

**APPLICATION OF PROJECT DESIGN TOOLS ,MANAGERS'  
COMPETENCIES AND PERFORMANCE OF COMMUNITY  
BASED PROJECTS IN BUNGOMA COUNTY,KENYA**

**BY  
WASIKE WILBERFORCE WALUBENGO**

**A Thesis Submitted in Partial Fulfillment of the requirement for the  
Award of Doctor of Philosophy Degree in Project Planning and  
Management of the University of Nairobi**

**2019**

**DECLARATION**

This doctoral thesis is my original work undertaken by myself and therefore has not been presented whatsoever for any academic award elsewhere.

Signature..... Date.....

**WASIKE W. WALUBENGO**

L83/50531/2016

This doctoral thesis has been submitted for examination with our approval as the university supervisors.

Signature..... Date.....

**PROF. DOROTHY NDUNGE KYALO**

School of Open and Distance Learning

University of Nairobi

Signature..... Date.....

**DR. ANGELINE SABINA MULWA**

Senior Lecturer

School of Open and Distance Learning

University of Nairobi

## **DEDICATION**

This thesis is dedicated to my parents for their love and support throughout my studies.

## **ACKNOWLEDGEMENT**

I thank the Almighty God for granting me the strength and wisdom that has enabled me to undertake this PhD course to completion.

I wish to express my heartfelt appreciation to the supervisors Prof. Ndunge Kyalo and Dr. Angeline Mulwa, for the guidance, support and invaluable input, professional advice and encouragement throughout the time of this thesis writing. I also wish to acknowledge the University of Nairobi fraternity for giving me a chance to further my studies and providing the necessary materials to achieve my educational goals. I also wish to thank the staff who were always available for necessary support providing an enabling environment for conducive learning. I would also like to extend gratitude to my classmates for sharing their pearls of wisdom during the course of my studies and when carrying out this research. It is their moral support during my study period and cooperation during assignments, tasks, group discussions and class debates which we had to accomplish together that eased up our study period.

Special thanks also go to my family, especially my parents, my wife and children for their financial, spiritual and moral support which acted as fuel to enable my studies. Thank you. May God bless you abundantly. I would also wish to appreciate the National Commission for Science, Technology & Innovation (NACOSTI) for issuing research permit that authorized the research process. Ministry of Interior and Coordination of National Government, office of Bungoma County Commissioner and Ministry of Education, Science and Technology (State Department of Education) Bungoma County for the authorization without which this research could not have taken place. I extend special gratitude to the study's respondents; and to my colleagues at work who stepped in for me when I had to attend to my studies.

## **TABLE OF CONTENTS**

<b>DECLARATION</b> .....	ii
<b>DEDICATION</b> .....	iii
<b>ACKNOWLEDGEMENT</b> .....	iv
<b>LIST OF TABLES</b> .....	x
<b>LIST OF FIGURES</b> .....	xiii
<b>ABBREVIATIONS &amp; ACRONYMS</b> .....	xiv
<b>ABSTRACT</b> .....	xv
<b>CHAPTER ONE: INTRODUCTION</b> .....	1
1.1 Background to the Study.....	1
1.1.1 Performance of Community Based Projects .....	4
1.1.2 Application of Project Design Tools.....	5
1.1.2.1 Logical Framework .....	7
1.1.2.2 Stakeholder Analysis.....	7
1.1.2.3 Problem Tree Analysis.....	8
1.1.2.4 Gantt Charts .....	8
1.1.3 Manager`s Competencies .....	9
1.1.4 Situation Analysis of Bungoma .....	10
1.2 Statement of the Problem.....	11
1.3 Purpose of the Study .....	13
1.4 Objectives of the Study .....	14
1.5 Research Questions .....	14
1.6 Research Hypotheses .....	15
1.7 Significance of the Study .....	15
1.8 Assumption of the Study.....	16
1.9 Limitations of the Study.....	16
1.10 Delimitation of the Study.....	16
1.11 Definition of key Terms.....	18
1.12 Organization of the Study .....	20

