SUSTAINABILITY OF WORLD BANK FUNDED PROJECTS IN KENYA

PAUL KIPYEGON SANG (B.A; MBA., KU)
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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university. No part of this thesis should be reproduced without authority of the author and/or Kenyatta University.

Signature…… Date……

Paul Kipyegon Sang (B.A; MBA., KU)
D86/12004/2009
Management Science Department

We confirm that the work in this thesis was carried out by the candidate under our supervision.

Signature…… Date……

Prof. Nelson H.W Wawire (PhD)
Associate Professor of Economics
Department of Applied Economics
School of Economics
Kenyatta University

Signature…… Date……

Prof. Charles Ombuki (PhD)
Associate Professor of Economics
Department of Economics
School of Business and Economics
Machakos University College

Signature……..Date……

Dr. Stephen M.A Muathe (PhD)
Senior Lecturer
Department of Business Administration
School of Business
Kenyatta University

DEDICATION

To my wife Evaline Chepngetich Sang, our children Gerald Kiprotich Sang , Ian Kibet Yegon Sang and Seraphine Chepchumba Sang for their support and encouragement throughout my PhD study.

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TABLE OF CONTENTS

Dedication ..... **iii**
Acknowledgements ..... **iv**
Table of Contents ..... **v**
List of Tables ..... **viii**
List of Figures ..... **ix**
Abbreviations and Acronyms ..... **x**
Operational Definition of Terms ..... **xi**
Abstract ..... **xiii**
CHAPTER ONE: INTRODUCTION **1**
1.1 Background of the Study 1
1.1.1 Role of Projects in Economic Growth 1
1.1.2 World Bank Funded Projects in Kenya 5
1.2 Statement of the Problem 7
1.3 The Objectives of the Study 9
1.4 Hypotheses 9
1.5 Significance of the Study 10
1.6 Scope of the Study 10
1.7 Organization of the Study 11
CHAPTER TWO: LITERATURE REVIEW **12**
2.1 Introduction 12
2.2 Theoretical Literature Review 12
2.2.1 Systems Theory 12
2.2.2. Contingency Theory 13
2.2.3 Resource Based Theory and Sustainability 14
2.3 Empirical Literature 15
2.3.1 Sustainability of World Bank Funded Projects 17
2.3.2 Factors Affecting Sustainability 18
2.4 Critique of Literature and Research gaps 26
CHAPTER THREE: RESEARCH METHODOLOGY **33**

3.1 Introduction....33
3.2 Research Paradigm....33
3.3 Research Design....33
3.4 Empirical Model....34
3.5 Definition and Measurement of Variables....38
3.6 Profile of World Bank Funded Projects in Kenya....40
3.7 Target Population....42
3.8 Data Collection Instrument....43
3.9 Reliability and validity of the instruments....43
3.10 Data Collection Procedures....45
3.11 Data Entry and Refinement....45
3.12 Data Analysis....46
3.13 Research Ethics....46
CHAPTER FOUR: EMPIRICAL RESULTS AND DISCUSSIONS....48
4.1 Introduction....48
4.2 Response Rate....48
4.3 Descriptive Statistics....49
4.3.1 Respondents characteristics....49
4.3.2 Project Sustainability....50
4.3.3 Determinants of Project Sustainability....57
4.4 Inferential Statistics....68
4.4.1 Factor Analysis Results....69
4.4.2 Multicollinearity Test Results....71
4.4.3 Regression Results and Interpretation....74
CHAPTER FIVE: SUMMARY, CONCLUSION AND POLICY IMPLICATIONS80
5.1 Introduction....80
5.2 Summary....80
5.3 Conclusion....82
5.4 Contribution to Knowledge....84
5.5 Policy Implications....85

5.6 Limitations of the Study and Areas for Further Research 87
References 89
APPENDICES.....97
Appendix I: Tables 97
Appendix II: World Bank Project Cycle 101
Appendix III: Research Instrument 102
Appendix IV: Research Permit.....112

LIST OF TABLES

Pg.

Table 3.1: Definition and Measurement of Variables……..……...…..… 38

Table 4.1: Respondents' Characteristics ……..……..…..… 49

Table 4.2: Project Sustainability ……..……..…….. 51

Table 4.3: Effects of Institutional Factors on Project Sustainability……..……. 58

Table 4.4: Technical Factors and Project Sustainability ……..……... 62

Table 4.5: Political Factors and Project Sustainability……..… 64

Table 4.6: Extent to which Economic Factors affect Project Sustainability……...…. 67

Table 4.7: Factor Analysis Results……..…….....…... 70

Table 4.8: Multicollinearity Test results ……..……..……..…..… 72

Table 4.9: Logit Regression Results ……..…... 75

Table A1: OED Ratings of Project Performance for Kenya and Comparator Countries 97

Table A2: World Bank Completed Projects between 2000-2012……. 97

Table A3: Reliability Test Results……..……..…. 99

Table A4: Classification Table……..……..…… 99

Table A5: Correlations Coefficient of Individual Factors……. 100

.

LIST OF FIGURES

Pg.

Figure 1.1: Trends in Project Funding in Kenya……..…… 2

Figure 1.2: Lending Amount per Year in Kenya……. 3

Figure 2.1: Conceptual Framework……... 29

Figure 3.1: Geo-Referenced World Bank Funded Projects in Kenya (2000-2012)… 41

ABBREVIATIONS AND ACRONYMS

ADB	:	Asian Development Bank
AfDB	:	Africa Development Bank
AUSAID	:	Australian Agency for International Development
CDF	:	Cumulative Distribution Function
IBRD	:	International Bank for Reconstruction and Development
ICSID	:	International Centre for Settlement of Investment Disputes
IDA	:	International Development Aid
IEG	:	Independent Evaluation Group
IFAD	:	International Fund for Agricultural Development
IFC	:	International Finance Corporation
IPRA	:	International Project Risk Assessment
KAPP	:	Kenya Agricultural Productivity Project
LPM	:	Linear Probability Model
MIGA	:	Multilateral Investment Guarantee Agency
MSME	:	Micro Small and Medium Enterprises
ODA	:	Official Development Assistance
OED	:	Operations Evaluation Department
OLS	:	Ordinary Least Square
PM	:	Project Management
PMO	:	Project Management Office
RBS	:	Risk Breakdown Structure
WBG	:	World Bank Group

OPERATIONAL DEFINITION OF TERMS

Economic factors**:**	Economic issues such as exchange rate, interest rate and inflation.
Influence diagram**:**	Graphical representation of the structure of the decision context such that decisions, uncertain events, consequences and their interrelationships are graphically enumerated.
Institutional factors**:**	Factors associated with the institutional setup within which the project is implemented such as stakeholder involvement in project sustainability.
Projects**:**	Any undertakings involving a unique set of activities and tasks done within a set of constraints to meet specified objectives.
Project management**:**	Planning, delegating, monitoring and control of all aspects of the project so as to achieve the project objectives within the expected performance targets.
Project sustainability:	The continual flow of benefits from the project after the major finance has withdrawn the funding.
Political factors**:**	Factors such as political leadership and change in legislation.
Risk**:**	Probability that something may go wrong, and if it does, will adversely affect the delivery of project's benefits.

Risk management**:**	Systematic process of identifying, analyzing and responding to project risk
Sustainability**:**	Continuation of benefits after major assistance from a financier has ended.
Technical factors**:**	Factor such as design, implementation and technological issues of the project.
Project implementer**:**	The organization or Government department or section tasked with the responsibility of implementing the projects

ABSTRACT

The World Bank has supported Kenya in financing development projects in transport, energy, water, urban development, health, public sector management and social protection since 1960. By November 2011, it had financed more than 175 projects with a total investment of over US$ 7,070 billion. Sustainability of the funded projects is of utmost importance if the impact of funding these projects is to be realized. Despite project feasibility studies being done prior to commencement of the projects, sustainability is still not guaranteed. This study investigated the determinants of sustainability of World Bank funded projects in Kenya, with the specific objectives being: to determine the institutional, technical, political and economic factors that influence sustainability of World Bank funded projects in Kenya. The study adopted both cross-sectional and explanatory research designs. The targeted projects were all projects funded between the years 2000 and 2012, the period was considered appropriate because, typically, international development projects last from three to ten years. The study targeted 65 respondents of which 51 successfully filled and returned the questionnaires. The respondents comprised of project managers and project monitoring and evaluation officials from implementing organization and officials from the National Treasury in charge of monitoring the donor funded projects in Kenya. Data was collected by use of structured and semi structured questionnaire then analyzed using both descriptive and inferential statistics to determine the effect of economic, institutional, technical and political factors on the sustainability of World Bank funded projects in Kenya. Principal component analysis was carried out using factor analysis method to establish the most critical factors among the ones identified, and Logit regression analysis was used to determine the influence of various factors on sustainability of World Bank funded projects in Kenya. Prior to Logit regression analysis, multi collinearity test was carried out to determine whether the identified variables were correlated. Content analysis was done for open ended questions. The results of the study established that the coefficients of institutional and technical factors were significant and thus these factors determine project sustainability while the coefficients of economic and political factors were found not to be significant at 5 percent level. It was recommended that capacity building needs to be done by all project implementers and be incorporated in project design. In addition, the World Bank should ensure that the project documents capture sustainability as one of its key criteria for approval for project funding. The government of Kenya through the National Treasury should ensure that a plan to include all stakeholders in project sustainability is in place before releasing the funding for the project.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

1.1.1 Role of Projects in Economic Growth

Development projects, especially those financed by international development aid, play a vital role in the socio-economic development of developing countries (Khang and Moe, 2008). According to the United Nations Development Program (2004), the 49 least developed countries in the world received US $ 55.15 billion in Official Development Assistance (ODA) in 2004 which is equivalent to 8.9 percent of their total gross domestic product. Khang and Moe (2008) noted that the success of the financed projects determines the socio-economic progress in the recipient countries.

Development projects provide socio economic assistance to developing countries, and in most cases the deliverables are not tangible. The intangibility of the project objectives and deliverables raises special challenges in managing and evaluating their performance. There is need to adapt new tools and concepts to define, monitor and measure the extent to which development project achieve their envisioned objectives (Khang and Moe, 2008). The objectives of development projects funding concerns poverty alleviation and the improvement in the living standards, environmental protection, basic human rights protection, assistance for victims of natural or people-

caused disasters, capacity building and development of basic physical and social infrastructure (Khang and Moe, 2008).

Each year, the World Bank lends between US$15 to US$20 billion for projects in more than 100 countries in the world. These projects are conceived and supervised according to a well-documented project cycle (World Bank, 2004). In line with the bank's development policy, the Bank helps the respective governments take the lead in preparing and implementing development strategies as per country's national priorities. The World Bank has supported Kenya since the financial year 1960/61 with total World Bank commitments to Kenya being about $4.2 billion between 1960 and the year 2011 (World Bank, 2004).

The number of projects as well as the amount in funding by the World Bank over time in Kenya is as shown in Figure 1.1

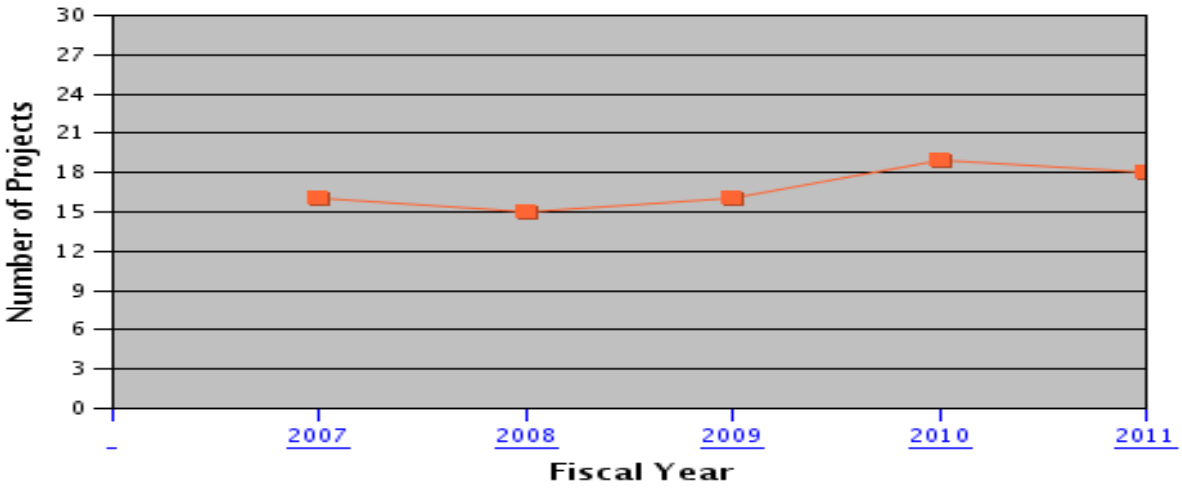

Figure 1.1: Trends in Number of Projects Funded by the World Bank in Kenya

Source: http://web.worldbank.org accessed in July 2013

The figure shows that there has been an upward trend in the number of projects funded by the World Bank.

The Figure 1.2 that follows shows the trends in the lending amount per year.

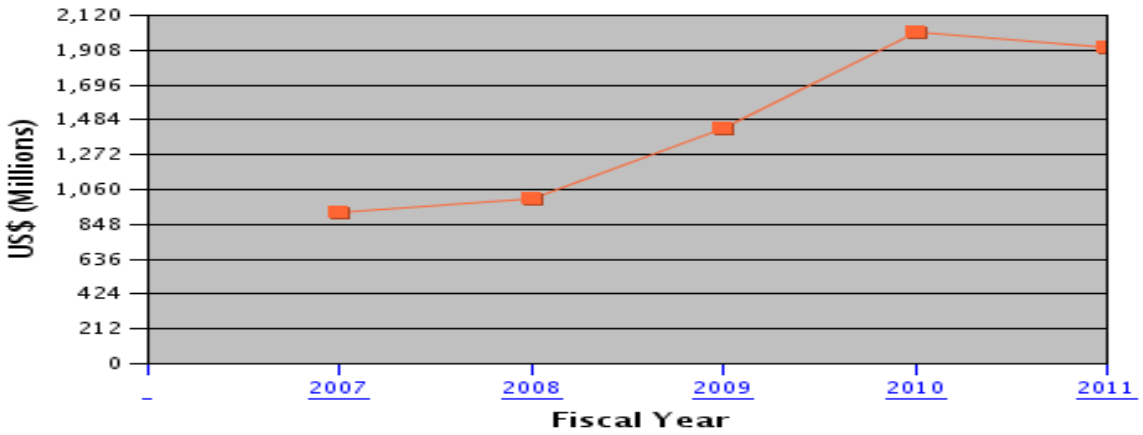

Figure 1.2: Lending Amounts per Year

Source: http://web.worldbank.org accessed in July 2013

The figure shows an upward trend in the lending amount over the years, especially from 2008 through to 2010 and a slight decline in 2011.

The first loan by the World Bank to Kenya was in 1960 in support of an agricultural project. As at 2009, there has been close to one hundred credits and grants by the International Development Association (IDA), with a total net commitment of about US$ 4.5 billion. As of September 2009, the World Bank's portfolio in Kenya consisted of 16 active operations, with total commitments of over US$1.4 billion. The largest share of commitments is in infrastructure development (US$770 million) and this commitment is distributed to the following sectors: transport (US$460 million), energy

(US$160 million) and water and sanitation (US$150 million). The second largest share of commitment goes to projects in agriculture and rural development (US$360.6 million). Other projects that benefited from funding by the World Bank were in education, health, private sector development, public sector governance and economic policy. In addition, the bank as at the end of 2009 was financing five projects focused on the East African region with a total commitment of US$320 million in transport and trade, agriculture, environment and telecommunications infrastructure (World Bank, 2009).

The Kenya Vision 2030 plan, which is the country's development blueprint covering the period 2008 to 2030, aims at making Kenya a newly industrialized, "middle income country providing high quality life for all its citizens by the year 2030 in a secure and clean environment". The Vision is based on three pillars namely; the Economic Pillar, the Social Pillar and the Political Pillar (Republic of Kenya, 2007). Under each of the three pillars, several flagship projects have been identified, which in essence means that the overall achievement of the Vision is dependent on the sustainability of the identified projects.

