by the Kenya National Highways Authority (KeNHA), most transport and industrial activities in Kenya are concentrated along the Northern Corridor which connects the sea port of Mombasa to Nairobi, Nakuru, Kisumu, Eldoret and lower borders of Malaba and Busia, Uganda, Rwanda, Burundi and DRC. The Northern Corridor is Kenya’s primary transport artery and provides access through the seaport of Mombasa for its land locked neighbours. The main challenge is that sections of this corridor adjoining major towns and often passing through them are heavily congested and require capacity expansion. The GoK responded to this challenge by offering a section of the corridor to the private sector for expansion and tolling, through concession, under the now defunct Nairobi Urban Toll Road Concession, supported by the World Bank Group. Appendix III illustrates a diagrammatic representation of the Nairobi Urban Toll Road Concession. In an effort to promote private sector participation in financing and managing road infrastructure, the GoK offered a section of the Northern Corridor road passing through Nairobi for tolling. The World Bank financed the advisory services for this concession under National Construction Transport Improvement Project. The process began in 2003 and it was not until 2007 when the bids were invited, under another International Development Association (IDA) financed project. This followed the outcome and recommendations of feasibility studies conducted by internationally recruited consultants. While three firms were pre-qualified, only one consortium submitted a bid. The sponsors
had requested the World Bank Group, among others, for partial financing of the capital investment and provision of guarantees against political risks. However, the World Bank Group could not support the consortium after it emerged that significant changes had occurred over the intervening period (nine years) at both project and country level, rendering the implementation of the project untenable. As a result, the GoK decided to terminate the concessioning process. An important lesson learned from the failed concession is the risk involved in structuring PPPs (World Bank, 2012). This formed the basis of the study.

Risk is inherent in every project. Conventional public sector procurement has tended not to take risk into account adequately, often resulting in unbudgeted cost overruns. In addition the character of infrastructure investments and the nature of PPPs shape the riskiness of any individual project (National Treasury, South Africa, 2004).

This study therefore investigates the risks associated with the delivery of PPP arrangements in the Kenyan Road Sub sector.

1.3 Purpose of the Study
The purpose of this study was to investigate the political, economic and environmental risk factors that affect the successful implementation or delivery of PPP projects in the Kenyan road sub-sector.

1.4 Research Questions
This study attempted to answer the following research questions:

1.4.1 What are the political risk factors that affect the successful implementation of PPP road projects in Kenya?

1.4.2 What are the economic risk factors that affect the successful implementation of PPP road projects in Kenya?

1.4.3 What are the environmental risk factors that affect the successful implementation of PPP road projects in Kenya?
1.5 Significance of the Study

1.5.1 Academicians and Researchers

The study will be useful to academicians and researchers with an interest in gaining greater insight into the correlation between Public Private Partnerships and Risk.

1.5.2 Policy Makers

Policy makers will benefit from this research study by gaining greater knowledge into the field and how the PPPs are affected by the studied risks; and also share knowledge on the importance of risk identification and mitigation in PPP construction projects.

1.5.3 Professionals

The findings presented in this research study will be useful for professionals who desire to broaden the skills and capabilities of their organizations, the research will also provide information and greater insight into risks associated with PPPs.

1.6 Scope of the Study

The geographical scope of the study was limited to Nairobi County owing to the fact that all entities tasked with spearheading PPPs in the Country are based in Nairobi County for instance The World Bank, KeNHA and the PPP Unit. The target population for this study comprised of Roads Engineers, PPP experts, Transport Economists, Insurance Underwriters, Financial Advisors, Consultants (Roads), Risk and Project Management professionals from various public, private and development partner institutions. Data relevant to the study was collected for duration of five weeks beginning 2nd September 2013. The major limitation of this study is the fact that PPP is a relatively new and unexplored mode of public procurement in the country, in effect eliminating the possibility of conducting a case study; further the sample size was also limited to a select few who possessed the experience and knowledge of PPPs.

1.7 Definition of Terms

1.7.1 Risk

The effect of uncertainty on objectives. An effect may be positive, negative or a deviation from the expected. Risk is often described by an event, a change in circumstances or a consequence (ISO Guide 73).
1.7.2 Project
A project is a temporary endeavour undertaken to create a unique product, service or result. (Project Management Institute, 2004).

1.7.3 Project Risk
Project risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on at least one project objective. A risk may have one or more causes and, if it occurs, one or more impacts (Project Management Institute, 2004).

1.7.4 Political Risk
Political risk involves the possibility that political authorities in the host political jurisdiction might interfere with the timely development and/or long-term economic viability of the project (Finnerty, 2007).

1.7.5 Economic Risk
Economic risks are said to transform into financial impacts on the projects. Financial risks are considered as the risks that have a negative impact on the cash flows of the financial plan in a way that endangers project’s viability or limits profitability (Xenidis and Angelides, 2005).

1.7.6 Environmental Risk
The economic or administrative consequences of slow or catastrophic environmental pollution (Delmon, 2009).

1.7.7 Public Private Partnership
The PPP Act 2013, No. 15 of 2013 defines PPP as an arrangement between a contracting authority and a private party under which a private party:

a) undertakes to perform a public function or provide a service on behalf of the contracting authority; and

b) receives a benefit for performing a public function by way of:

i. compensation from a public fund;

ii. charges or fees collected by the private party from users or consumers of a service provided to them; or

iii. a combination of such compensation and such charges or fees; and
c) is generally liable for risks arising from the performance of the function in accordance with the terms of the project agreement. (PPP Act 2013, No.15 of 2013). Appendix IV was extracted to show the various definitions of PPP.

1.8 Chapter Summary

The objective of this chapter was to provide a critical, analytical and constructive theoretical background on risks and PPPs in the road construction industry. The chapter introduces the aspect of leveraging private sector participation to improve road transport infrastructure and also increase efficiency in road transportation. Readers are introduced to the risks to be considered in this research project namely political, economic and environmental risks. The background of the study specifically presented an overview of the need for private sector involvement, with statement of the problem providing justification for the study. The chapter that follows presents a comprehensive review of past literature on the subject and also presents findings from other studies carried out worldwide. Chapter three outlines details on the research design and methodology adopted during the study, while chapter four provides analysis of the data collected. In conclusion, chapter five provides discussions, conclusions and recommendations in line with the research findings from chapter four.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter will present a comprehensive review of past research literatures carried out by researchers worldwide. A discussion derived from the various literatures will be presented covering the three research questions, namely political, economic and environmental risk factors.

2.2 Political Risk FactorsAffecting the Successful Implementation of PPP Projects

Political risk describes the risk of government actions that may endanger a project. Actions can occur at the central, provincial, or local levels of government (Wang et al., 1999). Kapila and Hendrickson (2001) further defined political risk as the possibility that political forces may result in drastic changes in a country’s business environment affecting a firm’s profit and other goals. As documented by Ling and Hoang (2010) examples of macro-political risks include revolutions, civil wars, nationwide strikes, protests, riots, and mass expropriations. Examples of micro-political risks include elective expropriations, discriminatory taxes, and import restrictions directed at specific firms.

Political risks have strong impact on opportunities in public-private partnerships, where the level of perceived political risks determines the costs in these projects (Sachs and Tiong, 2007). Primary political risks include change in law, corruption, delays in approval, expropriation, and reliability (Wang et al., 1999). The project company will not generally be able to avoid or manage this risk and convention insurance coverage may not be a practicable alternative. Wang et al. (1999) argues that political risks should not be overlooked when managing overseas projects, for as Zhi (1995), documents these risks are unfamiliar compared with those in the domestic environment and the effects can be significant particularly for large projects.

With increasing political risks, PPP opportunities become less and the costs of PPPs increase as well (Sachs and Tiong, 2007). However, it is difficult to avoid some overlap with other types of risks since political influence can be so pervasive, particularly in emerging markets where institutions and policies may be evolving (Delmon, 2007).
The success of PPPs depends on the successful identification, allocation, mitigation, and management of risks (Delmon, 2009). Discussed below are various political risks that occupy investors.

2.2.1 Impact of Corruption on PPP Project Implementation

Construction is a $1.7 trillion industry worldwide, amounting to between 5 percent and 7 percent of Gross Domestic Product (GDP) in most countries, it (construction) accounts for a significant part of global gross capital formation- a little under one third. In addition government investment in road transport alone can account for between 2 percent and as high as 3.5 percent of GDP - suggesting that as much as one half of all construction is transport-related, and a considerable majority of government - financed construction (and related corruption) involves transport. Because of construction's central role in development, corruption in the sector can be particularly harmful. In particular, corruption that leads to poor-quality construction or which supports an environment of poor project selection and insufficient maintenance can significantly reduce the economic return to investments (Kenny, 2009).

A general definition of corruption is the misuse of power for private gain either at one's own instigation or in response to inducements. Corruption (including bribery, embezzlement, kickbacks, and fraud) in construction projects undermines the delivery of infrastructure services (Sohail and Cavill, 2008). Corruption manifests itself in many different ways- from the looting of major assets to small-scale bribery, to political and party finance, to corruption both by and within multinationals, and to the interference with organized crime (Cockcroft, 2010). Corruption in the construction industry often results from a combination of deregulating the infrastructure sector; large flow of public money; highly competitive nature of the tendering process; lack of transparent selection criteria for projects, political interference and discretion in investment decisions, the cost of sector assets, monopolistic nature of service delivery, tight margins, close relationships between contractors, subcontractors and project owners and complexity of institutional roles and functions the asymmetry of information between user and provider, or cronyism in the industry (Sohail and Cavill, 2008). Looking at business perceptions, Transparency International's 15 country poll ranked construction as the most corrupt industry (Kenny, 2009). Similarly, a Control Risks survey of international companies which asked if they had lost a bid in the past year because a competitor paid a bribe found that public works /
construction firms were most likely to suggest this had occurred (Bray, 2005). The American Society of Civil Engineers claims that corruption accounts for an estimated $340 billion of worldwide construction costs each year (Sohail and Cavill, 2008).

The Institution of Civil Engineers (United Kingdom) estimates that corruption affects 5 percent of consultancy work (Sohail and Cavill, 2008), in accordance with Alesina and Weder (2002), corruption causes a decrease in investment of foreign and domestic investors, Bo Dal and Rossi (2004), are of the opinion that corruption lowers quality of public infrastructure as the loss of revenue, diversion of public funds, and evasion of taxes associated with corruption mean that governments have less to spend on infrastructure. As Ateljevic and Budack (2010) document, the negative effects of corruption affect the public sector the most. Corrupt rent-seeking makes public procurement and contracts for the construction and maintenance of infrastructure more expensive and increases the amount of funding needed for state investment.

USD 250 billion is spent annually on infrastructure in the developing world alone (Rodriguez, Waite and Wolfe, 2005), that notwithstanding, the construction industry has a worldwide reputation for incidences of corruption, asset misappropriation, and bribery. Transparency International’s Bribe Payers Index in 2005 repeatedly reveals corruption to be greater in construction than in any other sector of the economy (Sohail and Cavill, 2008). More recently according to Transparency International’s Bribe Payer’s Index 2011, agriculture and light manufacturing are perceived to be the least bribery-prone sectors; the public works contracts and construction sector are perceived as most bribery prone sector and ranked last, as it did in 2008 (Hardoon and Heinrich, 2011). These sectors (most bribery-prone) are all characterised by high-value investment and significant government interaction and regulation, both of which provide opportunities and incentives for corruption. Furthermore these sectors are also particularly important from a development perspective, as they require decisions to be made with respect to the use and ownership of a country’s core resources and infrastructure (Kenny, 2009). Appendix V was extracted to show perceptions of foreign bribery by sector. The behaviour of the corruption of government officials will increase the cost of keeping the relationships between the government and the project company. Meanwhile, it will increase the risk of contract breaking by the government (Chan et al., 2011). Likewise it is important to note that corruption has serious repercussions, for instance, at least a
dozen companies were found to have bribed the chief executive of the Lesotho Highlands Water Project (now serving a 12-year jail sentence for taking bribes), and the Lesotho courts have managed to gain convictions of a number of companies who were then debarred by the World Bank for their involvement in the scandal. Corruption in the construction industry covers new build contracts, refurbishment contracts and maintenance contracts (Sohail and Cavill, 2008).

Transparency International’s Global Corruption Report, highlights the devastating impact of corruption in construction such as wasted tender expenses, tendering uncertainty, increased project costs, economic damage, blackmail, criminal prosecutions, fines, blacklisting, brand damage, and reputational risk (Rodriguez et al., 2005). Because of construction’s central role in development, corruption in the sector can be particularly harmful. In particular, corruption that leads to poor-quality construction or which supports an environment of poor project selection and insufficient maintenance can significantly reduce the economic return to investments, and carry high human costs in terms of injury and death. And while there is an undoubted role for the government in the sector both as customer and regulator, there is also a serious concern with the capacity of many governments to adequately fulfil these roles (Kenny, 2009). Appendix VI summarizes the key corruption vulnerabilities in the construction project cycle and infrastructure delivery, outlines the key stakeholders involved and provides examples of the kinds of corruption that might be found at each stage in project delivery.