<b>CHAPTER TWO: LITERATURE REVIEW</b> .....	21
2.1 Introduction.....	<b>Error! Bookmark not defined.</b>
2.2 Performance of Community Based Projects .....	21
2.3 Logical Framework and Performance of Community Based Projects.....	25
2.4 Stakeholder Analysis and Performance of Community Based Projects .....	28
2.5 Problem Tree Analysis and Performance of Community Based Projects .....	30
2.6 Gantt Charts and Performance of Community Based Projects .....	33
2.7 Project Design Tools and Performance of Community Based Projects.....	36
2.8 Project Managers’ Competencies and Performance of Community Based Projects .....	37
2.9 Theoretical Orientation .....	44
2.9.1 Systems Theory.....	44
2.9.2 Stakeholder Theory .....	45
2.9.3 Resource-Based View of the Firm Theory .....	49
2.10 Conceptual Framework.....	50
2.11 Summary of Research Gaps .....	53
2.12 Summary of Literature Review.....	64
<b>CHAPTER THREE: RESEARCH METHODOLOGY</b> .....	65
3.1 Introduction.....	65
3.2 Research Paradigm.....	65
3.2.1. Research Design.....	66
3.3. Target Population.....	66
3.4. Sample Size and Sampling Procedure .....	68
3.4.1 Sample Size.....	68
3.4.2 Sampling Procedure .....	70
3.5. Data Collection Instruments.....	70
3.5.1 Questionnaire for other Project Employees .....	71
3.5.2 Interview Guide for Project Managers.....	71
3.6. Pilot Test .....	71
3.6.1 Validity of the Instruments .....	72
3.6.2 Reliability of the Instruments.....	72
3.7 Data Collection Procedure .....	74

3.8 Data Analysis Techniques.....	74
3.9. Regression Models .....	75
3.10 Ethical Considerations .....	79
<b>CHAPTER FOUR.....: DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION .....</b>	<b>83</b>
4.1 Introduction.....	83
4.2 Response Rate .....	83
4.3 Demographic Information.....	84
4.3.1 Distribution of the Respondents by Sector .....	84
4.3.2 Distribution of the Respondents by Gender .....	85
4.3.3 Distribution of the Respondents by Age .....	86
4.3.4 Distribution of the Respondents by Level of Education .....	86
4.3.5 Distribution of the Respondents by Level of Experience .....	87
4.3.6 Tests for Normality .....	88
4.3.7 Tests for Multicollinearity .....	91
4.3.8 Likert-Type Data.....	95
4.3.9 Likert Scale .....	96
4.4 Performance of Community Based Projects .....	97
4.4.1 Projects Completion within Budget .....	97
4.4.2 Project Completion on Schedule.....	99
4.4.3 Project Continuity after Donor Funding .....	101
4.4.4 Overall Descriptive Analysis on Performance of Community Based Projects.....	103
4.6 Logical Framework and Performance of Community Based Projects.....	106
4.6.1 Output and Performance of Community Based Projects .....	106
4.6.2 The Influence of Project Activities on Performance of Community Based Projects.....	109
4.6.3 The Influence of Project Objectives on Performance of Community Based Projects .....	111
4.6.4 Overall Descriptive Analysis on Logical Framework.....	113
4.6.5 Correlation Analysis .....	115
4.6.6 Regression Analysis and Hypothesis Testing.....	116
4.7.1 Project Outcomes and Performance of Community Based Projects.....	121
4.7.2 Stakeholder Inclusion and Performance of Community Based Projects .....	123