Project success has traditionally been measured by the extent to which it meets customer specifications and timely completion within budget. Little attention has been focused on sustainability of project benefits. The Gartner Group (2000) noted that forty percent of Information Technology projects in America were considered to have failed.

The projects considered to have failed were on average suspended after fourteen weeks and at which time approximately $1million had on average been invested.

World Bank funded projects have a project life spanning over many years, involving large capital outlay, generating unbalanced cash outlay and generally involving complex contractual agreements. The situation is more compounded by the ever increasing environmental instability which is caused by such issues as, changing economic and financial situations, unstable political environment and changing regulatory framework. There is need therefore to understand what determines sustainability of projects.

1.1.2 World Bank Funded Projects in Kenya

World Bank has funded many projects in Kenya with varying degree of success. Generally, project performance is measured by the extent to which it is completed on time and meeting the user requirements within the stipulated time (Schmidt, 2009). This is not always the case with World Bank funded projects. For instance, the Arid Lands Resource Management Project funded between 1996 and 2003 was delayed by two years. In addition, the development objective of Tana River Primate National Reserve Conservation Project was not achieved implying that the objective of ensuring sustainability was not met (World Bank, 2003).

According to the World Bank (2005) other projects which have not performed well include the Energy Sector Reform Project which was implemented in 1998 .The

objectives of this project were to assist the Government of Kenya in formulating and implementing major policy and institutional reforms aimed at creating an efficient and environmentally sustainable energy sector, and to support investments needed to meet power demand and increase operational efficiency.

The Free Primary Education Support Project had its fair share of challenges which included corruption and political interference. These challenges demonstrate the existence of underlying causes of project failure which this study investigated.

The Northern Corridor Transport Improvement Project, whose development objectives were to increase efficiency of road transport along the Northern Corridor and thus facilitate trade and regional integration; enhance aviation safety and security to meet international standards; and to promote private sector participation in the management, financing and maintenance of road assets, further exemplifies the challenges of project implementation. The initial budgeted amount for this project was revised several times due to unforeseen circumstances, indicating that there are factors that influence project completion and eventually affect sustainability.

The Kenya Agricultural Productivity Project (KAPP) phase I faced a number of challenges which included difficulties of coordination among bodies within the research system, weak public sector technology dissemination, and inadequate engagement with the farmers (World Bank, 2009), demonstrating that the implementation of the projects did not proceed as earlier anticipated.

The World Bank has spent substantial amounts of money in financing development projects in Kenya. These projects should, therefore deliver value to Kenyans as was initially intended, as well as meet the financiers' expectations. It is worth noting that project sustainability is crucial for any future funding of projects by the World Bank.

Despite the enormous investment by the World Bank in financing projects in developing countries, a number of challenges are encountered. A study by Independent Evaluation Group (IEG) of the World Bank found out that in 2010 alone, 39 percent of all World Bank projects were unsuccessful, and in Africa alone, the failure rate was over 50 percent (Ika, 2012). Bad governance, resource curse, conflicts, lack of project management capacity, poor project design, politics, geographical location, and corruption were some of the challenges that development projects faced (Gow and Morss, 1988; Ika and Hodgson, 2011).

1.2 Statement of the Problem

The World Bank funds well designed and approved projects which are expected to result in benefits to the intended users or produce the desired goals for unforeseeable future. Incorporating sustainability into project design would result in a win-win situation for both project beneficiaries, financiers and other stakeholders. Projects in Kenya have continued to perform poorly in terms of sustainability (World Bank, 2004). Moreover, projects in Kenya have been poorly rated on sustainability by the Operations

Evaluation Department (OED) of the World Bank as compared to other East African countries. Kenya attained an overall rating of 49 percent on sustainability of projects funded during the period 1999 to 2002 as compared to Uganda's and Tanzania's rating of 59.5 percent and 70.1 percent respectively. Beyond East Africa, Ghana was had a rating of 64.7 percent in the same period (World Bank, 2003). This shows that among the three East African countries rated by OED, Kenya was rated the poorest in project sustainability.

Shediac-Rizkallah and Bone (1998); Mubila, Leyeka and Kayizzi (2000); Tango International (2009) identified and grouped the main factors influencing sustainability as policy, institutions, regulatory environment, social and political issues, project design and implementation . However, the groupings were narrow and excluded technical and economic factors which this study attempted to incorporate. The categorization of determinants in this study is more inclusive and therefore expected to expand the understanding of the factors affecting sustainability of World Bank funded projects.

Tango International (2009) focused on the International Fund for Agricultural Development (IFAD) funded projects in India whose policy and governance issues are different from those of the World Bank. Shediac-Rizkallah and Bone (1998) focused on health projects while Mubila, Leyeka and Kayizzi (2000) centered on the determinants' of the success of Asian Development Banks's (ADB) project implementation and not on sustainability. The studies were done in countries which are more advanced than Kenya and also given that there are no two countries with similar environmental conditions, it

was important to investigate how the aforementioned factors influence sustainability of World Bank funded projects in Kenya.

1.3 The Objectives of the Study

The general objective of this study was to investigate the determinants of sustainability of World Bank funded projects in Kenya. The specific objectives were to:

i) Determine the influence of institutional factors on the sustainability of World Bank funded projects in Kenya.

ii) Assess the effect of technical factors on the sustainability of World Bank funded projects in Kenya.

iii) Investigate political factors and their influence on sustainability of World Bank funded projects in Kenya.

iv) Establish the role of economic factors on the sustainability of World Bank funded projects in Kenya.

1.4 Hypotheses

i) H_{o1}: Institutional factors do not influence the sustainability of World Bank funded projects.

ii) H_{o2}: Technical factors do not affect the sustainability of World Bank funded projects.

iii) H_{o3}: Political factors do not affect sustainability of World Bank funded projects.

iv) H_{o4}: Economic factors do not play any role in the sustainability of World Bank funded projects.

1.5 Significance of the Study

The findings of this study could help the World Bank and other multilateral financiers in understanding the key determinants of project sustainability in Kenya. The knowledge of the determinants and their influence is expected to improve sustainability of projects thereby delivering value to the stakeholders. It will also help project managers to improve their management systems, by understanding and addressing the challenges they face while managing projects.

Policy implications of the study can be useful to the government and other policy makers in policy formulation. The study provides insights on the political, legal and regulatory frameworks that add to the complexity of project sustainability and suggests ways of reducing the effect of these frameworks on project sustainability. An understanding of the interplay among these factors could result in a more efficient project results delivery and management. This study can also serve as reference for academicians and other researchers who might be interested in carrying out further research on project sustainability. It also provides a basis on which to interrogate the significance of other variables not covered in this study

1.6 Scope of the Study

The World Bank promotes long-term economic development and poverty reduction in developing countries. This is done by providing technical and financial support to assist

countries reform particular sectors or implement specific projects. World Bank funded projects implementation period ranges from one year to eight years. Given that sustainability is continuation of project benefits for a reasonable period of time after project completion, the present study chose a 12 year period to cover the sustainability period for all the projects implemented between 2000 and 2012. According to Ika, Diallo, and Thuillier, (2011) international development projects typically last from three to ten years, but the funding can be up to ten years. According to Brown (1998) the degree of sustainability could be measured by observing the percentage of project-initiated goods and services still being delivered and maintained five years past the termination of donor resources. The 12 year period was, therefore considered sufficient to determine the project sustainability. The study focused on the projects funded by the bank because of the important contribution it makes to Kenya's development.

1.7 **Organization of the Study**

This thesis is organized into five chapters; the first chapter covers background of the study and the statement of the problem. The chapter also presents the research objectives, research hypotheses, and highlights the significance and scope of the study. The second chapter presents the theoretical and empirical review of relevant literature, summary of literature review and the conceptual framework. Chapter three deals with research methodology which includes research design, empirical model, target population, sampling design and sample size, data collection procedures, reliability and validity and data analysis. Chapter four covers empirical results and discussion and chapter five covers the summary, conclusions and policy implications.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers theoretical, empirical literature, summary of literature as well as the conceptual framework.

2.2 Theoretical Literature Review

Several management theories have been proposed by many studies each applying to a different business situation (Fredman and Neuman;Laszlo and Kripper, 1998; Anderson, Carter, and Lowe, 1999; Liang, You, and Liu, 2010; Hanisch and Wald 2012). Among the theories are; systems theory, contingency theory and resource based theory. The following is a detailed discussion of each one of them.

2.2.1 Systems Theory

Due to an increase in the integration and duplication of scientific research in the 20th century, Ludwig advanced a general system approach (Laszlo and Kripper, 1998). A system is a set of two or more interrelated elements, where each element has an effect on the functioning of the whole. Each element is affected by at least one other element in the system and all possible subgroups of elements affect the whole. In addition, the subgroups in the system affect each other (Laszlo and Kripper, 1998; Fredman and Neuman, 1999). A system will not survive if not purposely supported by an outside agency. Thus, well-organized and coordinated efforts to sustain its structure and

function must exist (Laszlo and Kripper, 1998). A system cannot exist in isolation or on its own. Interaction with the environment cannot therefore be ignored.

The basic assumption of a system is that the whole is more than the sum of its parts and therefore helps to develop strategies to preserve the benefits of having the system (Fredman and Neuman, 1999; Anderson, Carter, and Lowe, 1999). The development of systems theory gave rise to other important concepts relevant to project management such as open and closed input-output analysis developed by Wassily Leontief in 1930s, open and closed systems, boundary and homeostasis (Fredman and Neuman, 1999).

The project influences and is influenced by the different actors in the environment, which includes government officers, project managers and other stakeholders. The project management context fits into a system as envisaged by Ludwig von Bertalanffy, the founder of systems theory. Since the intention of any organization when initiating a project is to have positive outcomes, sustainability becomes a critical issue. In this context therefore, the systems theory is relevant to the study because the project output is intended to positively affect the environment, and positive impact can only be felt if a project's output is sustainable.

2.2.2. Contingency Theory

Contingency theory was first put forward by Fred Fielder in early 1960s through what was referred to as contingency theory of effectiveness. Contingency theory is based on

the premise that the outcome of any situation depends on the demands of the situation existing at that time.

No project can be studied comprehensively without considering its context (Hanisch and Wald, 2012). Although the concept of contingency can be used in the sustainability of projects it has some challenges as highlighted by Hanisch and Wald (2012). The challenges relate to the loose and incoherent definitions of contingency factors, identification and analysis of a multitude of influencing factors and deficiencies in completeness of topics under contingency theories. The study borrowed the concept of contingency theory because of its assumption that the outcome of any situation is dependent on the circumstances existing at that particular time. However, the concept of contingency theory was used with caution because of its inability to deal with a multitude of factors affecting a particular outcome. This argument is consistent with those of Howell *et al.* (2010) who argued that contingency theory is narrowly applied to project management. However, among the existing theories, contingency theory was found to be more applicable to project sustainability.

2.2.3 Resource Based Theory and Sustainability

Barney (2001) argued that the value of particular resources depends on the market context in which they are applied. These valuable resources have to be described if they are going to be sources of sustained strategic advantage for firms. The main argument of Resource Based Theory (RBT) is that firm performance is determined by the resources it owns and that the firm with more valuable scarce resources is more likely to

generate sustainable competitive advantage (Liang, You, and Liu, 2010; Ville and Wicken, 2012). It is on this basis that the Resource Based Theory is relevant to project sustainability. Projects are used as a vehicle for delivering services or goods to the customers and thus enhancing competitive advantage. Sustainability of project benefits must be emphasized to achieve the desired outcome thus the relevance of Resource Based Theory to the study.

The present study is anchored on contingency theory where every project is considered unique and its sustainability is affected by different actors depending on the country's contextual situation. Given that projects are temporary endeavors created for a particular purpose, and that the World Bank funds projects in many countries, the sustainability of these many projects is assumed to be determined by country specific situation. Contingency theory, therefore was found to be more relevant the study.

Projects face different challenges depending on the environment in which they are implemented (Heupers, 2011). It is worth noting that some projects are sustainable while others are not, the issue is to find out the country's contextual factors that determine project sustainability and particularly World Bank funded projects in Kenya.

2.3 Empirical Literature

The implementation of development projects is faced with a considerable degree of uncertainty. Due to this uncertainty, probability for project failure due to exogenous

factors rises when the project is in the social sector (Mubila, Lufumpa and Kayizzi-Mugewa, 2000).

Several studies have identified indicators of sustainability such as maintenance of project benefits, institutionalization of the project within the organization and level of capacity building (USAID, 1994; Shediac-Rizkallah and Bone, 1998; Bakalian, 2009). Tango International (2009), identified social support, technical soundness, government commitment and institutional support as some of the indicators of sustainability. Other indicators of sustainability are willingness to pay for the services, disposable income of the recipients and stakeholder participation (Becker, 1997).

According to Zhou *et al*. (2013), project sustainability can only be measured by using a composite value. The composite measures of sustainability have been used in other studies, for example by USAID (1994), Sarriot *et al.* (2004), Hack *et al.* (2007), Bell and Morse (2008); and Rowe (2006). In line with the above studies, this study computed a composite value and used it to measure sustainability.

Some of the methods of analysis used by other studies are univariate analysis, (Sarriot *et al*.,2004), and logit regression model (Purna and Anushree, 2010; Rowe, 2006). Mubila *et al.* (2000) used probit and ordinary least square methods. This study adopted the logit model to assess the contribution of independent variables towards sustainability of World Bank funded projects in Kenya. Project sustainability was measured by checking the continual flow of benefits to the intended users, the extent to

which the facilities are operational, existence of evidence of project outcome, institutional support and the project design. In this study, an answer to the affirmative to all the ten questions posed on sustainability was taken to imply that project was sustainable.

2.3.1 Sustainability of World Bank Funded Projects

The World Bank rates the likelihood of sustainability of project upon its completion. For example, the Tana River Primate National Reserve Conservation Project (2003) was rated unlikely on sustainability. The report argued that long-term sustainability was uncertain, given that the project did not resolve the underlying driving factors of human encroachment and destruction of the critical habitats. The report continued to posit that the overall development objective of ensuring the survival and sustainability of threatened biodiversity within the project region was not met. The reports indicated that there existed risks to sustainability (World Bank, 2003).

The Urban Transport Infrastructure Project rating on sustainability was unlikely because most of the outputs that were anticipated were not accomplished and the project objectives were not fully met. It was therefore unlikely that the project would be sustainable (World Bank, 2003).

Some projects were rated by World Bank as having a higher potential for sustainability. These include the Micro and Small Enterprise Training and Technology Project, Arid Lands Resource Management Project, Energy sector reform project and Public Sector

Management Technical Assistance project. The reports by the World Bank on the above projects appreciate the fact that there existed factors that affect project sustainability.

Sensitivity analysis of the Kenya Agricultural Productivity Project showed that the sustainability of the project could be challenged by changes in prices, yields and political activities (World Bank, 2009). The overall project development objective was to support the overall system of generation, dissemination, and adoption of agricultural technology (World Bank, 2009). The project had four components facilitation of policy and institutional reforms; support to extension system reform; support to research system reform; and support to farmer/client empowerment. Using survey method, model farms were assessed based on the expected project outcomes and the findings were that the objectives were achieved (World Bank, 2009).

2.3.2 Factors Affecting Sustainability

The main factors affecting sustainability form a basis on which to build strategies for monitoring and evaluation. Tango International (2009) identified the main categories of factors supporting sustainability as policy, institutional, market and regulatory environment while Mubila *et al*. (2000) study on the determinants of project success posit that sustainability strategies must be based on environmental, social and political conditions. Mubila *et al*. (2000) used Ordinary least Square (OLS) method and probit model to assess the factors that determine project success. On the other hand Shediac-Rizkallah and Bone (1998) through a desk review of several articles on health projects grouped the factors affecting sustainability of health programs as project design and

implementation factors, organizational and broader community environment factors. Tango International (2009) carried out a case study of International Fund for Agricultural Development (IFAD) funded projects in Bangladesh, India, Lao People's Democratic Republic, Philippines and Vietnam established that none of the countries studied had a consistent set of sustainability indicators. The study identified two models that lead to sustainability; market-led approach model, where infrastructure exists to support the project and community-led approach model which is appropriate in areas that are more isolated and have marginalized ethnic minorities with no infrastructure.