2.2.2 Impact of Expropriation on PPP Project Implementation

The most direct form of political risk, expropriation occurs when a host country seizes a company’s development rights or facilities and its products for the host country’s own use, usually under the guise of the national interest (Hill, 1998). In addition, expropriation risk means that the government confiscates/expropriates the project without giving reasonable compensation to the project developer and investor. The expropriation can take the form of nationalization of a facility wholesale (rare) or “creeping” expropriation whereby the government changes regulations, taxes, or tariffs after a project is complete to gradually take over the facility and its operating profits (common) (Wang et al., 1999). Similarly, nationalization is the evil twin of expropriation, and occurs when the host country makes and expropriation and hands the property or development rights over to a national company (Hill, 1998). The government of a country may decide to alter the way
assets are owned or managed. An act of the government may therefore reduce or eliminate ownership of, control over, or rights in an asset (Delmon, 2007). It is basic International Law that that a sovereign government has the right to expropriate property within its territory for public purposes. Further the government of a country may decide to alter the way assets are owned or managed. An act of government may therefore reduce or eliminate ownership of, control over, or rights in an asset (Delmon, 2009).

Expropriation of foreign direct investment (FDI) is political and directly related to the nature of political institutions (Li et al., 2005). Countries with relatively poor legal protection of assets, and a high degree of political instability, generally exhibit high rates of expropriation and this makes investment less attractive (Azzimonti and Sarte, 2007). Furthermore, where the government decides that assets currently owned by or under management of the private sector would be better managed by the public sector it can nationalize those assets by confiscating or expropriating them. Most countries have the right to expropriate any asset located in their jurisdictions, subject to restrictions and processes (Delmon, 2009). However, because the international business community frowns on expropriation by host countries, some countries move toward their goal of expropriation in small steps. This ‘creeping expropriation’ can come in the form of increased regulations, confiscatory taxes, limits on the repatriation of currency, changes in exchange rates and forces re-negotiation (Hill, 1998).

The new millennium has brought a new era of expropriation and nationalisation. Venezuela has garnered headlines for its nationalisation and expropriation of oil operations. In February 2007, Hugo Chavez issued Decree No. 5.200, requiring operators in Venezuela’s Orinoco Belt to agree to new contracts with the state oil company, Petróleos de Venezuela SA (PDVSA). If they did not comply, the companies faced expropriation. Venezuela also seized foreign-operated facilities (Bowman, 2007), and ultimately expropriated the Orinoco Belt properties of ExxonMobil and ConocoPhillips. (Bowman, 2007), further documents that Russia used its environmental permitting process to threaten contract cancellation for projects operated by Total and Exxon Mobil. Russia also forced Shell and BP to relinquish the Skhalin-2 and Kovykta gas projects to Gazprom and the state-controlled company Rosneft (Jakarta Post, 2007).

Expropriation risk is one which, in most cases, the project company shall assume or, where possible, shall insure. What is important here is the elements for which the state
may expropriate the assets of the project are not related to the project. Expropriation is an arbitrary action, most often unjustified, but usually it occurs in conjunction with other elements of political and macroeconomic risk. For example, if a currency crisis began with a suspension of convertibility, the next step may be the expropriation of the company’s bank accounts (Craciun, 2011).

Most countries and international law require the government to pay compensation for the seized assets, but issues arise as to what constitutes fair compensation and how long it takes to get it (Delmon, 2009).

2.2.3 Impact of Change in Law on PPP Project Implementation

Wang et al. (1999) and Delmon (2009), categorize change in law as political risk. The introduction of PPP exerts unprecedented pressure on the legal framework as it plays an important role in economic development, regeneration, and mechanism for developing infrastructure. Still, some countries do not have a well-established legal framework for PPP projects and the current legal framework is only supposed to deal with the traditional command and control model. Although PPP involves a great deal of legal structuring and documentation to deal with potential disputes among PPP parties, a “water-tight” legal framework is still lacking (e.g. protection of public interests vs legitimate rights of private sector). Without a well-established legal framework, disputes are inevitable (Chan, Lam, Chan, Cheung and Ke, 2010).

Legislative powers may be used to change laws and pass new laws inconsistent with the arrangements on which the investor is relying for his return on investment (Delmon, 2007). There is no single “model” PPP framework. A government’s PPP framework typically evolves over time, often in response to specific challenges facing the PPP program. In the early stages of a program the emphasis may be on enabling PPPs, and creating and promoting PPP opportunities (The World Bank, 2012). During the concession period, the laws of the host country will change. Any change may have an impact on the project; a project will be subject to the risk of a change in law (or taxation) of the host country or some other country, further legislative powers may be used to change laws or pass new laws inconsistent with the arrangements on which the investor is relying for his return on investment. Change in law risk includes changes in government policies with respect to laws and regulations, methods to address inflation, currency
conversion, rates and methods of taxation, or the method by which electricity tariffs are set and approved (Delmon, 2009). Where many PPPs have already been implemented on an ad-hoc basis, concern about the level of fiscal risk in the PPP program may be the impetus for strengthening the PPP framework. In this case, the focus may be on strengthening control over how PPPs are developed, or improving public financial management for PPPs, as for example in South Africa (The World Bank, 2012). The study of Zhuang et al. (1998) on China found that frequent changes in laws, regulations, and policies present the most serious threat to foreign firms operating there.

One of the important elements of change in law risk is the modification of performance requirements, including output and environmental requirements during the concession period, increasing the cost of output and possibly decreasing production. Such changes may have a substantial impact on the profitability of the project (Delmon, 2009). In addition, change of law and regulations and other government macroscopic economic policies will cause the increase in project costs and decrease in revenue, et cetera (Chan et al., 2011).

In conclusion, Partial Risk Guarantees are designed to catalyze private sector participation in infrastructure projects by mitigating political and government related risks, particularly in countries where a sector is in early stages of reform and the perceived risk of policy reversals and changes to the regulatory framework is high. Such risks are perceived to be high in Kenya and regulatory compliance will be critical to the long term sustainability of concession (World Bank, 2007).

**2.2.3.1 Impact of Change in Taxation on PPP Project Implementation**

In addition, the change in law risk will also include the risk of change in taxation. Increased taxation, or a change in the way taxation is calculated, can have a substantial effect on the financial viability of the project. The authority defining the tax system and the grantor may be entirely separate entities, increasing the risk of retaliatory or discriminatory changes even where host government support is maintained (Delmon, 2009).

In the Mexico’s road concession program, certain tax aspects affected the financial viability of the projects. The 2 percent tax on assets, or the application and calculation of
depreciation and tax credits needed to be modified to accommodate the concession-type projects. However, delays in approval of these amendments and the uncertainty associated with requirements of annual re-approval subjected the private partners to risks (Ruster, 1997).

Risks arising from legal changes that are not determined by the public partner of the contract should be borne by the private consortium (as opposed to risks determined by changes in the legal or contractual framework that affect directly the private partner, which must be borne by the government) (Checherita and Gifford, 2007).

2.2.4 Impact of Public Opposition on PPP Project Implementation

Many citizens are not persuaded that private firms will adequately watch over the public interest. Some fear tolls and other revenues will make private firms wealthy instead of being reinvested into transportation infrastructure (Papajohn, Cui, and Bayraktar, 2011). Where the grantor is a public entity, it takes on a further political risk in that the project is placed in the hands of a private sector entity not necessarily affected by political repercussions of its actions. The public may not understand that the grantor is removed from day-to-day operations of the public service (Delmon, 2009). The danger exists that PPPs will be developed for the most favourable financial transportation projects, leaving unfavourable but needed projects without adequate resources (Buxbaum and Ortiz, 2007).

One other reason for failure is the stakeholders' opinion and public opposition. Whether the proposed project is constant with the interests of the public is important as public opposition can adversely affect the funding for the project from the public sector (El-Gohary, Osman and El-Diaraby, 2006; Grimsey and Lewis, 2004; Zhang and AbouRisk, 2006). Further Chan et al. (2010) assert that PPP in public projects typically incur political and social issues like land resumption, town planning, employment, heritage and environmental protection. These could result in public opposition, overblown costs and delays to the projects. Chan et al. (2010) further document that another common complaint by the public is the high tariff charged for the services provided. More often, the private sector would face political uphill in raising tariff to a level sufficient to cover costs and earn reasonable profits and returns on investment. The participation of the private sector to provide public service will undoubtedly bring innovations and efficiencies in the operation, but may produce a fear of downsizing in the public sector.
To a certain extent, there would be fewer employment opportunities if no regulatory measures were implemented (Li 2003; Li et al., 2005b; Zhang et al., 2006).

2.3 Economic Risk Factors Affecting the Successful Implementation of PPP Projects

Economic risks are said to transform into financial impacts on the projects. Financial risks are considered as the risks that have a negative impact on the cash flows of the financial plan in a way that endangers project’s viability or limits profitability (Xenidis and Angelides, 2005).

Risk and uncertainty characterize situations where the actual outcome of a particular event or activity is likely to deviate from the estimate or forecast value (Raftery, 1994). All construction projects are, by their very nature, economically risky undertakings and projects let on the basis of competitive bids can add to such risks (Creedy, Skitmore and Wong, 2010). There are risks that are repeated in more than one phase (e.g. lack of guarantees), while others are met only once (e.g. high construction costs) (Xenidis and Angelides, 2005). Consequently, economic risks usually translate into financial impacts on the projects (Ling and Hoang, 2010).

2.3.1 Impact of Foreign Exchange Rate Volatility on PPP Project Implementation

Exchange rate risk is the variability in the value of a project, or of an interest in the project, that results from unpredictable variation in the exchange rate (Gray and Irwin, 2003). Currency risk occurs when the revenue or turnover and the expenses of a project are in different denominations (Boyadjin and Associates, 2007). In addition, where the local currency floats freely against other currencies, the currency markets define the relative value of the local currency. Foreign exchange rate risk arises where the local currency’s value decreases relative to the currency of investment or debt, which then increases the cost of debt in local currency and decreases the return on investment in the currency of investment (Delmon, 2007). In most cases financing of a project is achieved with foreign investments. Therefore, special care should be taken in order to avoid currency risks. Such risks could be related to the exchange rate or the ability to exchange local currency to foreign currency or transfer it to foreign bank accounts. Because the revenue and consequently the whole income will be in local currency, while loan repayments and maybe supplies will be in foreign currency, a downfall of the exchange
rates could be very dangerous for the project. Equally dangerous could be any obstacles to convert the currency freely and transfer it abroad. This contingency could generate loss of profit either by preventing exploitation of foreign bank accounts privileges or by additional convertibility costs to lift restrictions (Kapila and Hendrickson, 2001).

Monetary regulation can limit the extent to which local currency (capital, interest, principal, profits, royalties or other monetary benefits) can be converted to foreign currency and to which local and foreign currency can be transferred out of the country. These restrictions cause significant problems for foreign investors and lenders who will want to have access to distributions and debt service in foreign currencies and to service their debt abroad (Delmon, 2007).

There are two types of exchange rate risk: project and financing related. Project exchange rate risk arises when the value of a project’s inputs or outputs depends on the exchange rate. Typical infrastructure projects sell their outputs domestically, so, valued in local currency, revenues usually are not subject to exchange rate risk. But any input that is tradable, even if it is not imported, will have a world price, so its cost, measured in local currency, will vary inversely with the exchange rate. Financing choices affect the amount of exchange rate risk borne by different participants in the project (shareholders, creditors, customers, taxpayers). In particular, loans requiring repayment in foreign currency expose shareholders to exchange rate risk. As a result, shareholders may seek to shape the contractual arrangements to pass on some or all of the risk to the government or customers (through exchange rate guarantees or indexation of the tariff to the exchange rate) (Gray and Irwin, 2003).

An unfavourable change in exchange rates can result in a loss when the revenue received is in one currency but loan repayments are in another currency. Each year developing countries seek billions of dollars of investment in their infrastructure, and private investors, mostly in rich countries, seek places to invest trillions of dollars of new savings (Xenidis and Angelides, 2005).

Private foreign investment in the infrastructure of developing countries would seem to hold great promise. But foreign investors must cope with volatile developing country currencies. Many attempts to do so have created as many problems as they have solved.
Gray and Irwin, 2003). The foreign exchange fluctuation risk is moderately critical during the pre-investment stage of build-operate-transfer (BOT) projects and slightly critical during other BOT stages (Lam and Chow, 1999). Fluctuation in foreign exchange rates is one of the most critical factors causing budget overruns. Where the local currency floats freely against other currencies, the currency markets define the relative value of the local currency (Chua, Wang and Tan, 2003). Foreign exchange rate risk arises where the local currency's value decreases relative to the currency of investment or debt, which then increases the cost of debt in local currency and decreases the return on investment in the currency of investment (Delmon, 2009).