4.7.3 Stakeholder Capability and Performance of Community Based Projects.....	125
4.7.4 Overall Descriptive Analysis on Stakeholder Analysis .....	127
4.7.5 Correlation Analysis .....	130
4.7.6 Regression Analysis and Hypothesis Testing .....	130
4.8.2 Project Root Causes and Performance of Community Based Projects .....	138
4.8.3 The Project Effect and Performance of Community Based Projects .....	140
4.8.4 Overall Descriptive Analysis on Problem Tree Analysis .....	141
4.8.5 Correlation Analysis .....	144
4.8.6 Regression Analysis and Hypothesis Testing .....	103
4.9 Gantt Chart and Performance of Community Based Projects.....	149
4.9.1 Project Resources and Performance of Community Based Projects.....	150
4.9.2 Work Accomplished on Performance of Community Based Projects .....	152
4.9.3 Time Taken and Performance of Community Based Projects .....	154
4.9.4 Overall Descriptive Analysis on Gantt Chart .....	156
4.9.5 Correlation Analysis .....	159
4.9.6 Regression Analysis and Hypothesis Testing .....	159
4.10 Combined Project Design Tools and Performance of Community Based Projects.....	163
4.10.1 Correlational Analysis of Project Design Tools and Performance of Community Based Projects .....	163
4.10.2 Inferential Analysis of Project Design Tools on Performance of Community Based Projects. ....	165
4.10.3 Regression Analysis and Hypothesis Testing .....	165
4.11 Project Manager`s Competencies and the Relationship Between Project Design Tools and Performance of Community Based Projects .....	169
4.11.1 Resource Mobilization and Performance of Community Based Projects.....	169
4.11.2 Team Management and Performance of Community Based Projects .....	172
4.11.3 Technical Competencies to Activities and Performance of Community Based Projects ..	174
4.11.4 Overall Descriptive Analysis on Manager`s Competencies .....	176
4.11.5 Correlational Analysis.....	178
4.11.6 Regression Analysis and Hypothesis Testing .....	179



<b>CHAPTER FIVE.....: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS.....</b>	189
5.1 Introduction.....	189
5.2 Summary of Findings.....	189
5.2.1 The Influence of Logical Framework on Performance of Community Based Projects.....	189
5.2.2 The Influence of Stakeholder Analysis on Performance of Community Based Projects ....	190
5.2.3 The Influence of Problem Tree Analysis on Performance of Community Based Projects..	191
5.2.4 The Influence of Gantt Chart and Equipment on Performance of Community Based Projects .....	191
5.2.5 The Influence of Combined Project Design Tools on Performance of Community Based Projects.....	192
5.2.6 The Influence of Project Managers’ Comptencies on the Relationship Between Project Design Tools and Performance of Community Based Projects.....	192
5.3 Conclusions.....	193
5.4 Contribution of the Study to the Body of Knowledge .....	195
5.5 Recommendations for Policy and Practice .....	197
5.5.1 Recommendations for Policy .....	197
5.5.2 Recommendations for Practice .....	189
5.6 Suggestions for Further Research .....	198
<b>REFERENCES.....</b>	200
<b>APPENDICES .....</b>	211
Appendix I: Letter to the Respondents .....	211
Appendix II: Questionnaire for Other Project Employees.....	212
Appendix III: Interview Guide For Project Managers .....	224
Appendix IV : Research Permit .....	226
Appendix V: Research Authorization Letter .....	227
Appendix VI: Research Authorization Letter from the Mininstry.....	228
Appendix VII: Authorazation Letter.....	229
Appendix VIII: Letter from the Ministry.....	230
Appendix V: Sketch Map For Bungoma County.....	231