The above mentioned studies presented different dimensions of sustainability issues. While Tango International (2009) focused on agricultural IFAD funded projects, Mubila, Leyeka and Kayizzi (2000) focused on ADB funded projects and Shediac-Rizkallah and Bone (1998) focused on health programs. There is need to have a more generalized view of the determinants of project sustainability without necessarily looking at a particular sector.

Independent Evaluation Group (IEG) (2011) claimed that 39 percent of the World Bank funded projects were unsuccessful in 2010. Ika *et al*. (2011) posit that World Bank funded projects frequently fail to achieve their goals due to a number of problems that could be termed managerial and organizational. Despite the important role World Bank projects play in developing countries, research in this area has been narrow, examining projects and project management in general (Ika *et al*., 2011).

Key factors impacting on the sustainability of benefits may vary between countries, in terms of their level of economic development, the role of the private sector in the economy, the government's ability to meet recurrent cost financing requirements, the available human capital, and the nature of political and administrative decision making systems (Quality Assurance Group, 2000). The group identified the factors affecting sustainability as partner government policies which include policy environment and fit; donor policies including planning horizon; delivery and contracting mechanism; stakeholder participation, management and organization issues such as management structures, administrative systems, flexibility and phasing of implementation; financial considerations such as recurrent cost financing, private sector involvement, user-pays and counterpart contributions; awareness and training of the project beneficiaries including such issues as information dissemination and networking. Technology, political stability, level of development, external economic shock and natural disasters were some of the factors identified as affecting sustainability of donor funded projects.

Bamberger and Cheema (2000), classified factors affecting sustainability of any project into three broad group of factors design and implementation of the project; project organization and external factors operating at local, national and international levels. Bamberger and Cheema (2000) argued that sustainability is affected by a wide variety of macro-level factors over which project planners and managers have very little control, changes in the national and international economic environment can have drastic effects on the long term viability of the project. Other factors that may affect sustainability are the socio cultural characteristics of beneficiaries. The social and

political organization of rural communities can either facilitate or make more difficult the sustainability of projects.

Liyin *et al*. (2011), using a fuzzy sets theory, identified key performance indicators of sustainability of infrastructural projects. Their study argued that sustainability performance of an infrastructure project can be assessed by calculating a weighted sustainability score. The Key Assessment Indicators (KAIs) were the analysis of the market supply and demand, financial risk, public safety, effects on local development, effects on water quality, and effect on land pollution.

The foregoing studies have not specifically identified factors affecting sustainability of World Bank funded projects in Kenya. Their focus has been other developed countries for example Bamberger and Cheema (1990) focused on Asian coutries. A broad sustainability analysis should be incorporated into the project management life cycle right from the inception to the clean-up stage (Quality Assurance Group, 2000). It is therefore important to have sustainability strategy for projects funded by the World Bank. This study attempted to group the factors identified by various studies into political, economic, institutional, and technical with a view of developing policy guideline to ensure sustainability of all projects irrespective of the sectors.

a) Institutional Factors and Sustainability

In spite of the various strategies put in place to ensure sustainability of the Arid Lands Resource Management Project " there remains some risk that the community will not be

able to adequately maintain and continue to operate the facilities developed with the assistance of the project team" (World Bank, 2005:16). Based on the statement it shows that there was doubt on the sustainability of project. While the self-evaluation of the responsible operation division of the bank rated the sustainability of the project as likely, the Operation Evaluation Department, an independent evaluation department of the World Bank, rated the sustainability of the project as non-evaluable (World Bank, 2005). This meant that at that particular time of rating, there was no consensus on the sustainability of the project. Despite the rating of sustainability by the Operation Evaluation Department of the World Bank as non-evaluable there was an indication that if the project received support from the government, then the state of affairs may change (World Bank, 2005). The role of governments in the sustainability of projects is therefore critical. The ability to manage the factors associated with institutions/ government is equally important.

Evidence from a wide range of literature and project documentation suggested that in community managed projects, many factors affect post-project sustainability. Among these factors are institutional ones which include policy, external follow-up support, institutional strength, integration with existing services and leadership of the project (Shediac-Rizkallah and Bone, 1998; Bakalian, 2009).

The outcomes of World Bank Group interventions is said to be a function of three factors; the World Bank Group's management of factors within its own control or institutional performance; the client's management of factors in its control (government,

private sector client); and external factors, such are exogenous shocks or the performance of other partners (Independent Evaluation Group, 2011). At institutional level, performance within each institution consists of the strategic objectives the organization pursues; its priorities and deployment of resources; how it delivers its services and products; the organizational structures, management systems, and incentive frameworks it adopts; how it deploys its internal financial and human resources to best achieve its mission; and how it leverages its activities through coordination and partnerships across the World Bank Group and with external parties.

b) Technical Factors and Sustainability

The World Bank (2005) project performance report on the Arid Land Resource Management Project stated that at the community level there was a concern about the sustainability of some of the micro-projects especially in the maintenance of equipment such as irrigation pumps because members of the community had limited experience in maintaining such equipment. Maintenance of equipment is a technical issue which if not taken care of may affect project sustainability. The World Bank (2005) project performance report on Micro and Small Enterprise Training Project rated sustainability as unlikely to be attained.

World Bank funded projects that had unsuccessful development outcome ratings tended to have low business success as a result of flaws in the project design, in addition macroeconomic volatility, micro-level socioeconomic risks and their implications for program design have an effect on sustainability (Independent Evaluation Group, 2011).

This implies that project sustainability should start at the project design stage. It was necessary to carry out further analysis on the factors that affect sustainability of World Bank funded projects.

Shediac-Rizkallah and Bone (1998), in their study of the sustainability of community-based health programs, grouped potential factors affecting sustainability into three: project design and implementation factors; organizational setting related factors; and community environment related factors. Under project design and implementation factors, project duration, project type, training, project financing and project negotiation process were identified as the critical components affecting sustainability, implying that project design plays a critical role in sustainability. The study concluded by emphasizing that sustainability is a dynamic process requiring continuously adapting goals and strategies to changing project environmental conditions. This study grouped the project design factors under technical factors.

c) Political Factors and Sustainability

Political factors are those factors that emanate from political decisions and events that impact on projects sustainability. Political factors include inconsistency in policies, changes in laws and regulations, restrictions on fund repatriations, import restrictions, political violence and breach of contract (Ozorhon *et al.*, 2007).

Between 2003 and 2009 World Bank Group (WBG) played an active role in Peru, providing US$3.9 billion in new International Bank for Reconstruction and

Development (IBRD) lending and International Finance Corporation (IFC) financing, as well as a range of non-lending services (World Bank, 2011). In the implementation of the project, political risks were identified as a major setback in the sustainability of projects. Multilateral Investment Guarantee Agency (MIGA) recommended political risk insurance as one way of dealing with the risk. In response to a query on political risk insurance, the Independent Evaluation Group noted that they had found that there was demand, especially in the infrastructure sector (World Bank, 2011).

When investors consider financing a mining project, they analyze the country where the project will be located (political factors) among other issues (United Nation Environment Programme, 2002). It implies therefore that politics is a major consideration in project financing and consequently sustainability. Nothing evidences this more than the observation by Kyeydieh (1996) that political risk is the most significant risk faced by foreign investors and lenders in developing countries because of the sudden political change which can jeopardize projects at a critical stage.

In discussing the effectiveness of World Bank Group in Africa, Independent Evaluation Group (2011), established that in Africa 33 percent of World Bank funded operations were rated unsatisfactory due to politically related issues which includes lack of political consensus and instability in some countries. In addition, inadequate or unrealistic bank assessments of political economy or institutional capacity to handle risks in targeted countries pose a challenge in project sustainability. This statement

emphasizes the importance of political will in the success and eventual sustainability of projects.

d) Economic Factors and Sustainability

Economic factors relate to issues such as exchange rate fluctuations, interest rate and inflation. To deal with such issues, it is essential that economists, financial analysts, project managers, and safety and production engineers are able to communicate (Terjen, 2004). In build operate and transfer projects, financing is tailored to the project economic viability and the relative reliability of its cash flow (Kreydieh, 1996). This implies that economic viability of a project is only achieved if the project is sustainable.

Zhou *et al*. (2013) study on sustainability performance measurement for Private Finance Initiative (PFI) projects identified three dimensions for measuring sustainable development as economic, environmental and social. The study suggested that sustainability can be measured using a composite index. This study used composite index to measure sustainability, a number of questions were designed to measure sustainability of World Bank funded projects in Kenya. Another study that used composite measure sustainability was Sarriot *et al*. (2004)

2.4 Critique of Literature and Research gaps

Mubila *et al.* (2000) did a study on the determinants' of success of projects funded by Asian Development Bank. The purpose of the study was to analyze the factors that determine project success in the Asian Development Bank funded projects completed

by 1995. The study was done in Asia which may have a different political, economic and social setting. There is need to carry out a study on the sustainability of World Bank funded projects in Kenya, particularly so because Kenya is not as developed as Asia and that the scale of projects funded by the Asian Development Bank may not be the same as those funded by the World Bank.

Most of the studies done by the World Bank centered more on project completion and not sustainability. Project performance rating was mainly done immediately the projects were completed and therefore could not capture factors that lead to sustainability. As discussed by Quality Assurance Group (2000), the key factors impacting on the sustainability of benefits may vary between countries. Therefore, the need to study the various factors and the role they play in the sustainability of World Bank funded projects in Kenya.

It is necessary to have a strategy to ensure that the planned benefits of the project are sustained. This can only be done when these factors are identified, analysed and prioritized. It is imperative that each of the constraints to sustainability is specified and dealt with throughout the project life. Because of the important role World Bank funded projects play in Kenya, it is important that the benefits derived from the projects are sustained.

A study carried out by Schiltz (2003) on the assessment of financial benefits of project management used a simplified project maturity model to determine the relationship

between organization maturity level and performance in project management. The study argued that the simple model was chosen for ease of understanding by managers who are new to project management. This study focused on establishing the critical determinants of projects sustainability using the World Bank funded projects in Kenya.

2.5 Conceptual Framework

The relationship between variables as envisaged by the study is shown in the Figure 2.1.

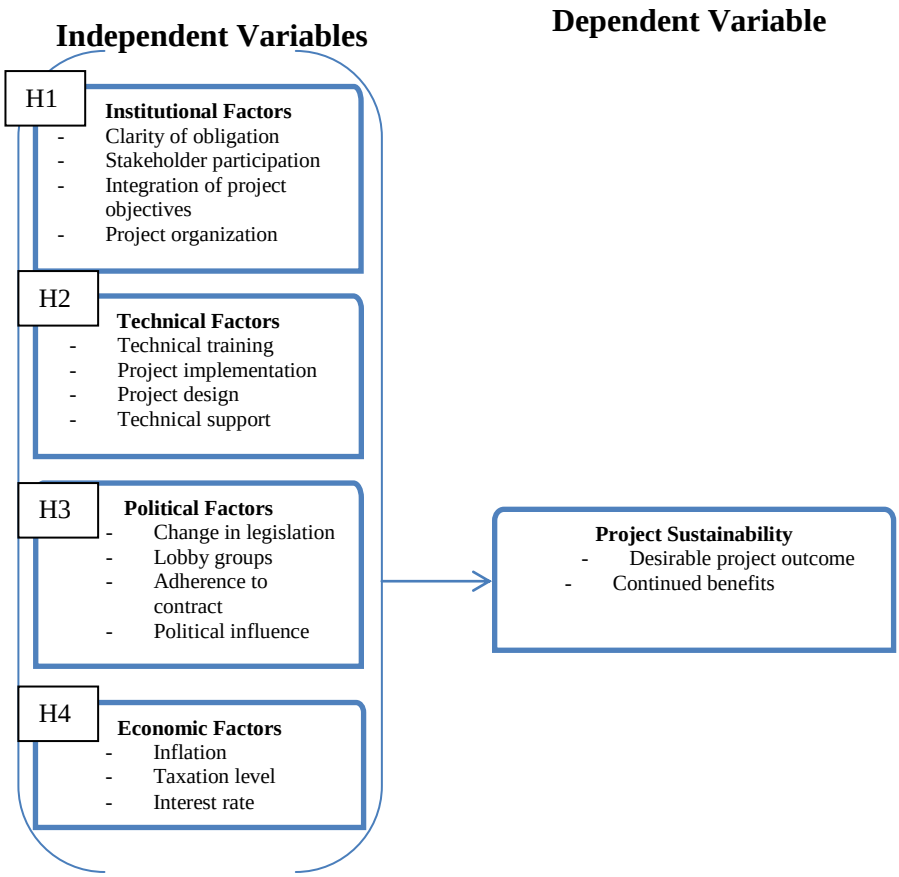

Figure 2.1 Conceptual Framework

Source: Researcher (2012)

Institutional, technical, political and economic factors are intertwined in determining the sustainability of projects. The study considered the above factors in establishing the extent to which each contributed to the sustainability of World Bank funded projects in Kenya. Becker (1997); Rowe (2006); Organization for Economic Co-operation and Development, (2008) and Zhou *et al.* (2013); argued that composite measure is

increasingly becoming a popular measure of sustainability, this approach of composite measure of sustainability was adopted in this study. From the reviewed literature, institutional, technical, political and economic factors were found to affect sustainability of donor funded projects. This study therefore concentrated on the above mentioned factors.

Institutional factors were broken down into clarity of obligation, objectives of the project, stakeholder participation and incorporation of sustainability in the structure of the organization. The World Bank funded projects stakeholders include the users or the beneficiaries of the project, the government, and the project implementers. Stakeholder participation is key in determining project sustainability since their level of involvement will either break or make the project to be sustainable. The way the project team is constituted and interacts with the stakeholders has a bearing on its sustainability. The main issue was to determine the extent to which project organization structure incorporates sustainability. This study assessed the effect of project organization on the sustainability of World Bank funded projects in Kenya.

Technical factors that were identified in the study were technical training of the users of project benefits, involvement of stakeholders in the implementation of the project, inclusion of sustainability in project design, and support provided by the implementers beyond project termination. When beneficiaries are trained on how to maintain the project benefits, then the project is likely to be sustained. On the other hand, the involvement of stakeholders during project implementation is likely to ensure that the

project is sustainable. During the project design stage, the means of achieving project objectives is conceived; incorporating project sustainability at this stage is likely to increase the chances of project sustainability. This study, therefore investigated the effect of technical factors on sustainability of projects funded by the World Bank in Kenya.

Under political factors, change in legislation, activities of lobby groups, adherence to the terms of project contract and political influence on sustainability were investigated. When the project users objectives are in conflict with the political objectives, then the project may not be sustainable. This study examined the influence of politics on the sustinability of World bank projects with the assumption that the higher the negative political activities towards the project lower the chances that the project is sustainable. The activities of lobby groups can be categorized under micropolitics which distinguishes it from macro level political phenomena (Weissenberger-Eibl and Teufel, 2011). Lobby groups through advocacy influencees the decisions made by government, indicidual managers ,organized groups or other officials involved with the projects. Their actions may hinder or promote the sustainability of projects.

Economic factors that were investigated were Kenya's taxation level, changes in inflation and interest rate fluctuation. In this study, it was hypothesized that the higher the taxation rate the less sustainable the project. Inflation affect the cost of raw material required for maintaining the project outcome. In this study, the contribution of inflation to the sustainability of World Bank funded projects was investigated. The effect of

changes of interest rate on sustainability was also investigated. It was assumed that the higher the interest rate the lower would be the chances of project sustainability.