One of the greatest risks to any foreign investor is that of rapid currency depreciation. With revenues mostly in the weak local currency, and debt and equity payments in hard currencies, a massive devaluation of the local currency can undermine profitability and severely strain even the best crafted project (OECD, 1994).

Given the long-term nature of infrastructure contract, a large depreciation of local currency is almost certain. Over the past 25 years developing country currencies lost 72 per cent of their value relative to the US dollar on average – about a fifth lost more than 99 per cent of their value (Gary and Irwin, 2003a). Identification of the host country's foreign exchange exposure is important; this will help the project firm to anticipate changes in the exchange rate. Foreign exchange exposure refers to the risk that future changes in a country's exchange rate will hurt a firm. Foreign exchange exposure can be divided into three categories: transaction exposure, translation exposure, and economic exposure. Transaction exposure is typically defined as the extent to which the income from individual transactions is affected by fluctuation in foreign exchange values. Such exposure includes obligations for the purchase or sale of goods and services at previously agreed prices and the borrowing or lending of funds in foreign currencies. Translation exposure is the impact of currency exchange rate changes on the reported consolidated results and balance sheet of a company. Translation exposure is basically concerned with the present measurement of past events. For instance, the project of Mexico City-Cuernavaca toll road was initially planned to be financed through exchange rate-linked bonds, in amount of US$625 million, 20-year maturity. Because of investor's concerns about currency risk and long-term interest rate volatility, the issue was cut back to US$265 million and 7-year maturity (Ruster, 1997).
Project finance debt is often sourced from foreign lenders, in foreign currencies, yet project revenues are generally dominated in local currency. Where the exchange rate between the currency of revenue and the currency of debt diverge, the cost of debt can increase, often dramatically (Delmon, 2009).

2.3.2 Impact of Interest Rate Volatility on PPP Project Implementation

Interest-rate risk can be a significant risk in PFI projects, both before and after financial close (H.M. Treasury, 2006). The interest rate is a key factor in determining the debt intensity as well as the internal rate of return evaluation which affects the feasibility, construction, and operation of a project. As is the case in fluctuation of foreign exchange rates, the loss due to the fluctuation of interest rates is moderately critical during the pre-investment stage and slightly critical during other stages (Lam et al., 1999). For instance, the currency crisis of Mexico in 1994 exacerbated the difficulties the toll road concessions had already been confronted with by rising interest rates to more than 100 percent in a year for most projects and contributing to Government’s decision to bail out the projects. New toll-roads financing e.g. Tepic – Guadalajara were cancelled at the last minute because of the onset of the crisis (Ruster, 1997).

An adverse movement in interest rate risk may potentially increase borrowing costs for borrowers; reduce returns for investors (CPA Australia, 2008). Similarly, project financed with variable rate debt are subject to the risk that the interest rate charged (based on the market cost of money) will increase more than anticipated, increasing the cost of debt and reducing return on investment (Delmon, 2007).

Timing becomes an important aspect of investment decisions whenever proceeding with an investment alters future investment opportunities. In such cases the decision maker should consider the present value of displaced future opportunities as part of the cost of the current investment (Heaney and Jones, 1990). Interest rates may be charged at a fixed rate, at a variable rate or a floating rate. Project finance debt tends to be fixed rate (Delmon, 2009). The rate stability has significant influence on project cost variance and should be taken into consideration when operating simulations on cost estimation (Wang et al., 2008).
Long-term interest-rate movements can be a significant risk for the Contractor in projects where (i) long-term debt financing is required, (ii) this debt financing provides most of the funding (typically 90-93 percent); and (iii) there is limited debt-service ‘cover’ (i.e. surplus cash flow to protect the lenders against fluctuations in costs including interest-rate movements) or debt-service ‘tail’ (i.e. the period between the final scheduled debt repayment and the end of the Contract) (H.M. Treasury, 2006).

Brailsford et al. (2006) studied three Asian countries (namely Thailand, Malaysia and the Philippines) that embarked on a high interest rate programme to protect the value of their currencies. All of these countries returned to normal market rates within one year with stabilised currencies. They further questioned the use of high interest rate policies to defend the currency, noting that other significant economic consequences can be associated with high interest rates. For example, sharply higher interest rates, if sustained, will lead to a marked slowdown in economic activity.

### 2.3.3 Impact of Inflation on PPP Project Implementation

The inflation rate of a country affects its various financial indices such as the interest rate, rate of return, and currency exchange rate (Lam et al., 1999). Further, several studies have found that a rise in inflation rates affects the risks on construction projects (Lam and Chow 1999; Bing et al., 1999; Shen et al., 2001; Wang et al., 2004). With high inflation, the value of the cash flows received from assets will fall as the country’s currency depreciates on the foreign exchange market. The likelihood of this occurring decreases the attractiveness of foreign investment in the country (Kapila and Hendrickson, 2001).

Inflation rate risk is inherent for long-term construction projects, where prices are not firm for the whole period, but include an indexation clause to a relevant economic parameter, such as producer price index (Checherita and Gifford, 2007). Economists and financial advisers and commentators have long recognised that inflation, in the sense of the tendency of the value of a currency to decline in purchasing power, distorts the picture, not only of the worth of individual assets but of the whole Economy (Wood, 2006). The studies by Lam and Chow (1999); Bing et al. (1999); Shen et al. (2001); Wang et al. (2004) have found rise in inflation to have some bearing on construction projects.
The inflation rate affects the project from the construction to the transfer phase. An increase of the inflation causes increase of production costs (supplies, wages, operation costs, etc.), which is transferred to the product’s or service’s purchase value to cover the losses. Furthermore, this affects negatively the demand as the purchasing power of the end users is also suffering from increases of inflation rates. Therefore, income from revenues can be seriously affected and cause significant deviations from the economic plan of the project. Another impact of inflation increase may refer to the repayment of the loan. If this is agreed on a different currency than the local one, then increase of the inflation and convertibility will cause an unanticipated loss of profit. Problems may also arise by a constant reduction of the general pricing level (deflation). The risks connected with deflation may be more serious than the ones connected with inflation. That is because there is reduced efficiency of the traditional economic means to face such a problem and, therefore, unconventional and extremely interventional measures can be taken (most often related to the monetary policy). If such measures proved inefficient, there would be a worsening of the economic conditions, which mainly affects the productivity and employment. Such an economic environment undermines the viability and profitability of a BOT project (Xenidis and Angelides, 2005).

2.3.4 Impact of Unfavourable Economy on PPP Project Implementation (host country, Country of main stakeholder and international economy)

An unstable economy, without positive perspectives, with underdeveloped stock market and structural deficiencies can jeopardize the viability of the project. The government may be proved unable to ensure agreed guarantees, financing problems may arise and demand for use of project may be far below than expected. Further the economic environment of the countries wherein the main stakeholders are located and operate most of their business may be important for the project’s progress. An economy with deficiencies or lack of stability may adversely affect the status of the domestic companies and therefore impact their capabilities to successfully carry on with undertaken projects. Concerning the international economy, an unfavourable economy will adversely affect the project’s progress, in the current globalized economic environment with the national economies being more linked to each other; any business attempt is linked and affected by the overall business environment. An international economy in recession can be a drawback for the success of the project at all stages of its life cycle (Xenidis and...
Angelides, 2005). An unattractive financial market is often an obstacle to PPP success (Chan et al., 2010).

2.3.5 Impact of Labour and Material Price Fluctuation on PPP Project Implementation

Project profitability may rely on the price of a given commodity. Commodity price risk arises if the actual price of the commodity could change in a way that is contrary to the interests of investors. Commodity prices are usually set by the regional and international market, but may be under the direct control of the government (Delmon, 2007).

As the gap between the demand and supply of labor and material widens during a construction boom, their prices will increase (Chen, 1997), this risk will lead to cost and time overruns and as a result, debt arrangements with banks and investors may be adversely disrupted (Lam and Chow, 1999). The national, state, or local taxes on the materials used in developing a transportation facility and the proceeds derived from operation of a priced facility can impact its financial viability, especially when using taxable debt and/or equity and/or when the PPP production team is based overseas (Federal Highway Administration, 2007).

PPP projects may fall apart due to failure on the part of the private sector participants. In contracting out the PPP projects, the government should ensure that the parties in the private sector consortium are sufficiently competent and financially capable of taking up the projects. Due to a lack of relevant skills and experience of project partners, PPP projects are more complex to procure and implement e.g. London Underground. The operating company of the British National Railways after privatization, Rail-track, had allowed the skills and experience in engineering services and infrastructure operation vital to its success to fall into the hands of its suppliers, making it insolvent in 2001, and causing its replacement by the Network Rail (Higton, 2005).

2.3.6 Impact of Restriction on Repatriation of Funds on PPP Project Implementation

The host country may restrict the repatriation of funds by requiring foreign firms to spend their earnings in the host market (Chua, Wang and Tan, 2003). In India, for example,
there are complicated procedures and documentation to be completed and taxes to be paid before funds can be repatriated (Ling and Hoi, 2006).

### 2.4 Environmental Risk Factors Affecting the Successful Implementation of PPP Projects

For humankind, the environment means, that portion of the earth’s atmosphere system which supports life, and is characterized by its existence. It includes the oceans, the continental landmasses, and the lower atmosphere. The basic structural unit of the biosphere is the ecosystem. Each ecosystem occupies a space in which homogeneous conditions prevail, regardless of scale (World Bank, 1997). Our environment is fast deteriorating in its ability to support life forms, with every large stride taken towards developments; ten strides are taken backward in our failure to protect the environment (UN Habitat, 2006).

A key characteristic of the environment is its compromise between evolution and balance. This dynamic equilibrium is a reflection of the interactions between and within ecosystems. As disturbances arise, a system is thrown off temporarily. It then begins the process of establishing a new balance, which may or may not be the same as before. The amount of time required to re-establish a dynamic equilibrium may range from minutes to tens of thousands of years, depending on the scale of the disruption and the relative fragility of the ecosystem. Road construction and traffic operations, if undertaken without a proper understanding of the relationships inherent in environmental function, can be accompanied by serious disruptions to the environment, from which it may take a long time to regain equilibrium (World Bank, 1997).

Environmental risks are the economic or administrative consequences of slow or catastrophic environmental pollution (Delmon, 2009). According to the United Nations Economic and Social Commission for Asia and the Pacific, environmental risks may be pre-existing conditions or arise during the construction or operation of the project. The issues to consider are compliance with applicable environmental regulations, responsibility for compliance (and failure to comply); the cost of clean-up on abandonment, these issues could affect costs for the project. Delmon (2009), documents that, sponsors and governments will want to consider carefully possible changes in environmental regimes and the potential consequential effects on the project.
It is important to note that the extent of environmental risk will depend to some degree on the parties involved in the financing of the project. For example, a number of the key commercial lenders involved in project financing have signed on to the equator principle which focuses heavily on the importance of environmental responsibility. The Equator Principle is a set of social and environmental benchmarks adopted by most international banks for managing social and environmental issues in project financing transactions. Adoptees of the Principles committed not to finance projects that do not comply with the principles. It now applies globally to all new projects and existing project expansions with capital costs above $10 million. It is important that construction activities are undertaken in accordance with environmental legislation. Penalties for offences against environmental legislation are significant and could have immense impact on the project costs (Delmon, 2009).

Environmental clearance constitutes a particular barrier to public private partnerships; further the risk to private highway projects is greater because these private projects have no revenues until operations begin and usually cannot access the State's revenue flow from highway fees. Environmental risk drives up the required rate of return, adding to the difficulty in securing financing. There is substantial risk of failing to obtain environmental permits resulting in a loss of the entire investment. State, local, or Federal agencies may veto the project on environmental grounds, after the private sector has expended large sums and extensive time for detailed environmental studies (Federal Highway Authority, 2004).

2.4.1 Impact of Loss of Natural Habitat on PPP Project Implementation

The physical encroachment on the land gives rise to disturbance and barrier effects that contribute to the overall habitat fragmentation due to infrastructure (Seiler, 2001). The construction of new roads and railroads inevitably transforms natural habitats into a sealed and highly disturbed environment. Motorways may consume more than 10 hectares of land per kilometer road. Narrow country roads occupy less area per kilometer, but as these roads are more frequent than motorways, their combined effect in the landscape can be considerably larger. If one includes all associated features, such as roadsides, embankments and slope cuttings, parking places, gas stations, or pedestrian walkways, the total area designated for transport is several times larger than the paved surface of the road. In most European countries, the allocation of space for new
infrastructure is a superior problem for land use planning, as it necessarily conflicts with many other interests in the landscape. Not surprisingly, the land taken by roads and railroads plays a central role in Environmental Impact Assessment studies in Europe, forming a general baseline for compensation and mitigation measures in modern infrastructure projects (OECD, 1994).