## LIST OF TABLES

Table 3.1 Target Population.....	68
Table 3.2: Sample Size Determination .....	69
Table 3.3 Summary of the Reliability Tests .....	73
Table 3.4: Hypothesis Testing .....	65
Table 3.5 Operationalisation of the Research Variables.....	81
Table 4.1 Sector of the Staff Respondents.....	84
Table 4.2.: Sector of the Project Manager Respondents.....	85
Table 4.3: Gender of the Respondent .....	85
Table 4.4: Age of the Respondent.....	86
Table 4.5 : Highest level of education .....	87
Table 4.6:Level of Work Experience.....	88
Table 4.7: Results of Kolmogorov-Smirnov and Shapiro-Wilk Tests.....	90
Table 4.8: Correlations of Variables .....	94
Table 4.9: Collinearity Statistics.....	95
Table 4.10: Completion within Budget.....	97
Table 4.11: Project Completion on Schedule .....	99
Table 4.12: Project Continuity after Donor Funding .....	102
Table 4.13: Means and Standard Deviations for Performance of CBP .....	104
Table 4.14: Output and Performance of Community Based Projects.....	107
Table 4.15: Project Activities and Performance of Community Based Projects .....	109
Table 4.16: Project Objectives Influence on Performance of Community Based Projects ..	111
Table 4.17: Means and Standard Deviations for Logical Framework .....	113
Table 4.18: Correlation Matrix for Logical Framework and Performance of Community Based Projects .....	116
Table 4.19: Model Summary for Application of Logical Framework.....	117
Table 4.20: Analysis of Variance (ANOVA) for Application of Logical Framework.....	118
Table 4.21: Regression Coefficients: Logical Framework .....	118
Table 4.22: Project Outcomes and Performance of Community Based Projects .....	121

Table 4.23: Stakeholder Inclusion Influence on Performance of Community Based Projects .....	123
Table 4.24: Stakeholder Capability Influence on Performance of Community Based Projects .....	125
Table 4.25: Means and Standard Deviations for Stakeholder Analysis.....	127
Table 4.26: Stakeholder Analysis Correlation Results .....	130
Table 4.27: Model Summary for Application of Stakeholder Analysis .....	131
Table 4.28: Analysis of Variance (ANOVA) for Application of Stakeholder Analysis .....	133
Table 4.29: Regression Coefficients: Stakeholder Analysis.....	133
Table 4.30: Influence of Project Identified Problems and Performance of Community Based Projects.....	135
Table 4.31: Project Root Causes and Performance of Community Based Projects.....	138
Table 4.32: Project Effect and Performance of Community Based Projects .....	140
Table 4.33: Means and Standard Deviations for Problem Tree Analysis.....	142
Table 4.34: Correlation Matrix for Problem Tree Analysis and Performance of Community Based Projects .....	145
Table 4.35: Model Summary for Application of Problem Tree Analysis.....	146
Table 4.36: Analysis of Variance (ANOVA) for Problem Tree Analysis .....	147
Table 4.37: Regression Coefficients: Problem Tree Analysis .....	148
Table 4.38: Project Resources and Performance of Community Based Projects .....	150
Table 4.39: Work Accomplished and Performance of Community Based Projects.....	152
Table 4.40: Time Taken and Performance of Community Based Projects.....	154
Table 4.41: Means and Standard Deviations for Gantt Chart.....	156
Table 4.42: Gantt Chart Correlation Results.....	159
Table 4.43: Model Summary for Application of Gantt Chart.....	160
Table 4.44: Analysis of Variance (ANOVA) for Gantt Chart .....	161
Table 4.45: Regression Coefficients:Gantt Chart .....	161
Table 4.46: Correlation Matrix for Project Design Tools and Performance of Community Based Projects.....	164
Table 4.47: Model Summary for the Combined Project Design Tools .....	166
Table 4.48: Analysis of Variance (ANOVA) for the Combined Project Design Tools .....	167

Table 4.49: Regression Coefficients: Combined Project Design Tools on Performance of Community Based Projects .....	168
Table 4.50: Resource Mobilization and Performance of Community Based Projects .....	170
Table 4.51: Team Management and Performance of Community Based Projects .....	172
Table 4.52: Assigning of Technical Competencies and Performance of Community Based Projects .....	174
Table 4.53: Means and Standard Deviations for Management Competencies .....	176
Table 4.54: Gantt Chart Correlation Results.....	178
Table 4.55: Model Summary for the Combined Project Design Tools without Managers competencies .....	181
Table 4.56: Analysis of Variance (ANOVA) for the Combined Project Design Tools .....	183
Table 4.57: Regression Coefficients: Project Design Tools without the moderating variable on Performance of Community Based Projects.... <b>Error! Bookmark not defined.</b>	
Table 4.58: Model Summary: Combined tools with Managers Competencies .....	184
Table 4.59: Analysis of Variance (ANOVA) for the Combined Project Design Tools and Managers Competencies .....	185
Table 4.60: Regression Coefficients: Moderating Influence of Project Managers.....	186
Table 5.1: Contribution to Knowledge .....	195