Project sustainability is central to the success of any projects; just as is the case for the success of any organization, good project management is expected to contribute to the sustainability of project. Every project is meant to deliver a product and thus the need to ensure that the product is beneficial to the intended users.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research paradigm, research design, empirical model, operational definition and measurement of variables. The chapter also deals with the target population, sampling design, the sample size, data collection instruments, validity and reliability, data collection techniques, analysis and presentation of results.

3.2 Research Paradigm

The two main philosophical frameworks that guide any scientific research are positivism and intepretivism (Collins and Hussey, 2009; Jackson, 2009). The positivism paradigm is based on the belief that reality is independent of the researcher and that the goal of research is the discovery of knowledge based on empirical evidence. On the other hand intepretivism is underpinned by the belief that social reality is not objective but highly subjective because it is shaped by the researchers' perceptions (Collins and Hussey, 2009). This research adopted positivism framework where data was collected and analysed to gain an understanding of the issues underlying the study.

3.3 Research Design

This study used a mixed research design; specifically, cross-sectional and explanatory research designs were used. According to Caruth (2013), a mixed research design offers

richer insights into the phenomenon being studied and captures information that may be missed if only one type of design is used. This study therefore used a mixed research design to ensure that the data collected and analysed addressed the objectives of the study.

A cross-sectional design was designed to collect data once over the same period of time, analyse then report on it (Cooper and Schindler, 2007). Explanatory research was used to test hypotheses by measuring relationships between the independent and dependent variables given that data was analyzed using statistical techniques.

3.4 Empirical Model

In a model where the regressand Y is a quantitative variable, the objective is to estimate its expected or the mean value given the values of regressors. While in models where Y is a qualitative variable, the objective is to find the probability of something happening (Gujarati and Sangeetha, 2007). According to Gujarati and Sangeetha (2007), the three approaches to developing a probability model for a binary response variable are Linear Probability Model (LPM), logit model and probit model. LPM is plagued by several problems such as non-normality of error term μ_i, heteroscedasticity of μ_i and the possibility of $\hat{Y}_i$ lying outside the 0-1 range and generally lower R^2 values (Gujarati and Sangeetha, 2007). This generally means that $P_i = E(Y = 1 | X)$ increases linearly with X, i.e. the marginal or incremental effect of X remains constant throughout (Gujarati and Sangeetha, 2007) and because of the inherent problems with LPM, it was

not used in the study. For practical reasons, the Cumulative Density Functions (CDF) commonly chosen to represent the 0-1 response models are logit and probit models. Logit and probit models are similar and they yield similar results. According to Gujarati and Sangeetha (2007) there is no much difference in using either logit or probit. It is a matter of choice since the two models yields the same results. Due to the similarity between logit and probit, many studies choose the logit model because of its comparative mathematical simplicity. This study therefore used logit model.

Sustainability, which was the dependent variable, is a qualitative binary variable. But according to Purna and Anushree (2010), the logit model is the more appropriate estimate for sustainability equation. Several studies, such as Makau, Wawire and Ofafa (2010), Purna and Anushree (2010), adopted logit model where binary outcome was expected. Makau, Wawire and Ofafa (2010) used logit to estimate the adoption of ICT by small and medium enterprises; Purna and Anushree (2010) used a Logit model to assess the performance and sustainability of self-help groups' projects in India. Logistic regression is used to estimate the probability that a particular outcome will occur and where the dependent variable is nominal (Keller, 2008). Hence this study used logit model, which is expressed as:

$$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = \alpha + \beta_i X_{i.....,} \quad \text{.....3.1}$$

where

$$P_i = E(Y = 1/X_i) = \frac{1}{1+\ell^{-(\beta_1+\beta X_i)}} = \frac{1}{1+\ell^{-Z_i}}, Z_i = \beta_1 + \beta_i X_i \quad \text{.....3.2}$$

where:

L is the logit, as Z varies from $-\infty$ to $+\infty$ and P ranges from 0 to 1, the logit ranges from $-\infty$ to $+\infty$.

ln = the natural logarithm.

P_i = The probability that a given project is sustainable.

$1 - P_i$ = Probability of the project being unsustainable.

α = Constant

Y_i = Observed response so that a particular project is sustainable. Y_i=1 if sustainable, and Y_i= 0 if otherwise.

X_i = Vector of the determinants that affect the sustainability of project.

β_i = Vector of the coefficients of determinant that describe how changes in the independent variables influence sustainability of project.

Sustainability of project benefits is dependent on a number of factors and these factors are political, economic, technical and institutional related. Sustainability is probabilistic in nature and hence the suitability of logit model. The model uses a logistic cumulative density function (CDF). CDF is used to model regressions where the response variable is dichotomous, taking 0-1 values. The general estimating equation for the study was;

$$\text{Sustainable (L)} = f(_1 \text{Pol, Eco, Tec, Ins}) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.3$$

where:

Pol= Political factors

Eco= Economic factors

Tec= Technical factors

Ins= Institutional factors

The following Logit model was used to estimate the sustainability of World Bank funded projects in Kenya;

$$\text{Sustainable (L)} = \alpha + \beta_1 \text{Pol} + \beta_2 \text{Eco} + \beta_3 \text{Tec} + \beta_4 \text{Ins} + \mu_i \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.4$$

Each of the determinants was further subdivided as shown ;

$$\text{Sustainable (L)} = \alpha + \beta_{1,1} \text{Pac} + \beta_{1,2} \text{Plg} + \beta_{13} \text{Pi} + \beta_{1,4} \text{Plegi} + \beta_{2,1} \text{Eintr} + \beta_{2,2} \text{Ei} + \beta_{3,1} \text{Ttk}$$
$$+ \beta_{3,2} \text{Ti} + \beta_{3,3} \text{Tpd} + \beta_{3,5} \text{Tts} + \beta_{3,6} \text{T.est} + \beta_{4,1} \text{lob} + \beta_{4,4} \text{Ipo} + \mu_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.5$$

Where:

Political Factors

Pac = Adherence to contract

$P\lg$ = Lobby groups

Pi = Political influence

Plegi = Change in legislation

Economic Factors

Eir = Interest rate

Ei = Inflation

Et = Taxation level

Technical Factors

Ttk = Technical training

Ti = Project implementation

Tpd = Project design

Tts = Technical support

Institutional Factors

Iob = Clarity of obligation

Isp = Stakeholder participation

Iipo = Integration of project objectives

Iporg = Project organization

3.5 Definition and Measurement of Variables

The following table shows the definition and measurement of variables.

Table 3.1 Definition and Measurement of Variables

Category	Variable	Operationalization	Measurement	Hypothesized Direction of Predictor Variable	Scale
Dependent Variable	Y=Project sustainability	Continuation of project benefits after project completion.	Composite measure equals 1 if sustainable otherwise 0	None	Nominal
Independent variables					
Political factors	Change in legislation	Effects of change in legislation on sustainability	Extent to which change in legislation affects sustainability of	None	Interval

			projects in scale of 1-5		
	Activists	Influence of activists on project sustainability.	1 if it influenced otherwise zero	Negative	Nominal
	Adherence to terms of contract	Extent to which adherence of contract influences project sustainability.	Extent to which adherence of contract influences project sustainability in scale of 1-5	None	Interval
	Political influence	Influence of politicians on sustainability of projects	Extent to which political activities influences project sustainability in scale of 1-5	Negative	Interval
Economic factors	Taxation levels	Increase in tax rates	Extent to which taxation affect project sustainability in scale of 1-5	Negative	Interval
	Inflation	Effect of increase in inflation rate on sustainability of project	Extent to which inflation affect project sustainability in a scale of 1-5	Negative	Interval
	Interest rate fluctuation	Extent of increase in interest of loans charged by banks and its influence on project sustainability	Extent to which interest rates fluctuation affect project sustainability in scale of 1-5	Negative	Interval
Technical factors	Technical training	Beneficiary trained on project sustainability	1 if trained, otherwise 0	Positive	Nominal
	Project implementation	Involvement of all stakeholders during project implementation.	Involvement=1 otherwise zero	Positive	Nominal
	Project design	Factoring in project sustainability during design	1 is factored in, otherwise 0	Positive	Nominal
	Technical support	Support provided by the project implementers beyond the project completion period.	Support provided=1 otherwise zero	Positive	Nominal
Institutional factors	Clarity of obligations	Clarity of obligations of stakeholders on project on sustainability	Obligation clear=1 otherwise zero	Positive	Nominal
	Objectives of the project	Linking goals of the project to those of	Extent to which project goals are	none	Interval

		national or community	linked to those of national or community in a scale of 1-5		
	Stakeholder participation	Stakeholder participation affects sustainability of project	The extent to which stakeholder participation affects sustainability of project in a scale of 1-5	None	Interval
	Project organization	Organization structure for sustainability	The extent to which sustainability is incorporated in the project organization structure in scale of 1-5	None	Interval

Source; Researcher (2013)

3.6 Profile of World Bank Funded Projects in Kenya

This study covered projects which were funded by World Bank and were completed between 2000 and 2012. The focus on completed projects was motivated by the fact that sustainability of projects can only be assessed when the project has been completed. From the World Bank website, the projects which were completed between 2000 and 2012 and were geo-referenced are as shown in Figure 3.1. However, not all the projects are geo-referenced (full list of projects that were of interest to the study is as shown in Appendix 1 Table A2).

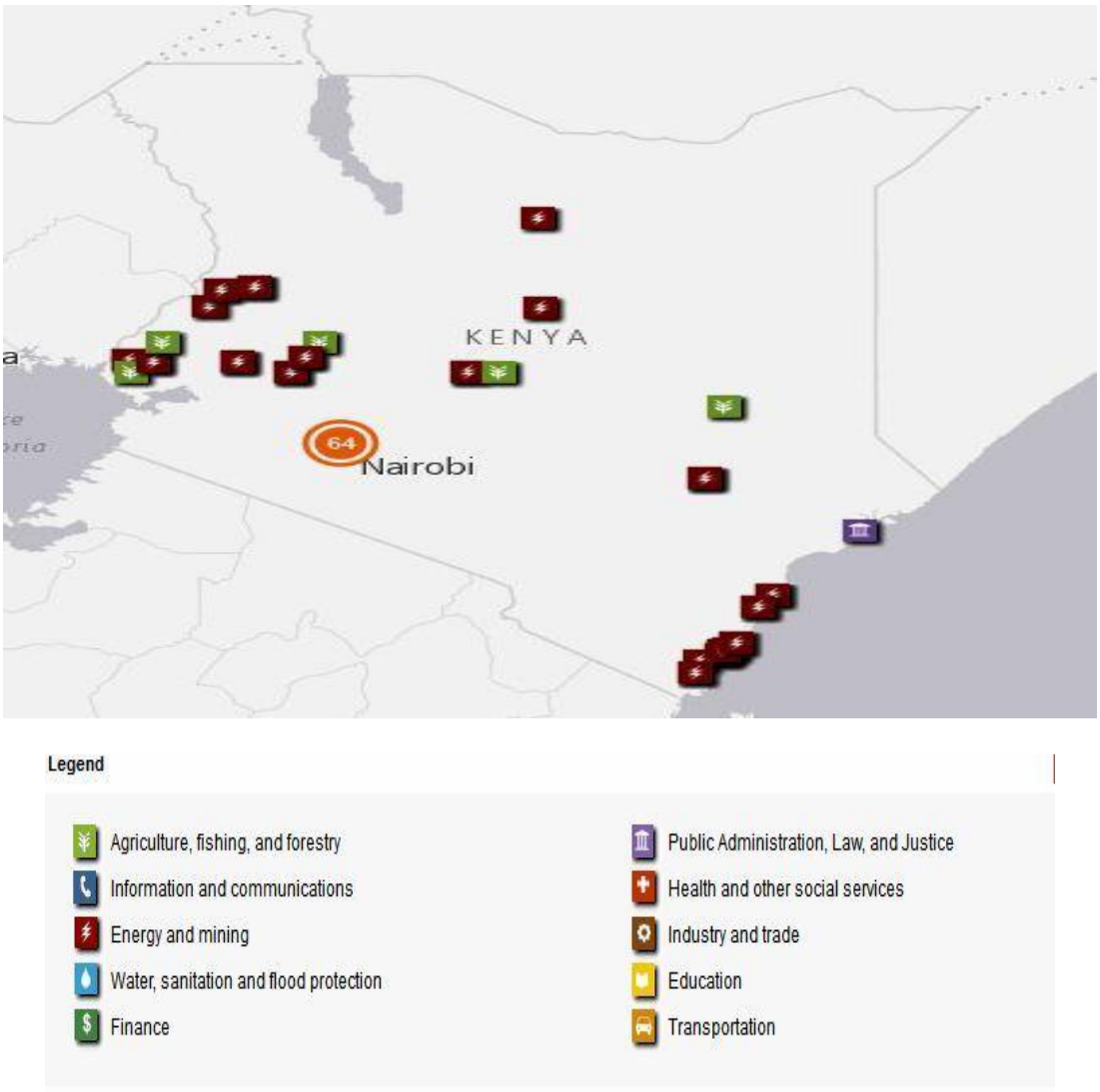

Figure 3.1 Geo-Referenced World Bank Funded Projects in Kenya (2000-2012)

Source http://www.worldbank.org/projects; accessed June 2014

The World Bank Group funds two basic types of operations: investment operations and development policy operations (World Bank, 2011). Investment operations provide funding (in the form IBRD loans or IDA credits and grants) to governments to cover specific expenditures related to economic and social development projects in a broad range of sectors, which, over the past two decades, on average, accounted for 75 to 80 percent of the bank's portfolio. Development policy operations provide untied, direct

budget support to governments for policy and institutional reforms aimed at achieving a set of specific development results (World Bank, 2011). The World Bank funded projects range from urban poverty reduction to rural development, water and sanitation, natural resource management, post-conflict reconstruction, public finance management, education and health.

3.7 Target Population

The target population of the study was all projects in Kenya funded by the World Bank and completed between 2000 and 2012. The World Bank funded projects implementation period ranges between one year and eight years. Given that sustainability is the continual of project benefits for a reasonable period of time after project completion, and to capture the determinants of project sustainability, a 12 year period was chosen because sustainability is assessed only after the project completion. It was necessary, therefore to include projects which were funded and completed within the twelve year period. The choice of the period is supported by Ika *et al*. (2011) who argued that international development projects typically last from three to five years, but the funding can be up to ten years and sustainability can only be assessed after project completion.

According to the World Bank (http://www.worldbank.org/), there were a total of 62 projects completed during that period and implemented by the relevant ministries, departments, agencies and private companies contracted by the government and the World Bank (See Appendix 1 Table A2). The heads of the project implementation in

each organization formed the population giving a total of 62 possible respondents from the implementing organization. In addition, the head of donor funded projects and also the head monitoring and evaluation department under the National Treasury, and an official from the World Bank's monitoring unit formed part of the respondents giving a total population size of 65 respondents. According to Abbott and McKinney (2013) a census yields more reliable results than a sample, and whenever it is possible it should be undertaken. The size of the population for the study was considered manageable and thus to increase the accuracy of the findings, a census was undertaken.

3.8 Data Collection Instrument

Primary data was collected from the respondents through the use of a semi-structured questionnaire. The questionnaire was designed to collect information on the determinants of sustainability of projects funded by the World Bank. The questionnaire contained questions related to background of the respondents as well as on the influence of various independent variables on the sustainability of World Bank funded projects in Kenya. Five questions were on politics and project sustainability, six questions were on institutional determinants, six questions were on the influence of economic factors on project sustainability and eight questions were on technical factors.