2.4.2 Impact of Edge Effects and Pollution on PPP Project Implementation

Edge effect in ecology is the result of interaction between two adjacent ecosystems when the two are separated by an abrupt transition (Murica, 1995). Road construction affects the immediate environment due to the need to clear, level, fill, and cut. Construction work changes soil density, landscape relief, surface- and ground water flows. This, in turn, can affect ecosystems, vegetation and fauna in the wider landscape. Wetlands and riparian habitats are especially sensitive to changes in hydrology as caused by road embankments (Findlay and Bourdages, 2000). Road cuttings through slopes may drain aquifers, increase the risk of soil erosion and modify disturbance regimes in riparian networks (Jones, Swanson, Wemple and Snyder, 2000). Potential environmental impacts may include soil erosion and disturbance of water flows, water pollution, traffic disruption, noise, gaseous and dust pollution and temporary disturbance of flora and fauna (mainly during the construction phase) (World Bank, 2012). In the case of construction impact on soils, when natural conditions are modified by the construction of a road, it marks the start of a race between the appearance of erosion and the growth of vegetation. Disturbance during construction can upset the often delicate balance between stabilizing factors, such as vegetation, and others which seek to destabilize, such as running water. Construction further disturbs water flow as highlighted above; diversion of natural surface water flows is often inevitable in road projects. Diversion results in water flowing where it normally would not-such as over vulnerable soils- and in concentration of flows; in both cases, the potential for erosion increases. Erosive flows can also arise from blocked ditches and damaged or inadequate water control structures (World Bank, 1997).

When roads are built, earthworks - essential to site preparation and construction- remove protective vegetation, an action that exposes soils to water and wind erosion. Eroded soils move with surface-water runoff into nearby watercourses or water bodies (Ministry of Roads, Republic of Kenya, 2010).
2.4.3 Impact of Indigenous Peoples on PPP Project Implementation

Indigenous Peoples are distinct communities: the land on which they live and the natural resources on which they depend are inextricably linked to their identities and cultures. Dispossession from the land or restriction of access to natural resources, therefore, brings not only economic impoverishment but also the loss of identity and threatens their cultural survival (World Bank, 2012).

Roads are very crude instruments of economic and social change. Nowhere is this more evident than in areas inhabited by indigenous peoples. The cultural, social, political, and economic integrity that characterizes indigenous peoples renders their lives extremely vulnerable to disruptions from outside. Whether a road is being planned to cross an area inhabited by indigenous peoples or to open up that same area, it will have a marked effect on their lives (World Bank, 1997).

2.4.4 Impact of Cultural Heritage on PPP Project Implementation

The term cultural heritage, also termed cultural property, refers to sites, structures, and remains of archaeological, historical, religious, cultural, or aesthetic value (World Bank, 1997). Kenya’s Culture and national heritage – its prehistoric sites/artifacts as well as places of historical, cultural, scientific and scenic interest- are at risk during development of road- transportation infrastructure. In addition to the road placement and reservations on both sides of it where construction can also take place, the activities and actions associated with site preparation, earthworks, drainage/bridge works and material development are likely to adversely impact resources of cultural and natural significance (Ministry of Roads, Republic of Kenya 2010). A road project may have the following impacts on cultural heritage (i) damage caused by road construction, related works such as quarries and borrow sites, and unregulated access to cultural heritage sites. Such damage could affect the historic, scientific, social, and amenity values; (ii) aesthetic impacts on cultural monuments and archaeological sites; (iii) positive impacts on the amenity value arising from improved access to sites recognized for their cultural value; and on the scientific, historic and social values arising from the addition of interesting sites previously unknown or overlooked; and the updating of the region’s heritage (World Bank, 1997).
2.5  Chapter Summary
The chapter presents a comprehensive literature review of the various risks associated with public private partnership projects and how these risks may affect the successful implementation of PPP construction projects. The section has been divided on the basis of each research question. The chapter that follows discusses in depth the research design and methodology adopted for this study.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction
This chapter outlines and discusses the research methodology that was used in this study. It discusses the research design, describes the nature of the population, research procedure, data collection method and data analysis method. To achieve this objective, the chapter covers the theory of research design, research methods and data collection and analysis methods that the researcher used for the data collection.

3.2 Research Design
Research design is the plan and structure of investigation so conceived as to obtain answers to research questions. Research design expresses both the structure of the research problem - the framework, organization or configuration of the relationships among variables of a study- and the plan of investigation used to obtain empirical evidence on those relationships (Cooper and Schindler, 2008). The research design will contain clear objectives, derived from your research questions, specify the sources from which you intend to collect data and consider the constraints that you will inevitably have (Saunders, Lewis and Thornbill, 2009).

PPP is a relatively new and unexplored mode of public procurement in Kenya, further there is no record of a successful PPP road project in the country, in effect eliminating the possibility of conducting a case study. Hence this research study was exploratory in nature.

Exploration is particularly useful when researchers lack a clear idea of the problems they will meet during the study. Exploration serves other purposes as well. The area of investigation may be so new or so vague that a researcher needs to do an exploration just to learn something about the dilemma (Cooper and Schindler, 2008).

3.3 Population and Sampling Design
3.3.1 Population
Population is the full set of cases from which a sample is taken (Saunders et al., 2009). In addition, population is the total collection of elements about which we which to make
some inferences (Cooper and Schindler, 2008). Populations are operationally defined by the researcher and the population must be accessible and quantifiable and related to the purpose of the research (Balnaves and Caputi, 2001; Kothari, 2004).

The target population for this study comprised of Roads Engineers, PPP experts, Transport Economists, Insurance Agencies, Financial Advisors, Consultants (Roads), and Risk and Project Management professionals from various public, private and development partner institutions. Thus, the target population consisted of 20 respondents drawn as illustrated in the table below.

<table>
<thead>
<tr>
<th>Organization/Institution</th>
<th>Number of Employees</th>
<th>Frequency of Distribution of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>KeNHA</td>
<td>430</td>
<td>12</td>
</tr>
<tr>
<td>PPP UNIT</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>USIU</td>
<td>99</td>
<td>1</td>
</tr>
<tr>
<td>MD VR Technique Consultants</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>African Trade Insurance</td>
<td>32</td>
<td>3</td>
</tr>
<tr>
<td>World Bank</td>
<td>400</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,001</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

3.3.2 Sampling Design

3.3.2.1 Sampling Frame

A sample frame is the listing of all population elements from which the sample will be drawn. Further the population element is the individual participant or object on which the measurement is taken. It is the unit of study (Cooper and Schindler, 2008). Sampling frame is an objective list of the population from which the researcher can make his or her selection. The ultimate test of a sample design is how well it represents the characteristics of the population it purports to represent (Denscombe, 2003). The sampling frame for this research study was derived from development partners i.e. World Bank, and various public and private institutions. It included insurance underwriters, roads engineers, financial advisors, transport economists, roads consultants, risk management and project management professionals and PPP experts.
3.3.2.2 Sampling Technique

The sampling technique used in this study was nonprobability sampling and more specifically purposive judgemental sampling, where the researcher chose the sample based on a criteria to ensure respondents were appropriate for the study. Purposive sampling is a nonprobability sample that conforms to certain criteria (Cooper and Schindler, 2008).

In addition, the target respondents for this research project were selected using purposive sampling based on the following criteria (i) having direct involvement and /or extensive experience in PPP projects within the construction industry, (ii) have gained in-depth working knowledge of PPPs. The researcher aimed to ensure that the population for the study was representative of the public sector, private sector and the development partner’s perspective.

3.3.2.3 Sample Size

In order to generalize from the findings, the sample must not only be carefully selected to be representative of the population, it also needs to include a sufficient number. The answer to the most frequently asked question of "what sample size do I need?" is influenced by a number of factors including: the purpose of the study, population size, the risk of selecting a "bad" sample, available time, budget etcetera. The ultimate test of a sample design is how well it represents the characteristics of the population it purports to represent. In measurement terms the sample must be valid (Denscombe, 2003)

It is important to note that PPPs are a relatively new and unexplored concept in the Kenyan Road Sub sector, in effect reducing the population of study, thus the sample size is relatively small. The table below shows stratification of respondents for the study based on Organization.
Table 3.2: Sample Size Distribution

<table>
<thead>
<tr>
<th>Organization</th>
<th>Sampling Frame of respondents</th>
<th>Percentage of respondents</th>
<th>Sample Size of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>KeNHA</td>
<td>430</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>PPP UNIT</td>
<td>10</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>USIU</td>
<td>99</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>African Trade Insurance</td>
<td>32</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>World Bank</td>
<td>400</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>MD VR Techniche Consultants</td>
<td>30</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>20</strong></td>
<td></td>
</tr>
</tbody>
</table>

Insurers were chosen to form part of the sample, for as Grimsey and Lewis (2004) indicate insurers provide risk enhancement in project financing irrespective of whether the risks are commercial or political. Typically, they work closely with project sponsors and lenders, so as to produce an insurance package that limits risk at an achievable price.

3.4 **Data Collection Methods**

The study involved the collection of primary data through structured questionnaires, which was the main instrument of data collection, personal interviews were also conducted. The questionnaire provided both open and closed ended questions. According to Saunders et al. (2009) a questionnaire refers to the general term including all data collection techniques in which each person is asked to answer the same set of questions in a predetermined order. It includes structured interviews as well. Closed questions helped the respondents make quick decisions chosen among several alternatives while open-ended questions to solicit in-depth insight on the topic of study; this provided qualitative data that corroborated their opinions regarding the subject in question. The questions were constructed and guided using Likert's five point scale. Stangor (2010, p.75), indicates that, a likert scale consists of a series of items that indicate agreement or disagreement with the issue that is to be measured, each with a set of responses on which the respondents indicate their opinions.

3.5 **Research Procedure**

The research instruments used in the study was developed based on the research questions. Pre-testing was carried out by administering the questionnaire to a few respondents who were selected randomly from the sample size. The pre-testing
ascertained the suitability of the tool before the actual administration. This enabled the researcher to fine tune the questionnaire for objectivity and efficiency of the process.

Each respondent received a cover letter and a copy of the questionnaire. The cover letter provided the purpose of the study and assured confidentiality of responses. Respondents took on average 6 weeks to complete and revert the questionnaires.

3.6 Data Analysis Methods
Data analysis is the act of organizing and summarizing a mass of raw data into meaningful form (Healey, 2011). The data collected for this study was analysed using the Statistical Package for Social Sciences (SPSS) Software. As documented by Ismail and Ajija (2013), the descriptive statistic of mean score was computed for the five-point Likert scale on the importance of each of the risk factors. Then, based on the mean scores, the factors were ranked according to importance, as perceived by the overall respondents. The same technique was adopted for the purposes of this study, where all fifteen (15) risk factors were analysed to provide the mean scores, thereafter the results ranked and presented graphically.

Descriptive statistics allow researchers to summarize large quantities of data using measures that are easily understood by an observer. The descriptive statistics obtained from the survey described the basic features of the data in the study. This provided simple summaries about the samples and the measures (Healey, 2011).

The completed questionnaires were retrieved from the respondents. For ease of analysis, data from the questionnaires was sorted, organized and entered into SPSS for quantitative analysis. The researcher employed the use of descriptive statistical techniques such as tables, charts to aid in the analysis and interpretation of data collected. Mean score ranking technique was employed to establish the importance of the risk factors as identified in the literature review. In addition, the use of inferential statistical techniques such as Cronbach’s Alpha and Kendall’s Coefficient of Concordance was employed.
3.7 Chapter Summary

The chapter described the methodology used in conducting the study, explored and presented definitions and justifications for the research design, population, sample and sampling design. For this study, data collection method included personal interviews, questionnaires as well as secondary data from related journals and publications from scholars around the world. The chapter finally explained the data collection method including presentations and analysis techniques used in the study. The chapter that follows presents a comprehensive analysis and subsequent interpretation of the data collected.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter provides for the statistics, analysis and subsequent interpretation of all the data collected. The data obtained was analysed using the SPSS version 20 software. The results of the analysis were presented in the form of tables, bar charts. The purpose of the study was to investigate the risk factors that affect implementation of PPP projects in the Kenyan Road Subsector. Survey questionnaires were distributed to 20 target respondents. A total of 13 completed questionnaires were returned, in addition to one interview questionnaire. One questionnaire was rejected because it did not meet the basic criteria set out in chapter 3; section 3.3.1. The questionnaire consisted of two sections; section I sought to collect general information of respondents, section II presented respondents with a five point scale for ranking the risk factors, this section was divided into three parts in line with the three research questions as presented in chapter one, section 1.4.

The study realized a response rate as shown in figure 4.1 below. The chapter begins with descriptive analysis of the general information as per the survey questionnaire. Thereafter analysis of each risk sub factor is presented, followed by inferential analysis of data collected.