## LIST OF FIGURES

Figure 1: Conceptual Framework on application of project design tools, managers` competency and performance of community based projects in Bungoma County, Kenya.....	51
---	----

## **ABBREVIATIONS & ACRONYMS**

<b>AIDS</b>	Acquired Immune Deficiency Syndrome
<b>AMOS</b>	Analysis of Moment Structures
<b>CAPM</b>	Capital Asset Pricing Model
<b>CBOs</b>	Community-Based Organizations
<b>CBPs</b>	Community-Based Projects
<b>CDF</b>	Constituency Development Fund
<b>DB</b>	Design Build
<b>DBB</b>	Design-Bid-Build
<b>FGD</b>	Focus Group Discussion
<b>IWRM</b>	Integrated Water Resource Management
<b>LFA</b>	Logical Framework Approach
<b>M&amp;E</b>	Monitoring and Evaluation
<b>NED</b>	New Product Development
<b>NGOs</b>	Non-Governmental Organizations
<b>NORAD</b>	Norwegian Agency for Development Co-operation
<b>PDSs</b>	Project Delivery Systems
<b>PM</b>	Project Management
<b>PMI</b>	Project Management Institute
<b>PMBOK</b>	Project Management Body of Knowledge
<b>SEM</b>	Structural Equation Modeling
<b>USAID</b>	United States Agency for International Development
<b>WBS</b>	Work Breakdown Structure

## ABSTRACT

Project design is an early phase of a project where its key features, structure, criteria for success, and major deliverables are all planned out. The objective of the study was to investigate the influence of selected project design tools on performance of community based projects. The project design tools under consideration were the application of logical framework, application of stakeholder analysis, application of problem tree analysis, application of gantt chart and the moderating effect of managers competencies. The theoretical orientation used in this study entailed: systems theory, stakeholder theory and resource-based view of the firm theory. The study employed the descriptive research design targeting 15 community based projects with 192 project employees excluding project managers. The sample size was 128 respondents obtained through stratified random sampling procedure from different community based organizations. An interview was carried out on 15 project managers who were purposefully sampled. Primary data was obtained through administration of a questionnaire and an interview guide. Qualitative data was analysed through checking data, developing codes, identifying themes and patterns and then summarizing the data and linking them to the hypothesis and objectives. Descriptive results were presented as frequency Tables, percentages, arithmetic means and standard deviation while inferential statistics were obtained using Pearson's Product Moment correlation ( $r$ ) and from both simple regression and multiple regression analysis. F-test was used to test the hypotheses. Tests of statistical assumptions were carried out before analysis. For objective one, the coefficient of determination  $R^2=0.015$ ,  $F(0.494)$  with  $p=0.688>0.05$ ; therefore, the null hypothesis  $H_0$  failed to be rejected and it was concluded that logical framework has no statistically significant influence on the performance of community based projects. For objective two,  $R^2=0.332$ ,  $F(4.095)$  at  $p=0.004<0.05$ ; therefore,  $H_0$  was rejected and it was concluded that application of stakeholder analysis has a statistically significant influence on the performance of community based projects. For objective three,  $R^2=0.214$ ;  $F(8.971)$  at  $p=0.000<0.05$ ; therefore,  $H_0$  was rejected and it was concluded that the application of project tree analysis has statistically significant influence on the performance of community based projects. For objective four,  $R^2=0.112$ ,  $F(4.177)$  at  $p=0.03<0.05$ ; therefore,  $H_0$  was rejected and it was concluded that application of Gantt chart has a statistically significant influence on the performance of community based projects. For objective five,  $R^2=0.208$ ,  $F(7.822)$  at  $p<0.001<0.05$ ; therefore,  $H_0$  was rejected and concluded that combined project design tools has a statistically significant influence on the performance of community based projects. For objective six;  $R^2=0.358$   $\Delta R^2=0.150$ ,  $F(8.832)$  at  $p=0.000<0.05$ ; therefore,  $H_0$  was rejected and it was concluded that the strength of the relationship between project design tools and performance of community based projects depends on a manager's competencies. In conclusion, the study findings provide evidence that for increased performance of community based projects in Bungoma County, aspects of project design tools should be comprehensively addressed. It is therefore recommended that organizations operating community based projects need to work on inclusion systems so as to enhance their relationship with the community and performance.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