3.9 Reliability and validity of the instruments

Validity is concerned with the extent to which a data collection instrument measures what it is supposed to measure. Pilot testing of the research instruments was done by identifying two organizations. The identified respondents were issued with a questionnaire for pilot-testing, then their responses were evaluated and the

questionnaire adjusted to ensure that it was capable of collecting what was intended. There are four major types of validity measures; content validity, face validity, criterion-related validity and construct validity. In this study, content validity was checked by identifying three experts in the field of project sustainability who were given the questionnaire and asked to rate each of the questions on the extent to which it measured what was intended. The identification of the experts was in line with the recommendations of Lynn (1986) who posit that a minimum of three experts can be used to validate a research instrument. Using the content validity index the data collection instrument was found to measure what was intended. After the validity tests the research instrument was further reviewed and updated. To ensure face validity and criterion validity, the questionnaire was constructed based the recommendations of other studies such as Becker (1997); Sarriot *et al*. (2004); Rowe (2006); Organization for Economic Co-operation and Development (2008); and Zhou, Keivani, and Kurul (2013).

Reliability is an indication of a consistency or stability of a measuring instrument (Jackson, 2009). There are four types of reliability test i.e. test-retest reliability, equivalent form technique, split-half reliability and internal consistency reliability.

Equivalent form reliability test involved developing a research instrument and administering to two separate groups then comparing the responses to check if the instruments will collect the intended data. Split-half splits the research instrument into two matched halves in terms of contents and cumulative degree of difficulty

(Oluwatayo, 2012). The reliability of the research instrument was achieved by reviewing literature and picking those items that have been tested for reliability and using Cronbach's alpha to test internal consistency. This study adopted Cronbach alpha as a measure of internal consistency. According to Jackson (2009), an alpha of 0.7 to 1.00 indicates strong internal consistency while 0.3 to 0.69 indicates moderate consistency and an alpha of less than 0.29 indicates a weak reliability of the research instrument. In this study, an alpha of 0.7 was used as a cut-off point. Overall, the study achieved an alpha of 0.837 which meant that the research instrument was reliable. The results of the cronbach's alpha is as shown in Appendix I; Table A3)

3.10 Data Collection Procedures

First, before data was collected, a research permit was sought from office of the National Commission for Science, Technology and Innovation (NACOSTI) (Appendix IV). Permission was also requested from the Chief Executive Officers of the selected implementing organization or the Principal Secretaries in case of government ministries (see Appendix I, Table A2). Data was collected using semi-structured questionnaire. The questionnaires were administered to the heads of project implementation team in the relevant departments, organization or ministries. The research adopted drop-and-pick-later method.

3.11 Data Entry and Refinement

Once data was collected from the respondents using the questionnaire, it was checked for any errors and omissions. The questionnaire was then coded and data entered into the Statistical Package for Social Scientist (SPSS) Software for analysis. The data was

then run and outliers that were detected were omitted from data analysis. Thereafter, logit regression analysis output was extracted from SPSS for empirical analysis.

3.12 Data Analysis

Descriptive statistics were used to analyse the influence of each of the independent variables on the sustainability of World Bank funded projects in Kenya. Logit regression model was used to determine the probability of each of dependent variable and its contribution to sustainability as recommended by Purna and Anushree (2010). Principal component analysis was performed for each of the composite variable and their eigen values calculated. Only factors that had their eigen values greater the one as suggested by Beavers *et al.* (2013) and Costello and Osborne, (2013) were retained.

Prior to the use of logit model, multicollinearity test was performed to check whether variables were collinear. This study used Variable Inflation Factors and tolerance values to test multicollinearity as suggested by Menard (2002), Makau, Wawire and Ofafa, (2013).Tolerance value less than 0.20 suggests a multicollinearity problem, alternatively a variance inflation factor (VIF) greater 10 indicates the possible existence of a multicollinearity problem. Qualitative data was analysed through content analysis where common themes were grouped together as recommended by Cooper and Schindler (2007); and Makau, Wawire, and Ofafa, 2013).

3.13 Research Ethics

Ethical requirements were considered and reviewed before commencement of data collection. To ensure that the research conformed to the general ethical requirements,

confidentiality of information collected was assured. The researcher explained the purpose of the study to the respondents and asked them to voluntarily participate in the research. The researcher also assured the respondents that the data collected were strictly for academic purposes.

CHAPTER FOUR

EMPIRICAL RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results, interpretation and discussions. It covers the general background information on the respondents' sex, age, educational level and years worked in the organization. Descriptive as well as inferential statistical results are presented and discussed in relation to literature reviewed.

4.2 Response Rate

After the reliability test was undertaken and the instrument was found to be reliable it was then used to collect data. Out of the 59 questionnaires distributed to the respondents, 51 were correctly filled and returned. This represented a response rate of 86.4 percent. Saunders *et al*. (2007) and Bryman & Bell, 2007) posit that for most academic studies involving top management or representatives of organizations, a response rate of 35 percent is reasonable, while a response rate of above 85 percent is considered excellent (Bryman & Bell, 2007). The response rate achieved in this study was, therefore considered sufficient for data analysis, conclusion and recommendations.

4.3 Descriptive Statistics

4.3.1 Respondents characteristics

Table 4.1 presents the distribution of the respondents by sex, age, highest level of education and the years worked in the organization.

Table 4.1 Respondents' Characteristics

Characteristic	Classification Factor	Frequency	Percentage
Sex	Female	12	23.5
	Male	39	76.5
	Total	51	100
Age	26 to 35 years	5	9.8
	36 to 45 years	20	39.2
	46 to 55 years	23	45.1
	55 years and above	3	5.9
	Total	51	100
Education level	College	1	2.0
	First degree	8	15.7
	Master's degree	40	78.4
	PhD degree	2	3.9
	Total	51	100
Work experience	Less Than one year	2	3.9
	1 to 3 years	4	7.8
	4 to 6 years	9	17.6
	Over six years	36	70.6
	Total	51	100

Source: Survey (2013)

From the Table 4.1, majority (76.5 percent) of the respondents were male while the rest (23.5 percent) were female. This implies that majority of World Bank funded projects are managed or monitored by males. Majority of the respondents were between ages 46 to 55 years. Only 9.8 percent of the respondents were between 26 to 35 years. The smallest percentage of the respondents were 55 years and above. The implication of the distribution of the respondents' ages is that over 50 percent were above 46 years of age, which represented a fairly aging World Bank's funded projects management staff in

Kenya implying that a concerted effort needs to be put in places to mentor younger project management professionals for proper succession planning.

From Table 4.1, 78.4 percent of the respondents had a master's degree while those with college level certificate were the minority at only 2 percent. Only 3.9 percent of the respondents had doctor of philosophy degree. From the data presented, most of the respondents were well educated with a cumulative percentage of 98 for those with first degree and above. It is assumed, therefore that the respondents were well informed on the sustainability of World Bank funded projects.

On experience of respondents, over 70 percent had worked in the organization for over six years. This would imply that the respondents were knowledgeable on sustainability of the projects. Only two of the respondents had worked for less than a year. Cumulatively, those who had worked for over 4 years were 88.2 percent. Their responses were useful in explaining the determinants of World Bank funded projects in Kenya.

4.3.2 Project Sustainability

Sustainability being a binary variable, several questions were designed to measure it. An answer to the affirmative to all the questions presented was taken to indicate that the project was sustainable. The responses to these questions are summarized in Table 4.2

Table 4.2 Project Sustainability

	Response	Frequency	Percent
Benefits from project outcome	Yes	45	88.2
	No	2	3.9
	Not applicable	4	7.8
	Total	**51**	**100**
Functionality of projects	Yes	45	88.2
	No	2	3.9
	Not applicable	4	7.8
	Total	**51**	**100**
Evidence of existence of desirable project outcome	Yes	48	94.1
	No	3	5.9
	Total	**51**	**100**
Involvement of beneficiaries in project management	Yes	39	76.5
	No	12	23.5
	Total	**51**	**100**
Incorporation of sustainability in project management structure	Yes	45	88.2
	No	6	11.8
	Total	**51**	**100**
Existence of national policy on the sustainability	Yes	34	66.7
	No	17	33.3
	Total	**51**	**100**
Stakeholders input into project design	Yes	31	60.8
	No	20	39.2
	Total	**51**	**100**
Involvement of users sustainability evaluation	Yes	35	68.6
	No	16	31.4
	Total	**51**	**100**
Existence of political events affecting sustainability	Yes	27	52.9
	No	24	47.1
	Total	51	100
Availability of person dedicated to monitoring sustainability	Yes	36	70.6
	No	15	29.4
	Total	51	100
Carrying out sustainability assessment prior to funding the project	Yes	43	84.3
	No	8	15.7
	Total	51	100

Source: Survey (2013)

When asked whether more than 50 percent of the beneficiaries were using the project outcome, 88.2 percent agreed while 3.9 percent disagreed, 7.8 percent indicated that the question was not applicable to their projects, possibly because of the nature of the project.

One of the projects where 50 percent of the beneficiaries were not benefiting from its outcome was Kenya Agricultural Productivity Project jointly implemented by Kenya Agricultural Research Institute, Ministry of Agriculture and Ministry of Livestock Development. The objective of the project was to support the overall system of generation, dissemination, and adoption of agricultural technology.

Regarding the question on whether 50 percent of beneficiaries were benefiting from the project, respondents felt that the question was not relevant to the Early Childhood Development Project because this was a capacity building project and thus difficult to evaluate whether the beneficiaries were benefiting from it.

Majority of the respondents believed that the beneficiaries were deriving benefit from some of the projects. These projects included: Arid Land Resource Management Project, South West Indian Ocean Fisheries Project; Financial and Legal Sector Technical Assistant Project; Free Primary Education Support Project; and Micro Small and Medium Enterprise Competitiveness Project.

When asked whether the facilities developed as a result of project output were operational, majority (88.2 percent) were of the opinion that they were, 3.9 percent said they were not while 7.8 percent indicated that the question was not relevant to their projects. Examples of projects whose facilities were found to be operational were Natural Resource Management Project, the Financial Sector Technical Assistant Project and Public Finance Management Reform Project. The World Bank mostly funds infrastructural projects which are normally handed over to the government for maintenance. From the responses, majority (88.2 percent) of the projects are operational.

On the evidence of project outcome, majority (94 percent) of the respondents indicated that there was evidence of project outcome. These projects included Emergency Power Supply Project, Energy Sector Reform and Power Development Project, and Urban Transport Project; only 5.9 percent indicated that there is no evidence. Project with no evidence of project desirable outcome included Institutional Reform and Capacity Building Technical Assistance Project and Decentralized Reproductive Health and HIV/AIDS Project. The results could be interpreted to mean that there was evidence of the existence of project outcome as attested by 94.1 percent of the respondents.

Involvement of beneficiaries in the management of project outcome is critical to the success of any project and all projects are started with beneficiaries in mind. The management of the outcome should, therefore be the responsibility of beneficiaries. The results from the study as shown in Appendix I Table A5, indicate that 76.5 percent of

the managers involved their clients in the decisions regarding the management of the project outcome, while 23.5 indicated that beneficiaries were not involved. Examples of projects where beneficiaries were involved were Kenya Agricultural Inputs Support Project, Arid Land Resource Management Project, and Financial Sector Technical Assistance Project. Projects whose management did not involve beneficiaries were Kenya Agricultural Productivity Project and Nairobi - Mombasa Road Rehabilitation Project. Despite the criticality of involvement of beneficiaries in every stage of the projects for its sustainability, almost a quarter of the respondents indicated that they did not involve the beneficiaries.

The respondents were asked whether in their organizations they had management structure to manage the flow of benefits. About 88.2 percent of the respondents indicated that there existed a structure to manage the flow of benefits of the project. The projects under this category were Kenya Agricultural Productivity Project, Thiririka Water Project under Athi Water Service Board; and Financial Sector Technical Support Project. About 11.8 percent indicated that the structure does not exist; these projects included: Nairobi - Mombasa Road Rehabilitation Project and Northern Corridor Transport Improvement Project. The existence of the structure was expected to increase the sustainability of the World Bank funded projects.

When respondents were asked to indicate whether there was a national policy statement that defines respective responsibilities of all stakeholders regarding project sustainability, 66.7 percent indicated that there was one, while 33.3 percent indicated

that there was no policy statement, meaning that the responsibilities of various stakeholders regarding project sustainability was not clearly defined. Free Primary Education Support Project, Micro Small and Medium Enterprise Competitiveness Project, Natural Resource Management Project and Kenya Agricultural Productivity Project were some of the projects that clearly defined the projects stakeholders' responsibilities. On the other hand, in the Arid Land Resource Management Project, stakeholders' responsibilities were not clearly defined.

The respondents were asked to indicate whether all the stakeholders provided substantive input into problem identification and project design and 60.8 percent of the respondents agreed while 39.2 percent showed that they did not involve all stakeholders in the identification and design of the project, for example Arid Land Resource Management Project. The involvement of the stakeholders at the early stage of project identification and design is expected to increase the chance of the project being sustainable (Klakegg, 2009). From the information presented, majority of the respondents seemed to involve the respondents in project design. Examples of projects that involved stakeholders in problem identification and design were: the Kenya Energy Sector Recovery Project; Green Zones Development Support Project; the Northern Corridor Transport Improvement Project and Micro Small and Medium Enterprise Competitiveness Project.

Evaluation being critical in checking whether the objectives of the project have been achieved, the respondents were asked to indicate whether they involved the users/

beneficiaries of the project in the evaluation of the success of the project. It was found out that 68.6 percent involved them and this was the case for Arid Land Resource Management Project; Free Primary Education Support Project; the Micro Small and Medium Enterprise Competitiveness Project. However, 31.4 percent of the respondents indicated lack of involvement of beneficiaries in project evaluation. An example of a project lacking such beneficiary participation was Financial Sector Technical Assistance Project. From the results, one third of the respondents indicated that they involved the users in evaluation of the project benefits. This response rate was consistent with those who indicated that they involved their beneficiaries in designing the project before implementation.

The responses on the question whether there had been any political event affecting project sustainability showed 50 percent of the respondents indicated there was. Examples of such projects are Public Finance Management Reform Project and Natural Resource Management Project and the other 50 percent indicated that there had not been any. Examples of such projects were: Arid Land Resource Management Project; Free Primary Education Support Project; and Micro Small and Medium Enterprise Competiveness Project.

The study looked into establishing whether there were personnel dedicated to monitoring the project sustainability and 70.6 percent of the respondents indicated that there were personnel specifically assigned to monitor project sustainability. The examples being Free Primary Education Support Project, Flood Mitigation Project and

Natural Resource Management Project. 29.4 percent indicated that such a person did not exist for example Micro Small and Medium Enterprise Competiveness Project. It was found out that projects which had personnel dedicated to monitoring project sustainability were more likely to be sustainable. Example of such project was the Free Primary Education Support Project.

When asked whether sustainability assessment had been done prior to funding, 84.3 percent of the respondents said that it had been done while 15.7 percent of the respondents indicated that it had not been done. Carrying out sustainability assessment prior to recommending project for implementation is meant to increase the likelihood of the project being sustainable. In this case, it implies that before recommendation for implementation of World Bank funded projects in Kenya sustainability assessment is normally done.

4.3.3 Determinants of Project Sustainability

The study focused on determining the factors that affect sustainability of World Bank funded projects in Kenya. From reviewing various studies, four key categories of factors were identified; Institutional, Technical, Political and Economic factors. Each of these factors is discussed below.

a) Institutional Factors

The study collected information on the effect of institutional factors on project sustainability, and the responses were as presented in table 4.3.