![Figure 4.1: Response Rate](image-url)
Figure 4.1 above indicates that sixty per cent of the sample population responded to the questionnaires, while forty per cent of respondents failed to respond to the survey questionnaires.

4.2  General Information of Respondents
General information regarding the respondents’ backgrounds was recorded including the number of years they have been involved with PPP projects, the number of PPP projects they have participated in, area of specialization et cetera.

4.2.1  Area of Specialization and Distribution of Respondents
A large proportion of the respondents (60 percent) represented the public sector, 40 percent represented private organizations where one respondent represented the academia with over 10 years’ experience in PPP projects. Figure 4.2 below illustrates the distribution of respondents by area of specialization. The findings imply that a majority of the respondents were from the engineering fraternity.

![Figure 4.2: Area of Specialization](image-url)
4.2.2 Years of Experience
All respondents who participated in the interviews either had hands-on experience with PPP projects or had in-depth knowledge of PPPs. A majority (58 percent) had 5 years or less PPP experience. Approximately 16 percent of the respondents had in-depth knowledge, whereas 8.33 percent had 6-10 years’ experience and the remaining 16 percent had 11 years and over. Thus the findings implied that a majority of the respondents has less than 5 years of experience in PPP projects.

<table>
<thead>
<tr>
<th>Years of Experience</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 5 Years</td>
<td>7</td>
<td>58%</td>
</tr>
<tr>
<td>No experience</td>
<td>2</td>
<td>16%</td>
</tr>
<tr>
<td>6 - 10 Years</td>
<td>1</td>
<td>8.33%</td>
</tr>
<tr>
<td>11 Years and above</td>
<td>2</td>
<td>16%</td>
</tr>
</tbody>
</table>

4.2.3 Number of PPP Projects Participated in
Respondents were requested to indicate the number of years they had participated in PPP projects. A few of the respondents for this study had experience with running PPP projects. Respondents had executed at least one PPP project. The findings indicated that a majority of respondents had participated in more than one (1) PPP projects.

<table>
<thead>
<tr>
<th>No. of PPP Projects Participated in</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td>None</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>4 and above</td>
<td>2</td>
</tr>
</tbody>
</table>

4.3 Political Risk Factors Affecting the Successful Implementation of PPP Projects
The study sought to determine the extent to which corruption, expropriation, and change in law and taxation and public opposition affect the successful implementation of PPP projects in the Kenyan Road Subsector. Graphical and tabulated presentations of the findings from the data analysis are illustrated below.
4.3.1 Impact of Corruption on PPP Project Implementation

The study aimed to establish extent to which corruption affects the implementation of PPP projects. The figure below indicates that 33.3 percent of respondents were of the opinion that corruption was both a significant and very significant factor in project implementation, 25 percent of respondents were of the opinion that corruption was an extremely significant factor that affected PPP project implementation, while 8.3 percent of the respondents rated corruption as a fairly significant factor with regard to project implementation. The results revealed that a majority of respondents viewed corruption as both significant and very significant factors that affect project implementation.

<table>
<thead>
<tr>
<th>Level of significance</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairly Significant</td>
<td>8%</td>
</tr>
<tr>
<td>Significant</td>
<td>33%</td>
</tr>
<tr>
<td>Very Significant</td>
<td>33%</td>
</tr>
<tr>
<td>Extremely Significant</td>
<td>25%</td>
</tr>
</tbody>
</table>

Figure 4.3: Impact of Corruption on PPP Project Implementation

4.3.2 Impact of Expropriation on PPP Project Implementation

The study aimed to establish extent to which expropriation affects the implementation of PPP projects. Figure 4.4 below indicates that 33.3 percent of respondents were of the opinion that expropriation was not a significant factor, similarly 33.3 percent of respondents were of the opinion that expropriation was a fairly significant factor that affected project implementation, while 25 percent and 8.3 percent of the respondents were of the opinion that expropriation were significant and extremely significant factors respectively. The analysis of findings revealed that a majority of respondents perceive expropriation as both a not significant and fairly significant factors that affect project implementation.
4.3.3 Impact of Change in Law on PPP Project Implementation

The study aimed to establish extent to which change in law affects the implementation of PPP projects. The figure below illustrates that 50 percent of respondents were of the opinion that change in law was very significant, 33.3 percent of respondents were of the opinion that change in law was an extremely significant factor, while 8.3 percent of the respondents were of the opinion that change in law was fairly significant and significant factors respectively. In effect, the results indicated that a majority of respondents perceive change in law as a very significant factor as regards PPP project implementation.
4.3.4 Impact of Change in Taxation on PPP Project Implementation

The study aimed to establish the extent to which changes in law affects the implementation of PPP projects. Figure 4.6 below illustrates that 75 percent of respondents were of the opinion that changes in taxation was a significant factor, 16.7 percent of respondents were of the opinion that change in taxation was a very significant factor, while 8.3 percent of the respondents were of the opinion that change in law was a fairly significant factor. Essentially, the results implied that a majority of respondents rated change in taxation as both significant and very significant factors that affect project implementation.

![Figure 4.6: Impact of Taxation on PPP Project Implementation](image)

### Impact of Taxation on PPP Project Implementation

<table>
<thead>
<tr>
<th>Level of significance</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant</td>
<td>33.30%</td>
</tr>
<tr>
<td>Very Significant</td>
<td>33.30%</td>
</tr>
<tr>
<td>Fairly Significant</td>
<td>16.70%</td>
</tr>
<tr>
<td>Extremely Significant</td>
<td>16.70%</td>
</tr>
</tbody>
</table>

4.3.5 Impact of Public Opposition on PPP Project Implementation

The study aimed to establish extent to which public opposition affects implementation of PPP projects. Figure 4.7 below illustrates that 33.3 percent of respondents were of the opinion that public opposition was both a significant and very significant factor to consider during project implementation, another 16.7 percent of respondents rated public opposition a fairly significant factor, while 8.3 percent of the respondents rated public opposition as both not Significant and extremely significant factors as regards hindrance to project implementation. Effectively, the findings indicated that a majority of respondents perceived public opposition as both significant and very significant factors that affect project implementation.
4.4 Economic Risk Factors Affecting the Successful Implementation of PPP Projects

4.4.1 Impact of Foreign Exchange Rate Volatility on PPP Project Implementation

The study sought to establish extent to which foreign exchange rate volatility (FEV) affects implementation of PPP projects. Figure 4.8 below illustrates that none of the respondents found FEV both “not significant” and significant, while 66.7 percent found FEV extremely significant, 16.7 percent found FEV significant and 8.3 percent were of the opinion that FEV was both fairly and very significant respectively. Thus, the results indicated that a majority of respondents perceive foreign exchange rate volatility as an extremely significant factor that affects PPP project implementation.
Figure 4.8: Impact of Foreign Exchange Rate Volatility on PPP Project Implementation

4.4.2 Impact of Interest Rate Volatility (IRV) on PPP Project Implementation

The study sought to establish extent to which IRV affects implementation of PPP projects. Figure 4.9 below illustrates that none of the respondents found that IRV was “not significant” and “fairly significant”, a majority of respondents (58.3 percent) found that IRV was a significant factor, while 25 percent and 16.7 percent rated IRV as Very Significant and Extremely Significant respectively. Effectively, the findings implied that a majority of respondents perceive interest rate volatility as a significant factor as regards its effect on PPP project implementation.

Figure 4.9: Impact on Interest Rate Volatility on PPP Project Implementation
4.4.3 Impact of Inflation on PPP Project Implementation

The study aimed to establish extent to which inflation affects implementation of PPP projects. Figure 4.10 illustrates that a majority of respondents, 41.7 percent rated inflation as a very significant factor, 25 percent of respondents rated inflation as very significant and fairly significant, while 8.3 percent rated inflation fairly significant. Thus, the results revealed that a majority of respondents perceive inflation as a very significant factor as regards its effect on PPP project implementation.

![Figure 4.10: Impact of Inflation on PPP Project Implementation](image)

4.4.4 Impact of Unfavourable Economy on PPP Project Implementation

The study aimed to establish extent to which unfavourable economy affects implementation of PPP projects. Figure 4.11 below illustrates that a majority of respondents (41.7 percent) were in agreement that unfavourable economy was a significant factor, 25 percent of respondents rated unfavourable economy as very significant and extremely significant, 8.3 percent of respondents were of the opinion that unfavourable economy was a fairly significant factor with regard to its impact on PPP project implementation. The results indicated that a majority of respondents were of the opinion that unfavourable economy is a significant factor that affects project implementation.
Impact of Unfavourable Economy on PPP Project Implementation

The study aimed to establish extent to which labour and material price fluctuation affects implementation of PPP projects. Figure 4.12 below illustrates that 58.3 percent of respondents were of the opinion that labour and material price fluctuation was a very significant factor, 25 percent of respondents rated labour and material price fluctuation as significant, while 16.7 percent of the respondents rated labour and material price fluctuation as extremely significant. Thus, the results implied that a majority of respondents were of the opinion that labour and material price fluctuation is an extremely significant factor that affects project implementation.
4.4.6 Impact of Restriction on Repatriation of Funds on PPP Project Implementation

The study aimed to establish extent to which restriction on repatriation of funds affects the implementation of PPP projects. The table below illustrates that 33.3 percent of respondents rated restrictions on repatriation of funds as significant, 25 percent of respondents rated restriction on repatriation of funds as a fairly significant and very significant, while 8.3 percent of the respondents rated restriction on repatriation of funds as not significant and extremely factors respectively. Results indicated that a majority of the respondents perceived restriction on repatriation of funds as a significant factor as regards its effect on PPP project implementation.

Table 4.3: Frequency Distribution of Restriction on Repatriation of Funds

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant</td>
<td>4</td>
</tr>
<tr>
<td>Fairly Significant</td>
<td>3</td>
</tr>
<tr>
<td>Very Significant</td>
<td>3</td>
</tr>
<tr>
<td>Not Significant</td>
<td>1</td>
</tr>
<tr>
<td>Extremely Significant</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

4.5 Environmental Risk Factors Affecting the Successful Implementation PPP Projects

4.5.1 Impact of Loss of Natural Habitat on PPP Project Implementation

The study aimed to establish extent to which loss of natural habitat affects the implementation of PPP projects. The chart below illustrates that 58.3 percent of respondents rated loss of natural habitat as a significant factor, 33.3 percent and 8.3 percent of respondents were of the opinion that loss of natural habitat were very significant and fairly significant factors respectively. The findings implied that a majority of respondents were of the opinion that loss of natural habitat significantly affects PPP project implementation.
4.5.2 Impact of Edge Effects and Pollution on PPP Project Implementation

The study aimed to establish extent to which edge effects and pollution affects the implementation of PPP projects. The chart below illustrates that 50 percent of respondents rated edge effects and pollution as significant, 41.7 percent of respondents were of the opinion that edge effects and pollution was a fairly significant factor, while 8.3 percent rated edge effects and pollution as a very significant factor that affects project implementation. Thus, the findings illustrated that a majority of respondents were of the opinion that edge effects and pollution significantly affect project implementation.
4.5.3 Impact of Indigenous Peoples on PPP Project Implementation
The study aimed to establish extent to which change in law affects the implementation of PPP projects. The figure below illustrates that 50 percent of respondents were of the opinion that indigenous peoples was a fairly significant factor that would affect project implementation, 33.3 percent of respondents were of the opinion that indigenous peoples was not a significant factor that affects project implementation, while 16.7 percent of the respondents were of the opinion that indigenous peoples was a significant factor. Effectively, the findings indicated that a majority of respondents were of the opinion that indigenous peoples are a fairly significant factor to consider during project implementation.

![Figure 4.15: Impact of Indigenous Peoples on PPP Project Implementation](image)

4.5.4 Impact of Cultural Heritage on PPP Project Implementation
The study sought to establish extent to which cultural heritage affects the implementation of PPP projects. The figure below illustrates that 75 percent of respondents were of the opinion that cultural heritage was not a significant factor, 16.7 percent of respondents were of the opinion that cultural heritage was a fairly significant factor, while 8.3 percent of the respondents were of the opinion that cultural heritage was significant factors to be considered during project implementation. The findings indicated that a majority of respondents were of the opinion that cultural heritage is not a significant that affects project implementation.
4.6 Analysis by use of Descriptive and Inferential Statistics

4.6.1 Mean Score Ranking of Risk Sub Factors

The researcher conducted a questionnaire survey and carried out interviews. The respondents were requested to rate the degree to which they support each of the identified risk factors using a five point Likert Scale (with 1 being "Not Significant", 2 being "Fairly significant", 3 being "Significant", 4 being "Very Significant", 5 being "Extremely Significant"). According to Lind and Mason (2002), the mean is the most widely used and reported measure of central tendency, further as Chan et al. (2011) documents the mean score ranking technique is also a common technique used to analyse the results obtained by questionnaire surveys (Chan et al., 2009; Chan et al., 2010). Based on this, the data collected for this study was analysed using a similar technique. The Likert scale was used to calculate the mean score for each Risk Sub Factor which was subsequently used in ranking the Risk Sub Factors in descending order of importance. Table 10 below illustrates the mean score ranking and standard deviation of the Risk Sub Factors.
4.6.2 Kendall's Coefficient of Concordance

In addition to the mean score ranking of risk factors, Kendall’s Concordance analysis was performed on the data collected. As documented by Chan, Yeung, Yu, Wang and Ke (2011), the values of Kendall’s coefficient of concordance were calculated to measure the internal agreement within the same group of respondents on the rankings of different risk factors of PPP projects. A high or significant value of $W$ indicated that different respondents rank the risk factors consistently. Cheung et al. (2011) argues if the Kendall’s coefficient of concordance ($W$) was statistically significant at a predefined significance level of 0.05, for example, a reasonable degree of agreement among the respondents within the group on the rankings of risk factors was indicated.