Table 4.3 Effects Of Institutional Factors on Project Sustainability

Institutional Factors	**Responses**	**Frequency**	**Percent**
Extent to which obligation towards project sustainability are clear	Very clear	28	54.9
	Clear	16	31.4
	Neutral	2	3.9
	Unclear	5	9.8
	Total	**51**	**100**
Involvement of stakeholders in planning for sustainability	Yes	42	82.4
	No	9	17.6
	Total	**51**	**100**
Extent of stakeholder involvement in planning for sustainability	Very small extent	6	11.8
	Small extent	2	3.9
	Neutral	7	13.7
	Large extent	28	54.9
	Very large extent	8	15.7
	Total	**51**	**100**
Influence of stakeholder involvement on project sustainability	Very small extent	3	5.9
	Small extent	3	5.9
	Neutral	7	13.7
	Large extent	28	54.9
	Very large extent	10	19.6
	Total	**51**	**100**
Extent of stakeholder involvement on project implementation	Very small extent	1	2.0
	Small extent	4	7.8
	Neutral	7	13.7
	Large extent	29	56.9
	Very large extent	10	19.6
	Total	**51**	**100**
Extent to which World Bank projects are link to national goals	Very small extent	0	0
	Small extent	0	0
	Neutral	4	7.8
	Large extent	20	39.2
	Very large extent	27	52.9
	Total	**51**	**100**
Extent of project objectives mainstreaming into existing project outcomes	Very small extent	0	0
	Small extent	2	3.9
	Neutral	4	7.8
	Large extent	27	52.9
	Very large extent	18	35.3
	Total	**51**	**100**
Existence of sustainability plan for World Bank projects	Yes	34	66.7
	No	16	31.4
	Missing	1	2
	Total	**51**	**100**

Source of data: Survey 2013

From table 4.3, cumulatively 85.3 percent of the respondents indicated that they clearly understood their obligations on sustainability, while 13.7 percent were either neutral or did not understand their obligation on sustainability. Some of the projects where the respondents indicated that they clearly understood their obligations towards project sustainability were: Micro Small Medium Enterprise Competiveness Project implemented by Ministry if Industrialization and Global Business School Network (GBSN) and Arid Land Resource Management Project implemented by KARI. The responses show that implementers of World Bank funded projects understand what they are expected to do to ensure sustainability of projects. Khang and Moe (2008) asserted that strong teamwork and leadership enhances the likelihood of project sustainability.

When respondents were asked to indicate whether they were involved in planning for sustainability, 82.4 percent indicated that they were involved. Examples of such projects are: Northern Corridor Transport Improvement Project; Micro Small and Medium Enterprises Competiveness Project; and Natural Resource Management Project. 17.6 percent indicated that they were not involved, for example in the expansion of Dandora Sewerage Treatment Works. This was an indication that majority of the respondents were involved in planning for sustainability. This study was also interested in the influence of the involvement of stakeholders on sustainability. 74.5 percent of the sampled respondents indicated that the involvement of stakeholders influences sustainability to a larger extent. From these responses, it can be concluded that the involvement of stakeholders is critical in ensuring that project benefits are sustained over a reasonable duration. There was need also to establish whether stakeholders were

involved in planning for sustainability and 70.6 percent indicated that they involve them while the remaining 29.4 percent were either not sure or indicated that they did not involve them. The importance of stakeholder participation in sustainability of projects funded by the World Bank is supported by Shediac-Rizkallah and Bone, (1998) study on the sustainability of community-based health programmes.

When asked whether World Bank funded projects objectives were designed in line with national goals, 92.2 percent indicated that they were, while only 7.8 percent were not sure. It can be observed that World Bank funded projects were designed with national development goals in mind. The funding of projects is, therefore done in consultation with the recipient governments. Agreement is reached on both the content and design of the project (Ika *et al*., 2011).

Respondents were required to indicate the extent to which project objectives were mainstreamed into the existing project outcomes and 88.2 percent indicated that they were for example was Arid Land Resource Management Project. While 11.8 percent indicated that they were not. It can therefore be interpreted to mean that World Bank funded projects were mainstreamed into the existing project objectives. This is because World Bank funds development projects in consultation with government of the targeted developing countries (World Bank, 2011). When asked if there was a sustainability plan for World Bank funded projects in Kenya, 66.7 percent indicated that it exist while 31.4 percent indicated that it does not exist. The implication of these results is that majority of World Bank funded projects have a sustainability plan. This is

supported by Ika *et al*. (2011) who posited that World Bank funded projects' success is gauged against three key factors which are effectiveness,efficiency and project sustainability.

According to Khang and Moe (2008), the success of projects is dependent on the institutional competencies to handle it. Project implementation is supervised by institutions contracted by the government on behalf of the World Bank. The success and eventual sustainability is dependent on how these institutions handles sustainability issues. From various studies reviewed (Khang and Moe, 2008; Tango International, 2009; Shediac-Rizkallah and Bone, 1998; Ika, 2012 ; Bakalian, 2009), institutional factors thought to affect sustainability were categorized into: clarity of obligation of stakeholders on sustainability; involvement of stakeholders in planning for sustainability; and the extent to which World Bank funded projects are designed with a focus on national goals.

b) Technical factors

The study was interested in understanding the effect of technical factors on the sustainability of World Bank funded projects. The results of the responses are as presented in Table 4.4

Table 4.4: Technical Factors and Project Sustainability

Technical Factors	**Responses**	**Frequency**	**Percent**
Extent of provision of training on project sustainability to beneficiary	Very small extent	4	7.8
	Small extent	5	9.8
	Neutral	2	3.9
	Large extent	28	54.9
	Very large extent	12	23.5
	Total	**51**	**100**
Extent of influence of the inclusion of sustainability in project design on project sustainability	Very small extent	0	0
	Small extent	2	3.9
	Neutral	4	7.8
	Large extent	28	54.9
	Very large extent	17	33.3
	Total	**51**	**100**
Dependence of project sustainability on duration of the implementation of the project	Yes	23	45.1
	No	28	54.9
	Total	**51**	**100**
Extent of the influence of time of implementation on the sustainability of project	Very small extent	26	51.0
	Small extent	2	3.9
	Neutral	2	3.9
	Large extent	15	29.4
	Very large extent	6	11.8
	Total	**51**	**100**
Provision of technical support by project implementers beyond project completion	Yes	24	47.1
	No	27	52.9
	Total	**51**	**100**
Extent of the accuracy of estimates of materials to support sustainability accurate	Very small extent	4	7.8
	Small extent	11	21.6
	Neutral	13	25.5
	Large extent	22	43.1
	Very Large extent	1	2.0
	Total	**51**	**100**

Source of data: Survey 2013

As presented in Table 4.4, 78.4 percent (large extent and very large extent) agreed that provision of training on sustainability affects project sustainability, while the remaining 27.6 indicated that it does not affect. These findings show that if a project is to be sustainable then training on sustainability need to be done before the project is handed over to the beneficiaries.

According to Kealey *et al*. (2005) a training program should be regarded as a unique opportunity in the life cycle of an international project because of its importance in the success of the project. Tango International (2009), Ika, (2012) and Shediac-Rizkallah and Bone, (1998) all concur that training is an component of project sustainability for international development projects. However, from the documents reviewed, there was no indication that technical training on project sustainability was done for World Bank Funded Projects in Kenya.

When the respondents were asked to indicate if sustainability plan was included in the project design, majority indicated that it was included (88.2 percent) while only 11.8 percent indicated that it was not included. These indicate that World Bank funded projects included sustainability in the planning stage. Korner and Pibilova (2002) posit that international development projects should incorporate sustainability in each of the project life cycle from inception to completion. The findings of this study susggest that projects that are designed according to the specific needs of stakeholders have a higher chance of being sustainable.

Forty five percent of the respondents indicated that the duration of project implementation affects its sustainability, while 55 percent indicated that it does not affect. From these findings it is not clear whether duration of the project affect its sustainability or not. Respondents were also asked to indicate the extent to which accuracy of estimates of materials affects project sustainability and 55 percent indicated that it did while 45 percent indicated that it did not. These results show that there is

need for accurate estimates for raw materials to be used in maintaining the project to ensure that beneficiaries continue enjoying the benefits of the project.

c) Political factors

In addition to investigating the effect of institutional and technical factors, the study was interested in understanding the effect of political factors on project sustainability. Table 4.5 presents the responses on how the political factors affect project sustainability.

Table 4.5 Political Factors and Sustainability Results

Political Factors	**Responses**	**Frequency**	**Percent**
Effects of politicians on project sustainability	Very small extent	6	11.8
	Small extent	5	9.8
	Neutral	12	23.5
	Large extent	17	33.3
	Very large extent	11	21.6
	Total	**51**	**100**
Effects of legislation on project sustainability	Very small extent	0	0
	Small extent	8	15.7
	Neutral	6	11.8
	Large extent	23	45.1
	Very large extent	14	27.5
	Total	**51**	**100**
Effects of lobby groups on project sustainability	Very small extent	7	13.7
	Small extent	12	23.5
	Neutral	13	25.5
	Large extent	14	27.5
	Very large extent	5	9.8
	Total	**51**	**100**
Existence of breach of contract	Yes	21	41.2
	No	30	58.8
	Total	**51**	**100**

Source of data: Survey 2013

To assess the effect of political factors on project sustainability, the respondents were presented with statements on each of the variable under political factors and they were asked to provide responses on the extent to which they thought each of the variable affected sustainability of World Bank funded projects in Kenya. From the Table 4.5,

cumulatively, 54.9 percent agreed that politicians affect the sustainability while the remaining percentage (45.1 percent) either agreed to a small extent (21.6 percent) or were neutral (23.5 percent) on the effect of politician on the sustainability of World Bank funded projects. The response rate of 54.9 percent does not distinctively give an indication whether the actions of politicians do actually affect the sustainability of projects. The finding does not conclusively support the conclusions of Mancini and Marek (2004) and that of Khang and Moe (2008) that politicians affect project sustainability.

On legislation and its effect on project sustainability, majority of the respondents, 72.6 percent, indicated that this factor was critical in determining the sustainability against a response rate of 27.2 percent indicating that it does not. It was, therefore deduced that legislation affect the sustainability of World Bank funded projects in Kenya. These findings are consistent with those of Klakegg (2009) and Bamberger and Cheema (1990) who asserted that policy support and consistency in legislaition was crucial in the sustainability of the projects.

When asked about the effect lobby groups have on the sustainability of projects, cumulatively 62.7 percent indicated that this variable does not affect sustainability. The remaining percentage (37.3 percent) indicated that it does affect. This means that lobby groups do not affect sustainability of World Bank funded projects in Kenya.

Fifty eight percent of the respondents indicated that during the implementation of the projects, there was no breach of contract from either party. Examples of such projects were south West Indian Ocean Fisheries Project, Financial Sector Technical Assistance Project and Free Primary Education Support Project. 41 percent of the respondents indicated that there has been a breach of contract. Examples of such projects were Enhancing of Agricultural Productivity Project and Kenya Agricultural Inputs Support Project implemented by KARI. This indicated that World Bank funded project contracts were fairly stable and thus legislation did not affect their sustainability.

d) Economic Factors

The economic factors that were evaluated included increase in interest rate, increase in inflation and increase in taxation. The responses are as indicated in the table 4.6

Table 4.6 Extent to Which Economic Factors Affect Project Sustainability

Economic Factors	Responses	Frequency	Percent
Extent of the effect of taxation rate on project sustainability	Very small extent	5	9.8
	Small extent	9	17.6
	Neutral	11	21.6
	Large extent	13	25.5
	Very large extent	13	25.5
	Total	**51**	**100**
Extent of the effect of changes in interest rate on project sustainability	Very small extent	5	9.8
	Small extent	10	19.6
	Neutral	9	17.6
	Large extent	16	31.4
	Very large extent	11	21.6
	Total	**51**	**100**
Extent of the effect of increase in inflation on project sustainability	Very small extent	2	3.9
	Small extent	3	5.9
	Neutral	7	13.7
	Large extent	23	45.1
	Very large extent	16	31.4
	Total	**51**	**100**
Are funds set aside to fund sustainability	Yes	34	66.7
	No	17	33.3
	Total	**51**	**100**
Person funding sustainability	Beneficiaries	9	17.6
	Government	10	19.6
	Project is self-financing	1	2.0
	Missing	31	60.8
	Total	**51**	**100**

Source of data: Survey 2013

From Table 4.6, it can be seen that cumulatively, 49 percent of the respondents were neutral, or felt that taxation affect sustainability to a small or very small extent, while 51 percent indicated that it either affect to a large extent or very large extent. Examples of such projects that were indicated as being affected by taxation to large extent were Kenya Enhanced Agricultural Productivity Project and National Accelerated Agricultural Inputs Access Program. From the responses, it was not distinctively clear whether taxation affects sustainability or not.

Respondents were asked to indicate the extent to which changes in interest rate affect sustainability and 47 percent indicated that it does not, while 53 percent indicated that it does. From the responses, it was not distinctively clear whether interest rate affect sustainability. Possibly because the cost of borrowing from World Bank is pre-negotiated, the changes in the local interest rates thus may not affect sustainability of World Bank funded projects in Kenya. According to the World Bank, debt instruments are issued to developing countries with varying maturities with both fixed and adjustable interest rates (World Bank, 2009). On the other hand, twenty three and half percent of the respondents indicated that increase in inflation was likely to affect project sustainability, while the remainder 76.5 percent indicated that it does affect. Majority of the respondents seem to agree that inflation affect project sustainability.

When asked whether funds are set aside to fund sustainability, 66.7 percent agreed, while 33.3 percent disagreed. About 60.8 percent did not know who funds sustainability of projects, while the remaining percentage agreed that sustainability financing was shared between government and beneficiaries.

4.4 Inferential Statistics

In order to establish the effect of independent variables on the dependent variable, data was collected on each of the identified independent variable and thereafter, regression analysis was done. However, before carrying out the regression analysis, it was necessary to carry out factor analysis and multicollinearity tests. Factor analysis was done to identify the variables that explained the most variance while multicollinearity

test was carried out to establish if there was any correlation among the identified variables which could affect the interpretation of the results (Pett *et al*., 2003). The existence of multicollinearity means that the variables are highly correlated thus making it hard to separate the influence of independent variables on the dependent variable. Variable inflation factors and tolerance values were used to test if multicollinearity existed.

4.4.1 Factor Analysis Results

In order to determine the underlying variables that explain a pattern of correlation among the dependent variables and to reduce the large number of variables to a number of factors that explain the most variance on the dependent variable, factor analysis was done and the results presented in Table 4.7

Table 4.7: Factor Analysis Results

Factor	Variable	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		Percent of Variance	Cumulative Percent	Total	Percent of Variance	Cumulative percent
Political factors	Politicians	43.87	43.87	1.76	43.87	43.87
	Legislation	31.89	75.76	1.28	31.90	75.76
	lobby groups	17.08	92.83			
	Breach of contract	7.16	100.00			
Institutional factors	Stakeholders	47.46	47.46	1.90	47.46	47.46
	Obligation	30.12	77.58	1.20	30.12	77.58
	Link to national goals	14.92	92.50			
	Sustainability plans	7.50	100.00			
Economic factors	Taxation	81.38	81.38	2.44	81.38	81.38
	Interest rate	16.50	97.87			
	Inflation	2.13	100.00			
Technical factors	Training	40.34	40.34	1.61	40.34	40.34
	Project design	28.56	68.90	1.00	28.56	68.90
	Technical support	15.92	84.82			
	Duration of implementation	15.18	100.00			

Extraction Method: Principal Component Analysis.
Source of data: Survey 2013

Under Political factors, the effect of politicians, change in legislation, the effect of activities of lobby groups/ activists and breach of contract were analysed. Factor analysis method was used to determine the variable that contributed most to changes in the dependent variable. It was established, using principal component analysis, that the effect of politicians and change in legislation were the two important factors under political factors. From Table 4.7, political activities and change in legislation had Eigen values of 1.76 and 1.28 respectively, accounting for a cumulative variance of 75.8 percent. The two variables were therefore used to develop a composite variable for

political factors. The study used Eigen Value of equal or greater than one as a cutoff point as suggested by Beavers *et al.* (2013) and, Costello and Osborne (2013).

The variables that were considered under institutional factors were clarity of obligation on sustainability, involvement of stakeholders in planning, design and implementation of the projects, mainstreaming of project outcome on existing project and incorporating sustainability into project design. Using factor analysis extraction method, two of the above variables were extracted that is stakeholder involvement and clarity of obligation on sustainability, which had Eigen values of 1.90 and 1.21 respectively, with a cumulative variance of 77.58 percent. The rest were omitted because their extraction sum of the square loading was less than the recommended threshold of one. The two variables were therefore used to compute the composite factor for institutional factors. Economic factors only yielded one variable, which was taxation. Change in taxation rate was, therefore used as a measure of economic factors affecting sustainability.