For this study the researcher found the Kendall’s Coefficient of Concordance ($W$) to be 0.04 implying a reasonable degree of agreement among respondents within the group on rankings of risk factors.
4.6.3 Reliability of Results _ Cronbach’s Alpha

Further, the use of the Cronbach Alpha was employed to aid in ascertaining the reliability of respondents, for as documented by Chan et al. (2011) Cronbach’s alpha was used to measure the reliability of the survey respondents. The value can range from negative infinity to 1, where a score closer to 1 would indicate a higher degree of reliability (Cronbach, 1951). For this study the Cronbach’s alpha was 0.759 based on the standardized items, as shown in the table below.

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.746</td>
<td>.759</td>
<td>15</td>
</tr>
</tbody>
</table>

The value of Cronbach's alpha was calculated to be 0.759 based on the standardized items, indicating a high level of uniformity among the survey responses.

4.7 Chapter Summary

The chapter presented the statistical analysis of data collected analysis was conducted in line with the methodology outlined in the proceeding chapter. The purpose of the study was to investigate the risk factors that affect implementation of PPP projects in the Kenyan Road Subsector. Survey questionnaires were distributed to 20 target respondents. A total of 13 completed questionnaires were returned, in addition to one interview questionnaire. One questionnaire was rejected due to the fact that it did not meet the basic criteria set out in chapter 3; section 3.3.1. Results from the analysis of the general information revealed that a majority of the respondents were Engineers. Further, results of the specific questions were ranked in order of descending importance; the analysis revealed that foreign exchange rate volatility was a very significant factor that affects PPP project implementation with a mean score of 4.33, while cultural heritage was ranked the least significant factor with a mean score of 1.33. In conclusion, reliability of respondents was calculated using the Cronbach’s Alpha, which was found to be 0.759, this indicated that there was a high level of uniformity among responses. The chapter that follows discusses the research findings from the current chapter, provides conclusions and makes recommendations for further study and improvement.
CHAPTER FIVE

5.0 DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes and discusses the findings from the previous chapter, presents conclusions and makes recommendations for further study. The chapter begins with a summary of the study, followed by the discussions guided by the research questions. Conclusions are thereafter drawn in line with the discussions. In conclusion, recommendations for further studies are provided.

5.2 Summary

The purpose of this study was to investigate the risk factors that affect the successful implementation of PPP projects in the Kenyan road subsector; this investigation was guided by three research questions. The study sought to answer the following questions (i) What are the political risk factors that affect the successful implementation of PPP projects in the Kenyan road subsector, (ii) What are the economic risk factors that affect the successful implementation of PPP projects in the Kenyan road subsector, (iii) What are the environmental risk factors that affect the successful implementation of PPP projects in the Kenyan road subsector.

PPP is a relatively new and unexplored mode of public procurement in the Kenya, further there is no record of a successful PPP road project in the country, in effect eliminating the possibility of conducting a case study. Thus, the use of an exploratory research design was employed with the population of study being mainly roads engineers.

A sample size of 20 respondents was identified and data collected with the help of structured questionnaires, interviews. The research procedure included pre-testing by administering questionnaires to some respondents who were selected randomly from the sample size. Each respondent received a cover letter and a copy of the questionnaire. The cover letter provided the purpose of the study and assured confidentiality of responses. Respondents took on average five weeks to complete and revert the questionnaires. The data collected for this study was analysed using the Statistical Package for Social Sciences (SPSS) Software. The researcher employed the use of descriptive statistical techniques such as tables, charts to aid in the analysis and interpretation of data collected.
Mean score ranking technique was employed to establish the importance of the risk factors as identified in the literature review. In addition, the use of inferential statistical techniques such as Cronbach’s Alpha and Kendall’s Coefficient of Concordance was employed. Data was analysed using the SPSS software, findings were thereafter presented. In total, 15 risk factors were studied. Major findings from the study are summarized below.

Sixty per cent of the sample population responded to the questionnaires, while forty per cent of respondents failed to respond to the survey questionnaires. Mean scores were calculated for the fifteen (15) risk factors, with the highest value being 4.33 whereas the lowest mean score value was found to be 1.33. Severity of the factors was rated using a five point Likert Scale where 1 = Not significant, 2 = Fairly Significant, 3 = Significant, 4 = Very Significant and 5 = Extremely Significant.

With regard to the political risk group, mean score for factors in this group averaged 3.334. Out of the studied political risks, change in law was perceived as a very significant factor, with an overall mean score of 4.08 out of the possible 5.0. Change in law was perceived 2nd most critical risk that affects project implementation.

With reference to the economic risk factors, mean score for factors in this category averaged 3.72. Out of the identified economic risks, foreign exchange rate volatility was ranked as very significant with an overall mean score of 4.33 out of the possible 5.0. It was perceived as the most critical risk.

In conclusion, mean score for risk factors in the environmental risk category averaged 2.27. Loss of natural habitat was ranked 10th, with an overall mean score of 3.25, and is thus perceived to be a significant factor.

5.3 Discussions
5.3.1 Political Risk Factors Affecting the Successful Implementation of PPP Projects

As discussed in literature review, corruption is an issue of major importance in the construction industry. Transparency International ranks Kenya as highly corrupt at
number 139 out of the 174 countries assessed with a score of 27 (ranked on a scale of 0-100; the lower the score the more corrupt), Transparency International asserts that in SSA 90 percent of countries score below fifty. The study established that corruption was ranked 5th with a mean score of 3.75, a majority of respondents rated corruption as significant and very significant factors that affect PPP project implementation. These results are similar to those by Chan et al. (2011) who ranked corruption sixth in their study. Further according to On’golo et al. (2006) PPPs offer far greater latitude for manipulations by foreign or local firms or government officials that are hard for the public and anti-corruption systems to spot. In Kenya for example, the government’s planned 25-year concessions for sections of its road network that form part of the Northern Corridor received a setback following evidence of attempted diversion of funds.

Respondents attached little significance to expropriation as it was rated both not significant and fairly significant by a majority (33 percent). Expropriation was ranked 13th with a mean score of 2.16. The findings of this study agree with that of Chan et al. (2011) whose study ranked expropriation 30th out of the 34 risks assessed. This implied that the risk factor is not significant with regard to its effect on project implementation and was classified as an insignificant risk.

The study established that a majority of respondents attached most importance to change in law as regards its effect on PPP project implementation, 50 percent of respondents ranked change in law as a very significant factor to consider during project implementation and was ranked second among the 15 risk factors. The results of this study agree with the findings of the study conducted by Wang, Fadhil and Aguirra (2004); Chan et al. (2011) where the results of their study ranked change in law second most critical risk. The IMF (2004), cite that an appropriate legal framework can provide assurance to the private sector that contracts will be honoured. In recognition of the significance attached to Change in law, it is important to note that up until the year 2013 Kenya lacked a well-established legal framework for governing the operation of PPPs. The Public Private Partnership Act 2013, was enacted in January 2013 as an act of Parliament, it is hoped that this act will ensure a conducive environment for the operation of PPP’s in the country and also provide incentive to ensure that PPP are a viable option for public procurement.
As per the research findings, change in taxation was perceived as both significant and very significant factors by a majority of the respondents, and was ranked 8th with a mean score of 3.5. This, however, is in contrast to the findings by Chan et al. (2011) whose study ranked changes in tax regulation 29th out of the 34 risks assessed, and was classified as a moderate risk.

Public opposition was ranked 10th with a mean score of 3.166, and was rated as both significant and very significant factor that affects PPP project implementation. These results of the study conducted by Chan et al. (2011) ranked public opposition 33rd out of the 34 risks assessed; this implied that the risk factor is not significant.

5.3.2 Economic Risk Factors Affecting the Successful Implementation of PPP Projects

The study established that a majority of respondents attached most importance to the impact of foreign exchange rate volatility on PPP project implementation, 67 percent of respondents rated exchange rate volatility as extremely significant factor to consider in project implementation and was ranked first among the 15 risk factors with a mean score of 4.33. The results of this study agree with that carried out by Ling and Hoang (2010), who assess the unpredictability of exchange rate fluctuation in Vietnam, they assert that the exceptional risk faced by foreign firms is the unpredictable way in which the Vietnamese Dong is pegged to the U.S. Dollar and the Euro. Similarly the Kenyan shilling is quite unpredictable; this poses a risk to investors. Research on the exchange rate history reveals that between 1993 and 2013, the US Dollar/ Kenya Shilling rate averaged 75.80 reaching its peak of 105.75 in October of 2011 and a record low of 36.23 in January of 1993. Changes in the foreign exchange market are hard to predict possibly due to volatility of the market. Furthermore, currency inconvertibility and exchange rate fluctuation leads to cost over runs for projects. In addition, the findings agrees with that conducted by Lam and Chow (1999), which reveals that the foreign exchange rate fluctuation risk is moderately critical during the pre-investment stage of build-operate-transfer (BOT) projects and slightly critical during other BOT stages.

A respondent however stated the fact that PPP contracts should in essence incorporate contractual provisions that would help mitigate the risk of foreign exchange volatility. Further Lam and Chow (1999), state that a guarantee from the government on fixed
exchange rate is helpful in mitigating this risk. In addition, the respondent asserts that foreign exchange rate volatility and interest rate volatility would only be of major significance in countries whose economies were increasingly unpredictable. Regardless of the economic conditions, project planners should always subject projects to stress tests for the large declines in economic growth and devaluations.

The study established that majority of respondents rated interest rate volatility as a significant factor to consider in PPP Project implementation, with a mean score of 3.58 the risk factor was ranked 7th. The results of this study agree with the study conducted by Lam and Chow (1999), who assert that the loss due to the fluctuation in interest rates is moderately critical during the pre-investment stage and slightly critical during other stages, further Ling and Hoang (2010), assert that Shen et al. (2001) also found the risk due to the fluctuation of interest rates to be moderately critical. The results of this study further agree with those carried out by Chan et al. (2011) in their study interest rate fluctuation was ranked 7th and is said to be a common concern for PPP projects worldwide.

A majority of respondents (41.7 percent) rated inflation as a very significant risk factor, with a mean score of 3.83 and was ranked 4th. The results of the study correspond with findings from Ling and Hoang (2010); Lam and Chow(1999); Bing et al. (1999); Shen et al. (2001); Wang et al. (2004) who document that a rise in inflation rates affects the risks on construction projects. Inflation rate as at June 2012 stood at 10.05 percent as opposed to 4.91 percent as at June 2013 (Kenya National Bureau of Statistics), further the inflation rate reduced from a high of 18 percent in early 2012. Thus the frequent fluctuations in inflation are a cause for concern to investors.

The study established that a majority of respondents perceived unfavourable economy as a significant factor with regard to its effect on PPP project implementation, ranked sixth with a mean score of 3.66. A number of respondents noted that economic policy changes abruptly with a change in government; this in turn has adverse effects on the economy as a whole which eventually affects these PPP projects.

Labour and material price fluctuation was perceived as a very significant factor that affects PPP project implementation, ranked 3rd with a mean score of 3.92. PPPs require
specialized skill sets that few possess, thus procuring competent professionals is very costly for the parties involved. As the concept gains momentum, more PPP experts will be required and competition for the few experts will cause a greater increase in labour prices. Increased demand for construction materials will cause a subsequent increase in price.

Respondents perceived restriction on repatriation of funds of significant importance with respect to PPP project implementation, and was ranked the 11th risk factor with a mean score of 3.00. A majority of respondents were of the opinion that this risk factor was not of great significance in the Kenyan context. Kenya is seen as liberal with laws regarding the repatriation of funds.

5.3.3 Environmental Risk Factors Affecting the Successful Implementation of PPP

The study established that the overall environmental risk was ranked last among the three categories with a mean score of 2.27. The results of this study agree with those of Chan et al. (2011) whose study also ranked environmental risk last with a mean score of 2.96.