Under technical factors, the principal component analysis yielded training and project design as the only two principal factors. Training had an Eigen value of 1.61 while project design had the value as 1.14 with a cumulative variance of 68.90 percent. The two variables were therefore used to develop a composite measure for technical factors.

4.4.2 Multicollinearity Test Results

Collinearity test was necessary to determine whether the identified independent variables were correlated. Using tolerance and variance inflation factors as suggested by

Menard (2002) and Makau, Wawire, and Ofafa (2010), the collinearity test was performed and the tolerance and variance inflation factors for each of the variable is as shown in Table 4.8

Table 4.8: Multicollinearity Test Results

Factor	Variable	Collinearity statistics	
		Tolerance	VIF
Political factors	Politicians	0.54	1.86
	Legislation	0.36	2.78
Institutional factors	Stakeholders	0.93	1.08
	Obligation on sustainability	0.65	1.53
Economic factors	Taxation	0.60	1.66
Technical factors	Training	0.87	1.16
	Project design	0.87	1.14

Source of data: Survey 2013

As shown in the Table 4.8, tolerance values for the two political factors, that is effect of politicians and change in legislation, were 0.54 and 0.36 respectively which was within the acceptable limits of not greater than 1.0 while the variance inflation factors for the two variables were 1.86 and 2.78, respectively further indicating that multicollinearity was not evident among the two variables. The acceptable levels for Variable Inflation factor (VIF) should be less than 10. The two variables were , therefore used to compute the composite value for the political factor.

Under institutional factors, stakeholder involvement and clarity on the obligation of each player on sustainability were found to have tolerance values of 0.93 and 0.65

respectively, indicating that multicollinearity was not a problem. The VIF for the two variables were found to be 1.08 and 1.53 respectively.

Changes in interest rates and change in inflation was found to be highly correlated and therefore were omitted from the logit model and consequently the analysis. Taxation had a Variance inflation factor of 1.66 and tolerance value of 0.60 thus, multicollinearity with other variables was ruled out. Taxation was therefore used as indicator of economic variable.

Under technical factors, training on project sustainability and incorporation of sustainability at project design stage were found not to be correlated. The tolerance values for both training and project design were found to be 0.87 while VIF were 1.16 and 1.14 for training and project design respectively. Therefore, multicollinearity was not detected and the two variables were used to compute the composite variable for the technical factor. Increase in interest rate and inflation were found to be linearly correlated, and thus were omitted from the regression analysis.

In addition to calculating tolerance and variance inflation factors to test for multicollinearity, correlation analysis was used (Appendix I, Table A5) and it was found that none of the identified variables were strongly correlated thus not posing any challenge in the estimation of the model and interpretation of the results.

4.4.3 Regression Results and Interpretation

In the preceding section, factor analysis, and multicollinearity test results were presented and discussed on each of the variable. There was need to draw inferences using inferential statistics. Logit model was used to analyse the importance of each of the variable and the extent to which it affects the sustainability of World Bank funded projects. Using the results of factor analysis, and upon establishing that multicollinearity was not a problem in the regression analysis, composite variables were computed for each of the key variables for the study. The composite variables were then regressed using the logit model to determine the contribution of each of the independent variable on the dependent variable. The results of the logit regression is as shown in Table 4.9

Table 4.9 Logit Regression Results

Factors	**Coefficient**	**S.E.**	**Wald**	***p* -value**
Institutional factors	3.745**	1.282	8.539	0.003
Technical factors	2.860**	0.957	8.921	0.003
Political factors	0.667	0.439	2.305	0.129
Economic factors	-0.052	0.547	0.009	0.925
Constant	-26.613**	7.750	11.791	0.001
Description		**Value**		
Observations		51		
Nagelkerke R Square		0.671		
Cox and Snell R Square		0.498		
Omnibus Test of Model coefficients		Chi-square=35.129, d.f =4, p =0.000		
Classification rate		86.3 percent		
-2 Log likelihood		33.975		
Hosmer and Lemeshow Chi-square		5.128 , p value= 0.744, (8 d.f)		

** implies that the coefficient is significant at 5% percent level

Source: Survey data (2013)

The results in Table 4.9 show that the chi-square value was 35.129 with 4 degrees of freedom and a p -value of ≤ 0.01 implying that the model was statistically sound. The -2 log likelihood of 33.98 shows that the model fits the research data. The -2 log likelihood measures how well the model fit the data (Pallant, 2005). Nagelkerke R-Square of 0.671 indicates that 67.1 percent of variations in the sustainability variable (Dependent Variable) were explained by the composite factors which are Political, Institutional, Economic and Technical factors.

Hosmer and Lemeshow chi-square measure the extent to which the model fits the data. Well-fitting models show non-significance on the Hosmer and Lemeshow goodness-of-fit test (Pallant, 2005). From the results, the p -value was 0.744 which implied that the

model was a good fit. The desirable outcome of non-significance indicates that the model prediction does not significantly vary from the observed. The classification Table A4 in Appendix I shows the proportion of cases which have been classified correctly. From this Table, 86.7 percent were correctly classified for non-sustainable group while 85.7 percent were correctly classified for sustainable group giving an overall prediction success rate as 86.3 percent.

Hypothesis $_1$; Institutional factors do not influence the sustainability of World Bank funded project

The coefficient of institutional factors was significant and positive implying that the involvement of stakeholders in planning and design of project and clarifying their responsibilities as regards to sustainability increases the chances of project being sustainable. This result supports the alternate hypothesis that institutional factors affect the sustainability of World Bank Funded Projects in Kenya. The null hypothesis was thus rejected. These findings are consistent with those of Ishan *et al*. (1995) who asserted that stakeholder participation affects project performance and sustainability.

Hypothesis 2; Technical factors do not affect the sustainability of World Bank funded project

The coefficient of Technical factors was found to be significant and positive, implying that the more the efforts on training on project sustainability and project design, the more likely the project will be sustainable.

The provision of technical training on how to sustain the project benefits, incorporation of sustainability in project implementation and design plays a critical role in the sustainability of the projects. These findings concurs with those of Ika *et al.* (2012) who asserted that project design is the most important critical success factors for World Bank funded projects. The null hypothesis that technical factors do not affect project sustainability was thus rejected.

Hypothesis $_3$; Political factors do not affect sustainability of World Bank funded project

The coefficient of political factors was not significant though it was positive. The null hypothesis that political factors do not affect the sustainability of World Bank funded projects was not rejected. It implies therefore that from the results of this study that political factors do not affect sustainability of World Bank funded projects in Kenya. The findings contradict that of Ika (2012) which found that international development projects are good target for political manipulation and thus affected by politics, the difference in the findings between this study and that of Ika (2012) could have arisen due to differences in the study areas. Effect of politics and change in legislation were, therefore found not to affect the sustainability of World Bank funded projects in Kenya.

The choice of development project to be funded and implemented by international development agencies is political in nature since national political leaders and policy makers are involved (Ika *et al.,* 2002). According to Ozorhon *et al.* (2007) political factors include: inconsistency in policies; changes in laws and regulations; political

violence and breach of contract. From the review of several studies (Mubila, 2000; Tango International, 2009; Klakegg, 2009; Ika *et al*., 2011), political variables affecting sustainability were broken down into political leaders, change in legislation, actions of lobby groups and the adherence to project contractual terms. A study by Mancini and Marek (2004) on the sustaining community based projects pointed out that what local politicians think is not always a represenative of what the users really want. In addition Khang and Moe, (2008) asserts that individual politicians and political parties may push for projects, which may not be feasible or oppose feasible projects for their own good at the expense of community interests. Change in legislation during or after project completion may affect its sustainability. Additionally, adherance to the terms of contract was expected to affect project sustsinability to a greater extent (Bamberger and Cheema , 1990; Mubila, 2000; Klakegg, 2009).

Hypothesis 4; Economic factors do not affect sustainability of World Bank funded project

Under the economic factors, taxation level, changes in interest rates, and inflation rate had been identified as possible factors that influence project sustainability. The coefficient of economic factors was negative with a value of - 0.052, implying that the increase in taxation was likely to decrease the likelihood of project sustainability. However, coefficient of this factor was found not to be significant in this study, thus implying that the data collected does not support the rejection of the null hypothesis that there was no relationship between economic factors and sustainability of World Bank funded projects. Based on the results of the study, it can thus be inferred that economic

factors did not affect sustainability of World Bank funded projects in Kenya. Hence, the null hypothesis was therefore not rejected.

CHAPTER FIVE

SUMMARY, CONCLUSION AND POLICY IMPLICATIONS

5.1 Introduction

The chapter presents summary of the study, conclusions, contribution to knowledge, policy implications and areas for further research.

5.2 Summary

The World Bank has funded many projects in Kenya since 1960s with varying degree of success. On average each year, the World Bank lends between US$15 – US$20 billion for projects in more than 100 countries in the world. The World Bank has supported Kenya since financial year 1960/61 with total bank commitments of about $4.2 billion between 1960 and 2000. As of September 2009, the World Bank's portfolio in Kenya consisted of 16 active operations, with total commitments of over US$1.4 billion.

Compared to other East Africa countries, Kenya has not performed very well on the sustainability of World Bank funded projects. From the reviewed literature, World Bank funded projects face a number of challenges in different parts of the world. These include bad governance, conflicts, inadequate project management capacity, poor project design, politics, physical or geographical location issues, and corruption. The study focused on investigating the determinants of projects sustainability in Kenya. Specifically, the study investigated the effects of institutional, technical, political and economic factors on sustainability of World Bank funded projects in Kenya.

Using cross-sectional design, the study was able to obtain data over the same period of time and explanatory research design was used to establish the cause and effect relationship between sustainability and institutional, technical, political and economic variables. Data that was collected was analysed by use of descriptive and inferential statistics. Logit model was specifically used to check the likely effects of each of the independent variables on the sustainability of the projects funded by the World Bank. The study focused on four composite independent variables, institutional, technical, political and economic factors.

The coefficient of political factors was found not to be significant. The two variables that were considered in the study were; politicians and change in legislation and their effects on sustainability of World Bank funded projects. Actions of politicians as well as change in legislation were found not to affect sustainability of World Bank funded projects.

The coefficient of institutional factors was found to be significant and thus these factors contributed to the sustainability of World Bank Funded Projects in Kenya. The two factors that were considered under the institutional factors and their coefficients found to be significant were involvement and clarity of obligation of stakeholders on sustainability.

The coefficient of economic factor was found not to be significant. The variable that was used in the study as regards economic factor was taxation whose coefficient was found to be insignificant, thus not affecting sustainability of World Bank funded projects in Kenya.

Under technical factors, training on project sustainability and incorporation of sustainability during project design was found to contribute to project sustainability. Overall, the coefficients of institutional factors and technical factors were found to be significant, thus affecting project sustainability while the coefficients of economic and political factors were not significant.

5.3 Conclusion

Sustainability of projects is crucial in the economic development of any country. Project success should not only be viewed from the traditional three success criteria of cost, time and quality but also from the perspective of sustainability. The success of the Kenya's Vision 2030 is anchored on the three pillars economic, social and political pillars. Under each of these pillars are flagships projects which the government and other parties intends to deliver in order to realize the objective of the Vision 2030 which is to transform the country into rapidly industrializing middle-income country.

The achievement of the Vision of 2030 is dependent on the sustainability of projects identified under each pillar. The findings indicated that political and economic factors

do not affect project sustainability while technical and institutional factors affect the sustainability of World Bank funded projects in Kenya.

Institutional factors that were found to affect sustainability were involvement of stakeholders and clarity of responsibilities. On technical factors, two variables that were found to affect project sustainability were training on project sustainability and incorporating sustainability into project design. The provision of technical training on how to sustain the project benefits, incorporation of sustainability in project implementation and design plays a critical role in the sustainability of the projects.

Under political factors, the effect of politicians, change in legislation, the effect of actions of activists and breach of contract were found not to affect project sustainability. It implied, therefore that political factors do not affect sustainability of World Bank funded projects in Kenya. Equally, economic factors were found not affect sustainability of World Bank funded project in Kenya.

From the literature reviewed, it was established that Kenya had an overall sustainability rating of 49 percent on World Bank funded projects, which is low as compared to other east African countries which had a higher sustainability rating. To improve Kenya's rating on sustainability, the government needs to focus on the training of beneficiaries on sustainability so that they can take full control of the project when the financial support has come to an end. In addition, involvement of stakeholders, incorporation of sustainability into project design, and provision of support beyond the project

completion is critical in ensuring that World Bank projects are sustainable. The government also needs to address the institutional set up and ensure that sustainability is taken into consideration.

5.4 Contribution to Knowledge

Though sustainability has been a concern world over, most of the studies have been focused on the environmental, social and economic sustainability of societies. None has focused on the sustainability of World Bank funded projects in Kenya. While most studies focused on the determinants of project success, none has specifically focused on the sustainability of projects in Kenya. The study therefore has shed light on the determinants of sustainability of project benefits of World Bank funded projects in Kenya, which the previous studies did not.

Most of the studies done by the World Bank centered more on completion of projects and not on their sustainability. While determinants of project sustainability are expected to be universal and cutting across most countries, this study found out that, unlike other projects, economic and political factors did not have an influence on project sustainability. The current study presented insights into what determines the sustainability of World Bank funded projects in Kenya. It was established that training on sustainability, incorporating sustainability into project design greatly enhances its chances of sustainability. In addition, stakeholder involvement and clear responsibilities of each party also contributes to the sustainability of World Bank funded projects in

Kenya. The study also contributes to the body of knowledge by testing the logit model and its applicability in sustainability of project.

5.5 Policy Implications

The National Treasury should ensure that the role of stakeholders on sustainability is clearly spelled out in project description document before funds are released to project implementers. This will ensure that the project outcome is satisfactory to all the stakeholders, thus increasing the chances of project sustainability. This is because the findings of this study showed that the clarity of stakeholder's roles affects project sustainability.

According to the findings of this study, under institutional factors, stakeholder involvement during implementation is necessary for project sustainability. The involvement will make the stakeholders own the project outcome and thus enhances the success of projects sustainability. Hence, the World Bank should use stakeholder involvement as one of the criteria for assessing project viability during project approval. This will ensure that the government puts into consideration the role of stakeholders on project implementation and eventually sustainability.

Under technical factors, training on project sustainability was found to affect project sustainability and thus government through the National Industrial Training Authority should provide all project stakeholders with suitable and sustainable training on project

sustainability. This will ensure that the stakeholders are aware of the critical role they play in project sustainability during and after project implementation. The results of the study showed that the awareness of stakeholders' roles contributes to the project sustainability.

The World Bank through the relevant government agencies should make sustainability one of the key considerations for project funding approval by ensuring that sustainability is incorporated into project design and that it is a mandatory requirement for funding. This is because the study findings showed that incorporating sustainability at the project design stage enhances the chance of project sustainability.

The Government of Kenya should ensure that the project contractors provide technical support beyond project completion. Provision of technical support will enhance the chances of project sustainability. This is because the study findings showed that provision of technical support by project implementers plays a critical role in the success of project sustainability.

The government of Kenya, through Public Procurement Oversight Authority, should ensure that the cost and quantities of material to support sustainability are fairly accurate. The results of the study showed that the accuracy of estimates of material affects project sustainability. Another factor that was found to influence project sustainability under institutional factors was the incorporation of sustainability in the organization structure. The project contractors should ensure that they incorporate

sustainability in their organization structure and possibly create a position that specifically deals with sustainability by creating the position of a sustainability manager. The results of this study showed that incorporating sustainability into the organization structure contributes to the project sustainability.

5.6 Limitations of the Study and Areas for Further Research

Not all the respondents were willing to provide feedback because of the suspicion inherent in any research despite being assured of the confidentiality. This encouragement and clarification yielded good response rate which was sufficient for data analysis, interpretation, conclusion and drawing of policy implications.

Sustainability of projects occurs after the project is completed. It was therefore a challenge in tracing some of the respondents after project completion, and effort was made to ensure that data was collected from care taker committee or the staff in charge of the project in government ministries or departments.