In this category, the study established that a majority of respondents attached most importance to impact of loss of natural habitat on project implementation, 58 percent of respondents rated loss of natural habitat as a significant to consider in project implementation and was ranked ninth among the 15 risk factors with a mean score of 3.25. Study established that a majority of respondents perceived edge effects and pollution as a significant factor to be considered in implementation of PPP projects, the risk factor was ranked 12th with a mean score of 2.66. The study established that a majority of respondents perceived the impact of indigenous peoples on PPP project implementation as fairly significant, and was ranked 14th with a mean score of 1.83. Cultural heritage was viewed as least important risk factor with 75 percent of respondents rating the risk factor as not significant, it was ranked 15th with a mean score of 1.33.

In general environmental risks were viewed as least important as regards its effects on roads project implementation. The reason behind this may be due to the fact that entities responsible for the construction projects are required to perform Environmental Impact assessments, which is an assessment of the impact a project will have on the environment,
both positive and negative. The Environmental Impact Assessment is required by National Environment Management Authority laws for road projects.

As evidenced in the literature review the extent of environmental risk will depend to some degree on the parties involved in the financing of the project, in this regard a number of international banks have signed on to the equator principle which focuses heavily on environmental responsibility. Kenya being a developing country relies on international development banks for financing of such projects. Thus, ensuring environmental responsibility on our part would be a prerequisite that the banks would require. Penalties for non-compliance are grave and could impact project costs and investor withdrawal.

5.4 Conclusions
This section presents the major conclusions drawn from the research findings on the basis of the research questions.

5.4.1 Political Risk Factors Affecting the Successful Implementation of PPP Projects
Negative political influence can debilitate uptake of PPP arrangements, significantly hindering progress. Political and government commitment is a critical success factor for the implementation of PPP projects. Setting up successful PPPs requires buy-in from the senior most government and political officials. Good political leadership is a necessity that will ensure PPPs achieve their objectives, designating a competent high level PPP champion to spearhead the program will ensure transparency, accountability and stakeholder buy-in. To ensure PPPs gain a foothold in Kenya, both the legislative and executive branches of the GoK enacted laws to help facilitate such arrangements through the Kenya PPP ACT.

5.4.2 Economic Risk Factors Affecting the Successful Implementation of PPP Projects
Initially the main reason for engaging in PPPs was solely to reduce the funding gap but as a general rule, ensuring that a PPP arrangement provides value for money and efficiency in the provision of public services should be the main focus of any government. PPPs require a comprehensive and extensive economic analysis to underpin decision making.
This study was able to determine in order of severity the most significant risk factors as follows: (1) Foreign exchange rate volatility, (2) Labour and material price fluctuation, (3) Inflation, (4) Unfavourable economy, (5) Interest Rate Volatility, (6) Restriction on repatriation of funds.

5.4.3 Environmental Risk Factors Affecting the Successful Implementation of PPP

Construction of roads leads to the degradation of the natural environment and displacement of people. PPP project officers should be well equipped in the identification, quantification and mitigation of the environmental risks inherent in road construction. Environmental impacts of road development will impact projects financially, thus environmental impact assessments (EIA) are necessary. Effect of road construction on the environmental and the social aspects of the community have triggered concern of development partners, in effect partners require compliance to environmental guidelines as a prerequisite for disbursement of funds for project implementation, thus greatly reducing effect of road construction on the environment. This study was able to determine in order of severity the most significant environmental risk factors as follows: (1) Loss of Natural habitat, (2) Edge effects and Pollution, (3) Indigenous Peoples, (4) Cultural Heritage.

In conclusion, all respondents unanimously agreed with the fact that a risk based/ adjusted PPP model is essential to the viability of PPP projects for the following reasons: (1) It allows for the identification, quantification, mitigation and allocation of risks; (2) Risk costing is an essential component in quantifying risk allocation to the participant parties; (3) Provides for value for money determination; (4) To improve PPP efficiency; (5) Facilitate forward planning; (6) Identification of risk mitigation strategies; (7) Allows parties involved to identify impact of risks of the project; and (8) Allows parties involved to estimate likelihood of risks occurring.

5.5 Recommendations

5.5.1 Recommendations for Improvement

This section offers suggestions for improvement with justification from past literature reviews.
5.5.1.1 Political Risk Factors Affecting the Successful Implementation of PPP Projects in the Kenyan Road Sub Sector

Firstly, where applicable the parties involved should furnish themselves with political risk insurance. With regard to corruption the government should enforce strict laws to reduce corruption. Prosecuting corrupt officials and blacklisting companies found to be corrupt should be enforced to eliminate the occurrence and frequency of corruption activities. Thirdly, as regards laws governing PPPs, an effective mechanism for conflict resolution should be provided; with obligations of parties involved clearly stated. As regards public opposition of PPP infrastructure projects, stakeholder buy-in from the genesis of the project is of utmost importance. In conclusion, opportunistic behaviours and political risk can be mitigated by ensuring checks and balances, transparency, accountability and consultation with major stakeholders through-out the project lifecycle.

5.5.1.2 Economic Risk Factors Affecting the Successful Implementation of PPP Projects

As asserted by a respondent, PPP contracts should in essence incorporate contractual provisions that would help mitigate most economic risk. It is advised that to curb foreign exchange volatility, interest rate volatility and inflation product and service price should be set in a stable foreign currency e.g. the Euro, the American Dollar or the Sterling Pound. Further, it is recommended that feasibility study is conducted to assess the viability of the project before its inception. Provision of contingency in the project budget is further recommended. As regards labour and material price fluctuations, it is recommended that the parties involved purchase competitive priced goods in advance from suppliers as well as employ the use of alternative materials and procurement methods when price fluctuation is significant. In general, having clear contractual provisions for the agreed exchange rate, currency of payment and method of payment should be stipulated to help guard against severe fluctuations in the economic climate.

5.5.1.3 Environmental Risk Factors Affecting the Successful Implementation of PPP Projects

As regards environmental risks, it is recommended that, organizations/ institutions abide by the environmental laws to alleviate possibility of risks that may deter project progress. Governments should also gazette cultural heritage sites to ensure they are adequately
protected. Plans should be prepared to guide project team on how to handle persons affected by the project through displacement.

In conclusion, it is recommended that the Kenyan PPP program be driven solely by the Central Government as opposed to the County Governments as this would ensure standardization, consistency and stability in the PPP market. Having 47 unique PPP markets would dissuade private participation and increase costs.

5.5.2 Recommendations for Further Studies

Further research on the risks that affect PPP project implementation in road construction should be undertaken. Many scholars have identified different risk categories; as a guide Delmon (2009); Chan et al. (2011) provide major risk categories. In addition, research on the development of a generic risk assessment/management model and an equitable risk allocation mechanism for the construction industry at a national level is recommended. This model would help with overall profitability, increase efficiency and ensure project objectives are achieved by the organizations employing the model. In conclusion, researchers should consider conducting research on risk mitigation strategies for PPP construction projects.
REFERENCES


Mining, Oil & Gas Law, Development, and Investment, Rocky Mineral Law Foundation.


Hong Kong Efficiency Unit. (2003a). Transfer of Government PRIME Estate to the Private Sector. *Hong Kong Special Administrative Region Government*.

Hong Kong Efficiency Unit. (2003b). Case Summary: University College London Hospital (UCLH) redevelopment—Improving the standard of healthcare by public private partnership. *Hong Kong Special Administrative Region Government*.

Hong Kong Efficiency Unit. (2003c). Case Summary: Provision of Helicopter Services by Public Private Partnerships Victoria, Austria. *Hong Kong Special Administrative Region Government*. 

69
Hong Kong Efficiency Unit. (2003d). Case Summary: Prisons Operated by Public Private Partnerships Victoria, Austria. *Hong Kong Special Administrative Region Government.*


APPENDICES

Appendix I: Summary of Kenya's Road Network Conditions by road class and surface type.

<table>
<thead>
<tr>
<th>ROAD CLASS</th>
<th>Surface Type</th>
<th>Length in Kilometres</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>International Trunk Roads (A)</td>
<td>Paved</td>
<td>1684</td>
<td>783</td>
<td>304</td>
<td>2772</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unpaved</td>
<td>47</td>
<td>412</td>
<td>357</td>
<td>816</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>1731</td>
<td>1196</td>
<td>661</td>
<td>3588</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition (%)</td>
<td>48%</td>
<td>33%</td>
<td>18%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>National Trunk Roads (B)</td>
<td>Paved</td>
<td>599</td>
<td>795</td>
<td>95</td>
<td>1489</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unpaved</td>
<td>196</td>
<td>710</td>
<td>251</td>
<td>1156</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>795</td>
<td>1504</td>
<td>346</td>
<td>2645</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition (%)</td>
<td>30%</td>
<td>57%</td>
<td>13%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Primary Roads (C)</td>
<td>Paved</td>
<td>1196</td>
<td>1056</td>
<td>441</td>
<td>2693</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unpaved</td>
<td>1251</td>
<td>2647</td>
<td>1265</td>
<td>5164</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>2448</td>
<td>3703</td>
<td>1706</td>
<td>7857</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition (%)</td>
<td>31%</td>
<td>47%</td>
<td>22%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Secondary Roads (D)</td>
<td>Paved</td>
<td>439</td>
<td>483</td>
<td>317</td>
<td>1238</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unpaved</td>
<td>1833</td>
<td>5266</td>
<td>2383</td>
<td>9483</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>2272</td>
<td>5749</td>
<td>2701</td>
<td>10721</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition (%)</td>
<td>21%</td>
<td>54%</td>
<td>25%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Minor Roads (E)</td>
<td>Paved</td>
<td>124</td>
<td>236</td>
<td>217</td>
<td>577</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unpaved</td>
<td>2916</td>
<td>13481</td>
<td>9910</td>
<td>26071</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>3040</td>
<td>13481</td>
<td>10128</td>
<td>26649</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition (%)</td>
<td>11%</td>
<td>51%</td>
<td>38%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Roads (SPR)</td>
<td>Paved</td>
<td>23</td>
<td>49</td>
<td>38</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unpaved</td>
<td>1211</td>
<td>5306</td>
<td>3859</td>
<td>10376</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>1234</td>
<td>5355</td>
<td>3896</td>
<td>10486</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition (%)</td>
<td>12%</td>
<td>51%</td>
<td>37%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Total Classified Network</td>
<td>Paved</td>
<td>4065</td>
<td>3402</td>
<td>1413</td>
<td>8879</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unpaved</td>
<td>7454</td>
<td>27587</td>
<td>18025</td>
<td>53066</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>11519</td>
<td>30988</td>
<td>19438</td>
<td>61945</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition (%)</td>
<td>19%</td>
<td>50%</td>
<td>31%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Unclassified Network</td>
<td>Paved</td>
<td>632</td>
<td>749</td>
<td>937</td>
<td>2318</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unpaved</td>
<td>5129</td>
<td>21086</td>
<td>70408</td>
<td>96623</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>5761</td>
<td>21835</td>
<td>71345</td>
<td>98941</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition (%)</td>
<td>6%</td>
<td>22%</td>
<td>72%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>National Network</td>
<td>Paved</td>
<td>4697</td>
<td>4150</td>
<td>2350</td>
<td>11197</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unpaved</td>
<td>12583</td>
<td>48673</td>
<td>88433</td>
<td>149689</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>17280</td>
<td>52823</td>
<td>90784</td>
<td>160886</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition (%)</td>
<td>11%</td>
<td>33%</td>
<td>56%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Road Sector Improvement Programme (2011)
Appendix II: Trans African Highway

The map below was extracted to illustrate international road conditions across Africa.

Source: KeNHA
Appendix III: Nairobi Urban Toll Road Concession

Schematic Map of Greater Nairobi, depicting Uhuru Highway along the Northern Corridor (sections 1-5 and 6) and the new Bypass (section 7).

### Appendix IV: Various definitions of PPP

The table below was extracted to illustrate the various definitions of PPPs across the World.

<table>
<thead>
<tr>
<th>Sources</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>HM Treasury</td>
<td>An arrangement between two or more entities that enables them to work cooperatively towards shared or compatible objectives and in which there is some degree of shared authority and responsibility, joint investment of resources, shared risk taking, and mutual benefit.</td>
</tr>
<tr>
<td>The World Bank</td>
<td>The term “public-private partnerships” has taken on a very broad meaning. The key elements, however, are the existence of a “partnership” style approach to the provision of infrastructure as opposed to an arm’s-length “supplier” relationship…Either each party takes responsibilities for an element of the total enterprise and they work together, or both parties take joint responsibility for each element…A PPP involves a sharing of risk, responsibility, and reward, and it is undertaken in those circumstances when there is a value-for-money benefit to the taxpayers.</td>
</tr>
<tr>
<td>European Commission</td>
<td>A partnership is an arrangement between two or more parties who have agreed to work cooperatively toward shared and/or compatible objectives and in which there is shared authority and responsibility; joint investment of resources; shared liability or risk-taking; and ideally mutual benefits.</td>
</tr>
<tr>
<td>Canadian Council for Public Private Partnerships</td>
<td>PPP is a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks, and rewards.</td>
</tr>
</tbody>
</table>

Source: Kwak, Chih and Ibbs (2009).
Appendix V: Perceptions of Foreign Bribery by Sector

Sectors are scored on a scale of 0-10, where a maximum score of 10 corresponds with the view that companies in that sector never bribe and a 0 corresponds with the view that they always do.