Apart from World Bank, other donors have significantly contributed to financing projects in Kenya for example, African Development Bank (AfDB), USaid and UKaid. Further research can therefore be carried on the sustainability of projects funded by these organizations. In addition, research can be carried out on projects funded through internally generated funds by the government.

A comparative analysis can be carried out to establish the sustainability rate among the different donor funded projects. This may shed some light on the most effective source of funding sustainable projects in Kenya.

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APPENDICES

Appendix I: Tables

Table A1: OED Ratings of project performance for Kenya and comparator Countries

Country	Total Evaluated $m	Outcome (percent satisfaction)	Sustainability (Percent likely)
Kenya	**1,738.3**	**55.1**	**4.9**
Uganda	2,150.7	67.5	59.5
Tanzania	1,708.8	70.1	70.1
Ghana	2,445.5	61.1	64.7

Source: World Bank database as of November 5, 2003

Table A2: World Bank completed projects between 2000-2012

S/N	PROJECT NAME	PROJECT ID
1	Recycling and disposal of LLIN used for Malaria vector control	P116269
2	BEIA-Scaling up Biodiesel Production in Kenya	P120038
3	Enhancing Agricultural Productivity Project	P119736
4	Kenya Agricultural Input Supply Program	P116064
5	Nairobi National Park Ecosystem Wildlife Conservation Lease Project	P083172
6	Development of The National Statistical System Project	P085414
7	Kenya Microfinance for Water Services Project	P104075
8	BioCF Kenya Greenbelt Movement	P099628
9	Education Sector Support Program	P087479
10	Kenya Arid Lands Resource Management Project Emergency Additional Financing	P100762
11	Institutional Reform and Capacity Building Technical Assistance Project	P090567
12	Western Kenya Integrated Ecosystem Management Project	P072981
13	Financial and Legal Sector Technical Assistance Project	P083250
14	Micro, Small, and Medium Enterprise Competitiveness Project	P085007
15	Kenya Agricultural Productivity Project	P082396
16	Nairobi Water and Sewerage Institutional Restructuring Project	P049618
17	Development Learning Centre Project	P078209
18	Fifth Dimension: FY03 IDA Reflows	P083594
19	Free Primary Education Support Project	P082378
20	Arid Lands Resource Management Project Phase Two	P078058
21	Fifth Dimension: FY02 IDA Reflows	P078932
22	Public Sector Management Technical Assistance Project	P066490
23	Regional Trade Facilitation Project – Kenya	P070718

24	Economic & Public Sector Reform Credit - FY01 IDA Reflows	P074338
25	Decentralized Reproductive Health & HIV/AIDS	P066486
26	Emergency Power Supply Project	P071196
27	HIV/AIDS Disaster Response Project	P070920
28	Economic and Public Sector Reform Credit Project	P069501
29	Lewa Wildlife Conservation Project	P059868
30	El Nino Emergency Project	P056595
31	Structural adj. Cred	P056312
32	Energy Sector Reform and Power Development Project	P001344
33	Early Childhood Development	P034180
34	National Agricultural Research Project (NARP) (02)	P001354
35	Tana River Primate National Reserve Conservation Project	P001217
36	Structural Adjustment Credit	P049332
37	KE: Lake Victoria Environment Project. (IDA)	P046838
38	Lake Victoria Environment (GEF)	P046871
39	Structural Adjustment Credit Project	P001334
40	Structural Adjustment Credit I	P045738
41	Urban Transport Project	P001319
42	Nairobi - Mombassa Road Rehabilitation Project	P035691
43	Arid Lands Resource Management Project	P001331
44	Kenya Sexually Transmitted Infections Project	P001333
45	Institutional Development and Civil Service Reform Project	P001367
46	Micro and Small Enterprise Training and Technology Project	P001353
47	Education sector adjustment credit	P035579
48	Emergency Drought Recovery Project (EDRP)	P001369
49	Education sector adjustment project	P001372
50	Agricultural Sector Management Project (02)	P001342
51	Parastatal Reform and Privatisation TA Credit Project	P001348
52	Protected Areas and Wildlife Services Project	P001345
53	Mombasa and Coastal Water Supply Engineering and Rehabilitation	P001361
54	Health Rehabilitation Project	P001339
55	Universities Investment Project	P001362
56	Education Sector Adjustment Credit Project (01)	P001327
57	Agriculture Sector Adjustment Credit Project (02)	P001326
58	National Agricultural Extension Project (02)	P001300
59	Forestry Development Project	P001322
60	Export Development Project	P001352
61	Financial Parastatals Technical Assistance Project	P001357
62	Population Project (04)	P001312

Table A3: Reliability Test Results

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Political activities	21.22	41.073	.352	.622	.842
Change in Legislation	21.64	39.460	.610	.635	.815
Activist activities	20.78	38.093	.577	.486	.818
Project objectives	22.00	43.755	.409	.449	.833
Economic factors	22.06	43.894	.438	.562	.832
Taxation	21.18	35.293	.732	.905	.800
Interest rate	21.14	34.409	.816	.925	.790
Inflation	21.74	39.298	.621	.565	.814
Material cost estimates	21.04	43.386	.313	.481	.841
Training	21.58	40.085	.466	.511	.829

Source: Pilot data , 2013

Table A4: Classification Table

Observed			Predicted		
			composite for sustainability		Percentage Correct
			Not sustainable	sustainable	Not sustainable
Step 1	composite for sustainability	Not sustainable	26	4	86.7
		Sustainable	3	18	85.7
	Overall Percentage				86.3

a The cut value is .500

Source: Survey data , 2014

Table A5: Correlations Coefficient of Individual Factors

		politicians	Legislation	Clarity Obligation	stakeholder involvement	taxation	project design	Training
politicians	Pearson Correlation	1						
	Sig. (2-tailed)							
Legislation	Pearson Correlation	.617(**)	1					
	Sig. (2-tailed)	.000						
clarity of obligation	Pearson Correlation	.068	.471(**)	1				
	Sig. (2-tailed)	.635	.000					
stakeholder involvement	Pearson Correlation	-.043	.060	.343(*)	1			
	Sig. (2-tailed)	.764	.676	.014				
taxation	Pearson Correlation	.233	.531(**)	.349(*)	.217	1		
	Sig. (2-tailed)	.100	.000	.012	.126			
sustainability on project design	Pearson Correlation	-.040	-.203	-.137	-.102	-.299(*)	1	
	Sig. (2-tailed)	.780	.152	.336	.478	.033		
Training	Pearson Correlation	.098	.190	.178	.304(*)	.325(*)	.049	1
	Sig. (2-tailed)	.496	.181	.212	.030	.020	.731	

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Source: Survey data , 2014

Appendix II: World Bank Project Cycle

1. Country Assistance Strategy

The World Bank proposes financial, advisory and technical services to help countries identify their priorities and reach their main development goals.

2. Identification

Ideas for creating meaningful change are discussed. Borrower and Bank representatives weigh development objectives and project impacts, risks, alternatives and timetable.

3. Preparation, Appraisal and Board Approval

With advice and financial assistance from the Bank, the Borrower conducts studies and prepares detailed project documentation. The Bank assesses the economic, technical, institutional, financial, environmental and social aspects of the project. When the Bank and the Borrower agree on the terms of a loan or credit, the project is presented to the Bank's Board of Executive Directors for approval.

4. Implementation and Supervision

The Borrower implements the project, issuing contracts through a competitive bidding process that follows the Bank's procurement guidelines. World Bank staff periodically supervises the project to make sure that the loan proceeds are used for intended purposes and with due regard for economy, efficiency and effectiveness.

5. Implementation and Completion

At the end of the loan or credit disbursement period (anywhere from 1-10 years), a completion report identifying project results, problems and lessons learned is submitted by operations staff to the Bank's Board of Executive Directors for information purposes.

6. Evaluation

After a Borrower completes a project, the Bank's Independent Evaluation Group (IEG) measures the outcomes against original objectives and assesses whether or not the project's results can be maintained over the long term. A number of projects are further scrutinized in detailed impact evaluation reports.

Appendix III: Research Instrument

KENYATTA UNIVERSITY
SCHOOL OF BUSINESS

Dear respondent

SUBJECT: REQUEST FOR FILLING OF QUESTIONARE

My name is Paul K Sang a PhD student from Kenyatta University. This is to kindly request you to fill in the questionnaire below to assist in collecting data for PhD work. Data collected will be treated with a lot of confidentiality and will not be used for other purpose other than for academic purpose. A copy of the thesis will be provided to you upon request. I am looking forward for your sincere response to each of the questions in the attached questionnaire.

Thank you

Paul K Sang
PhD student

Part A: Background Information

Instructions: Answer the following questions by putting your response in the spaces provided or by ticking appropriately in the boxes provided.

1. a) Name of the organization/ ministry……

   b) Name of the department/unit……..

2. What is your gender (tick as appropriate)

   [ ] Male [ ] Female

3. What is your age (tick as appropriate)

   [ ] 18 years to 25 years

   [ ] 26 years to 35 years

   [ ] 36 years to 45 years

   [ ] 46 years to 55 years

   [ ] 55 years and above

4. Your highest educational qualification

   [ ] secondary school certificate

   [ ] College level

   [ ] First degree

   [ ] Master's Degree

   [ ] PhD degree

   [ ] Others (Specify) ……

5. How long have you worked in the current organization?

   [ ] Less than one year [ ] One to three years [ ] Four to six years [ ] Over six years

PART B: General Information on Project Sustainability

Instructions: The following questions relate to sustainability of any project funded by World Bank and completed within the last 10 years.

Project Name:……..

6. Are more than fifty percent (50 percent) of the intended beneficiaries using/ benefiting from the project outcome?

   [ ] Yes [ ] No

7. Are the facilities operational?

   [ ] Yes [ ] No [ ] Not Applicable

8. Is there evidence of the existence of desirable project outcome?

   [ ] Yes [ ] No

9. Are the beneficiaries or users involved in decisions regarding the management of project outcome?

   [ ] Yes [ ] No

10. Does the organization have management structure to manage continual flow of benefits from the project?

    [ ] Yes [ ] No

11. Is there a national policy statement that clearly defines respective responsibilities of all stakeholders regarding project sustainability?

    [ ] Yes [ ] No

12. Did all the Stakeholders provide substantive input into problem identification and project design?

    [ ] Yes [ ] No

13. Did the intended users take part in the evaluation design and the review as a means of indicating their level of satisfaction with project benefits?

[ ] Yes [ ] No

14. Have there been any political events that have adversely affected the benefits stream since project completion?

[ ] Yes [ ] No

15. a) Is project sustainability assessment done before funds approval?

[ ] Yes [ ] No

b) If yes, who does it?

[ ] Internal staff [ ] External consultant

[ ] Others (specify)…….

16. In the following table, give your opinion on the extent to which the following players influence project sustainability.

Stake holders	Very large extent	Large extent	Moderate extent	Small extent	Very small extent
Government (political leadership)					
World Bank officials					
Project Implementers(contractors)					
Beneficiary/ users					
Others (specify)					

17. A) Does your organization do post-audit of project i.e. after completion?

[ ] Yes [ ] No

b) If yes, how long after the project completion?

[ ] immediately after completion [ ] after the lapse of sometime

[ ] others (specify) ----------

18. To what extent is the project sustainability a priority for your institution?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small

19. a) To what extent is evaluation for project sustainability done during the course of project implementation?

    [ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small

    b) If yes what is the purpose of evaluation?

    ---

20. Who is responsible for the project sustainability after project closure (multiple answers allowed)

    [ ] Government

    [ ] World Bank

    [ ] Beneficiary

    [ ] Others (specify)……

Part C: Determinants of Project Sustainability

A. Politics And Project Sustainability

21. In your opinion to what extent is project sustainability affected by politicians (tick as appropriate)

    [ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small

22. To what extent does change in legislation which relates to project affect project sustainability?

    [ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small

23. To what extent do lobby groups/ activists influence project sustainability?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small

24. Has there been a breach of contract relating to project implementation?

[ ] yes [ ] No

If yes, to what extent does breach of contract influence project sustainability

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small

25. What other political factors affect project sustainability

	Political Factors
1	
2	
3	
4	
5	
6	

B. Institutional Factors and Continued Delivery of World Bank Funded Project

26. To what extent are your obligations towards project sustainability clear?

[ ] Very clear [ ] Clear [ ] Neutral [ ] Unclear [ ] Not obligated

27. a) In your opinion are stakeholders involved in planning for sustainability?

[ ] yes [ ] No

b) If yes, to what extent are they involved?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

c) To what extent does their involvement influence project sustainability?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

28. To what extent are all stakeholders involved in the implementation of the project?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

29. In your opinion, to what extent are World Bank Funded projects' objectives linked to national or societal goals?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

30. To what extent are project objectives mainstreamed into existing project outcomes?

[ ] very large extent [ ] large extent [ ] Neutral [ ] small extent [ ] very small extent

31. Does your organization have a sustainability plan for projects funded by World Bank?

[ ] yes [ ] No

32. In the space provided, list other institutional factors that affect project sustainability

	Institutional Factors
1	
2	
3	
4	
5	
6	

C. Economic factors and Project Sustainability

33. To what extent is project sustainability affected by economic factors? (tick as appropriate)

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

34. To What extent does taxation rate affect project sustainability?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

35. To what extent does interest rate affect project sustainability?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

36. To what extent does inflation affect project sustainability?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

37. a) Are there funds set aside for funding project sustainability?

[ ] yes [ ] No

b) If yes, who funds the sustainability of the project sustainability?

[ ] Beneficiaries [ ] Government

[ ] Project is self-sustaining [ ] others (specify)…….

38. What other economic factors affect project sustainability?

S.no	Economic factors
1	
2	

D) Technical Factors and Continued Delivery of Project Benefits

39. To what extent is training on project sustainability provided to the beneficiaries?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

40. To what extent does the inclusion of sustainability in project design influence

project sustainability?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

41. Is project sustainability dependent on the duration of implementation of the project?

[ ] yes [ ] No

If yes, to what extent does time of implementation influence project sustainability?

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

42. Is technical support provided by project implementers beyond the project completion period?

[ ] yes [ ] No

43. To what extent are estimates for materials to support sustainability accurate

[ ] Very large extent [ ] Large extent [ ] Neutral [ ] Small extent [ ] Very small extent

44. What other technical factors affect project sustainability

S.no	Technical factors
1	
2	

E) Socio Cultural Issues and Project Sustainability

45. To what extent do you agree with the following statement regarding socio cultural factors and their influence on project sustainability (tick as appropriate)

Statement	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
Culture of the beneficiaries affects the continued delivery of project benefits					
Religion of the beneficiaries affects the continued delivery of project benefits					
Geographical region where the project is done affects its sustainability (Eastern, Western, Rift valley etc.)					
The level of education of the project's targeted beneficiaries will affect it sustainability					
Others (specify) ……..					

46. How do economic factors affect project sustainability

[ ] Positively [ ] Negatively [ ] Neutral

47. How do institutional factors affect project sustainability

[ ] Positively [ ] Negatively [ ] Neutral

48. How do socio-cultural factors affect project sustainability

[ ] Positively [ ] Negatively [ ] Neutral

49. How do technical factors affect project sustainability

[ ] Positively [ ] Negatively [ ] Neutral

50. How do political factors affect project sustainability

[ ] Positively [ ] Negatively [ ] Neutral

THANK YOU FOR FINDING TIME TO ANSWER THIS QUESTIONNAIRE

Appendix IV: Research Permit

PAGE 2

THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miss/Institution
Paul Kipyegon Sang
of (Address) Kenyatta University
P.O. Box 43844-00100, Nairobi.
has been permitted to conduct research in

Location
District
Nairobi County

On the topic: Sustainability of World Bank Funded Projects in Kenya.

for a period ending: 30th September, 2015.

PAGE 3

Research Permit No. *NACOSTI/RCD/14/013/1718*
Date of issue *8th October, 2013*
Fee received *KSH. 2000*

Applicant's Signature

For: Secretary
National Commission for Science
Technology & Innovation