<table>
<thead>
<tr>
<th>RANK</th>
<th>SECTOR</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agriculture</td>
<td>7.1</td>
</tr>
<tr>
<td>1</td>
<td>Light Manufacturing</td>
<td>7.1</td>
</tr>
<tr>
<td>3</td>
<td>Civilian Aerospace</td>
<td>7.0</td>
</tr>
<tr>
<td>3</td>
<td>Information Technology</td>
<td>7.0</td>
</tr>
<tr>
<td>5</td>
<td>Banking and Finance</td>
<td>6.9</td>
</tr>
<tr>
<td>5</td>
<td>Forestry</td>
<td>6.9</td>
</tr>
<tr>
<td>7</td>
<td>Consumer Services</td>
<td>6.8</td>
</tr>
<tr>
<td>8</td>
<td>Telecommunication</td>
<td>6.7</td>
</tr>
<tr>
<td>8</td>
<td>Transportation and Storage</td>
<td>6.7</td>
</tr>
<tr>
<td>10</td>
<td>Arms, Defence and Military</td>
<td>6.6</td>
</tr>
<tr>
<td>10</td>
<td>Fisheries</td>
<td>6.6</td>
</tr>
<tr>
<td>12</td>
<td>Heavy Manufacturing</td>
<td>6.5</td>
</tr>
<tr>
<td>13</td>
<td>Pharmaceutical and healthcare</td>
<td>6.4</td>
</tr>
<tr>
<td>13</td>
<td>Power generation and transmission</td>
<td>6.4</td>
</tr>
<tr>
<td>15</td>
<td>Mining</td>
<td>6.3</td>
</tr>
<tr>
<td>16</td>
<td>Oil and Gas</td>
<td>6.2</td>
</tr>
<tr>
<td>17</td>
<td>Real Estate, Property, Legal and Business Services</td>
<td>6.1</td>
</tr>
<tr>
<td>17</td>
<td>Utilities</td>
<td>6.1</td>
</tr>
<tr>
<td>19</td>
<td>Public Works Contracts and Construction</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Source: [www.transparency.org](http://www.transparency.org); Authors: Hardoon and Heinrich (2011)
### Appendix VI: Examples of Corruption in the Different Stages of Infrastructure Delivery

<table>
<thead>
<tr>
<th>Stage of service delivery</th>
<th>Key stakeholders</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project selection</td>
<td>Public clients</td>
<td>- Corruption can negatively affect the selection of projects. For example, corruption can divert resources away from social sectors and toward major infrastructure projects.</td>
</tr>
<tr>
<td></td>
<td>Private clients</td>
<td>- Corruption may also encourage the selection of uneconomical projects because of opportunities for financial kickbacks and political patronage.</td>
</tr>
<tr>
<td>Planning stages</td>
<td>Public clients</td>
<td>- Project used as vote winners/opportunities for personal gain not on basis of priority/availability of financial resources.</td>
</tr>
<tr>
<td></td>
<td>Private clients</td>
<td>- Planning in favour of high value infrastructure (white elephant projects) and against the interest of the poor.</td>
</tr>
<tr>
<td></td>
<td>Financiers</td>
<td>- Project requirements may be overstated or tailored to fit one specific bidder.</td>
</tr>
<tr>
<td></td>
<td>Legal advisors</td>
<td></td>
</tr>
<tr>
<td>Inspection stages</td>
<td>Regulatory authorities</td>
<td>- Weak oversight and supervision mechanisms have been created that would prevent detection of fraud and corruption.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Kickbacks can be given to persuade inspectors to turn a blind eye to slow implementation of projects, unfulfilled contract requirements, and other instances of malpractice.</td>
</tr>
<tr>
<td></td>
<td>Public clients</td>
<td>- Overdesigned and overpriced projects to increase potential corrupt earnings during implementation.</td>
</tr>
<tr>
<td></td>
<td>Private Clients</td>
<td>- Bribe for favourable environmental impact assessment or planning proposal/approval.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Project design has been manipulated to benefit particular suppliers, consultants, contractors, and other private parties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The timing of the project has been altered to suit vested interests.</td>
</tr>
<tr>
<td>Bid and contract signing stage</td>
<td>Contractors</td>
<td>- Political parties levy large rents on international businesses in return for government contracts.</td>
</tr>
<tr>
<td></td>
<td>Subcontractors</td>
<td>- Lack of competitive/inequitable contract practices.</td>
</tr>
<tr>
<td></td>
<td>Suppliers</td>
<td>- Officials take percentages on government contracts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Officials receive excessive “hospitality” from government contractors and benefits in kind.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Inappropriate bidding procedures; excessively short bidding time of insufficient or inadequate advertising of tender.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Kickbacks for construction and supply contracts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The entrance fee, for example, a public authority agrees to give a private company the contract, provided that the company pays a fee. The company that pays the highest entrance fee wins the concession.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Corrupt practice on the part of bidders (e.g., unjustified complaints, misleading bids, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Compensation payments included in the tender price: when two firms collude, and one prices itself out of one of the jobs and receives a compensation payment from the other as a reward.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cash-plus contracts enable unscrupulous firms to inflate the value of the contract.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Collusion among firms or between public officials and bidders.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Bid rigging in construction contracts can be facilitated by corrupt project managers and quantity surveyors (people who are supposed to be policing contracts and making sure the clients get value for money)</td>
</tr>
<tr>
<td>Construction</td>
<td>Contractors</td>
<td>- Changing subcontract party after receiving bribes.</td>
</tr>
<tr>
<td></td>
<td>Subcontractors</td>
<td>- Cutting corners, ignoring rules, bypassing procedures.</td>
</tr>
<tr>
<td></td>
<td>Suppliers</td>
<td>- Payment for equipment, materials or services which were not supplied.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The provision of equipment or goods of lower than specified quality (typical examples include lesser cement or steel reinforcements).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Concealing substandard work.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Unauthorized use of project property.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Theft of materials, equipment, or services.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Entrepreneurs and brokers that exist as “fixers” facilitating relations between</td>
</tr>
</tbody>
</table>
government and business players and negotiate the various administrative and legal steps.
- Bribe the relevant official to certify that the work was done according to specification.
- Non-implementation.
- Unjustified complaints from contractors as a way to obtain unjustified contract price increases.
- Duplication of payments, alteration of invoices, lack of supporting records, ineligible payments, overbilling, misuse of funds i.e. for purposes other than those aligned to project needs, misappropriation of discounts from suppliers/contractors, unauthorized payments, etc.

<table>
<thead>
<tr>
<th>Service Delivery</th>
<th>Public Clients</th>
<th>Private Clients</th>
<th>Contractors</th>
<th>Subcontractors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ghost/absent workers</td>
<td>Siphoning off supplies to the market</td>
<td>Favouritism in hiring/promotions</td>
<td>Use of contracts/money to get better/ faster services or to prevent delays</td>
</tr>
<tr>
<td></td>
<td>Elite capture of infrastructure services</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maintenance and management stages</th>
<th>Public clients</th>
<th>Private clients</th>
<th>Contractors</th>
<th>Subcontractors</th>
<th>Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corruption in procurement of equipment and spare parts</td>
<td>Withholding needed approval/ signatures of gifts/favours</td>
<td>Corruption increases costs meaning lack of resources for O&amp;M</td>
<td>Bribes to win O&amp;M contracts/personnel appointments</td>
<td>Lower standard of construction creates need for expensive repair and maintenance.</td>
</tr>
<tr>
<td></td>
<td>Author: Sohail and Cavil., 2008</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix VII: Questionnaire

Ogot Yellen Oketch, 
United States International University, 
P.O. Box 14634 – 00800, 
Nairobi.

Dear Sir/Madam, 

I am a student at United States International University pursuing Masters of Science in Business Administration currently carrying out research on the Risk Factors that affect implementation of Public Private Partnership Projects in the Kenyan Road Subsector. This is in partial fulfillment of the requirement for the Masters of Science in Business Administration program at the United States International University.

Please note that any information given will be treated extremely confidential and at no instance will it be used for any other purpose other than for this project.

Your assistance will be highly appreciated. I look forward to your response.

Thank you in Advance.

Yours Faithfully,

Yellen Oketch Ogot
Researcher
AN INVESTIGATION OF POLITICAL, ECONOMIC AND ENVIRONMENTAL RISK FACTORS THAT AFFECT THE SUCCESSFUL IMPLEMENTATION OF PUBLIC PRIVATE PARTNERSHIP PROJECTS IN THE KENYAN ROAD SUB SECTOR.

Please note that the information obtained from this survey will be used strictly for an academic exercise and will be treated with utmost confidentiality.

SECTION I: GENERAL INFORMATION

Kindly answer all the questions by ticking in the boxes provided after each question or by filling in the spaces provided.

1. Name of the Organization you are affiliated with……………………………………

2. Area of Specialization
   Engineering ☐ Insurance ☐
   Banking ☐ PPP Expert ☐
   Risk Management ☐ Legal Advisor ☐
   Other (Please Specify)☐........................................................................................................

3. Title / Position ……………………………

4. Do you have working knowledge of PPPs?
   Yes ☐ No ☐

5. In your opinion, is a risk adjusted/based PPP model* a necessity in project implementation?
   Yes ☐ No ☐

6. If Yes, Please state reasons why.
   __________________________________________________________________________________________
   __________________________________________________________________________________________
   __________________________________________________________________________________________
   __________________________________________________________________________________________
   __________________________________________________________________________________________
   __________________________________________________________________________________________
   __________________________________________________________________________________________
   __________________________________________________________________________________________

* A risk-adjusted PPP model is the base PPP model plus a corresponding costing for all the risks associated with undertaking the project.
7. Years of PPP Experience
   □ No Experience (Please proceed to section II)
   □ 1 - 5 years
   □ 6 – 10 years □ 11 years and above

8. Number of PPP Projects Participated in.
   1 □ 2 □
   3 □ 4 □ Above 4 □

9. Type of Sector
   □ Roads and Bridges □ Railways
   □ Health □ Water and Sanitation
   □ Aviation □ Power and Energy
   □ Ports □ Telecommunications
   □ Defense
   □ Other (Please Specify) .................................................................

10. Capacity held .................................................................
SECTION II: POLITICAL RISK

11. Political risks associated with PPP projects might negatively impact the implementation of these projects. Please indicate the extent to which you support how the following variables affect the implementation of PPP projects. (1 = Not Significant, 5 = Extremely Significant). Tick where appropriate.

<table>
<thead>
<tr>
<th>Not Significant</th>
<th>Fairly Significant</th>
<th>Significant</th>
<th>Very Significant</th>
<th>Extremely Significant</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

(a) Corruption (including bribery, embezzlement, fraud,)

(b) Expropriation

(c) Change in Law

(d) Change in Taxation

(e) Public Opposition

12. Please state any other aspect of political risk which is not mentioned herein, that you think affects the implementation of PPPs.

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
SECTION III: ECONOMIC RISK

13. Economic risks associated with PPP projects negatively impact the implementation of these projects. Please indicate the extent to which you support how the following variables affect the implementation of PPP projects. (1 = Not Significant, 5 = Extremely Significant). Tick where appropriate.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Not Significant</th>
<th>Fairly Significant</th>
<th>Significant</th>
<th>Very Significant</th>
<th>Extremely Significant</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Foreign Exchange Rate Volatility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Interest Rate Volatility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Inflation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Unfavourable economy (host country, international)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) Labour and Material Price Fluctuation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(f) Restriction on repatriation of funds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. Please state any other aspect of economic risk which is not mentioned herein, that you think affects the implementation of PPPs.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

87
SECTION IV: ENVIRONMENTAL RISK

15. Environmental risks associated with PPP projects negatively impact the implementation of these projects. Please indicate the extent to which you support how the following variables affect the implementation of PPP projects. (1 = Not Significant, 5 = Extremely Significant). Tick where appropriate.

<table>
<thead>
<tr>
<th></th>
<th>Not Significant</th>
<th>Fairly Significant</th>
<th>Significant</th>
<th>Very Significant</th>
<th>Extremely Significant</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Loss of Natural Habitat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Edge Effects and Pollution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Indigenous Peoples</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Cultural Heritage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Please state any other aspect of environmental risk which is not mentioned herein, that you think affects the implementation of PPPs.

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

THANK YOU FOR YOUR VALUABLE TIME AND INPUT