Globally, development of overall performance has emerge as ever more essential to the success of projects and has been the concern of a considerable amount of studies and interest during the last decades. Smyth (2010) mentioned that there has been a number projects throughout many nations over the past 10 to fifteen years to introduce reform to the project process and more particularly, on the tools used at project design phase with a purpose to enhance overall performance. regardless of the reality that globally there are a number of projects that have been carried out properly, there's but a issue related to the common and prolonged delays which have triggered under-fulfillment in project overall performance which relate to project layout (Al- Kharashi & Skitmore, 2009). In a big and complex project, design frequently entails more than one individuals or groups participating in a design process, sharing design data, negotiating and making decisions, coordinating and handling design obligations and activities (sad, 2008). consequently, the effectiveness of collaborative design procedure will become vital for design project management. at the same time, the way to enhance the effectiveness of a collaborative project design is a tough issue within the discipline of collaborative design with the intention to enhance performance (Kalsaas, 2012).

reports at the need to enhance project designs by Kerzner (2009) and Brandon (2010) highlighted the need to enhance the design and project procedure. They recommended that these enhancements might be carried out with the aid of lowering the number of variations and resistance to undertake a shared learning programme. They centered at the problems of product improvement and project implementation which may be achieved thru the adaption of a common product on a particular site. As such, innovation and shared learning may be accomplished and permit sustained improvement. Many frameworks have been advanced within the period in-between and have coexisted with unique strategies which has ended in a predicament of preference, among number and variant of available frameworks. those frameworks were advanced for precise projects that were no longer designed as repetitive projects, in particular amongst developed countries (Muthomi, 2015).



Project management in general and particularly, application of project design tools is playing an important role in changing business landscapes (Al- Kharashi & Skitmore, 2009). The purpose of application of project management tools such as project design tools is to bring about structure in the execution of a project. A project is used to create a unique service, product or result. The project has its own objectives, measurable criteria and a defined cost and time. Due to the limited time frame for a project, the scope and resources available are also limited. The time required to complete a project also becomes important. The more time the project takes to complete, the more complex it becomes, raising the risk of failure (Ammeter, 2012). There is a vast increase in the application of project design tools in organizations in Africa (White & Walker, 2012). The importance of project design tools as one of the main activities in projects was identified much before the 2000s as vital to improvement on project performance (Muthomi, 2015).

powerful use of project design tools is taken into consideration one of the key components of project overall performance amongst organization each in evolved and developing countries (Burke, 2013). project management is a tough assignment with many complicated obligations and the applicable project design tools and strategies. thankfully, there are numerous tools available to help with conducting the tasks and executing the obligations. a few require a computer with assisting software program, whilst others can be used manually. project managers ought to select a project management tool that satisfactory fits their management style. no one tool addresses all project management needs (Silverman, 2008).

Governments, Non-Governmental organizations (NGOs) and personal businesses within the developing world particularly, are more and more engaged in donor-funded projects. they're frequently requested to formulate project proposals which can be economically, socially, politically and environmentally feasible. to address those regularly complicated and stressful processes, project managers need to own the present day understanding on diverse project design tools. project design tools have advanced lately (Burke, 2013). The inconsistencies among design and project specifics that have a substantial effect on project performance in Saudi Arabi, have been identified by (Abegunde, 2014). the european commission (2004) as an instance, added a new method to the log frame matrix and the world bank is promoting a brand new method for the financing of development interventions.

In Kenya, and more particularly Bungoma County, community primarily based projects are set up with the aid of collective efforts of indigenous people of homogenous or heterogeneous attributes however residing or working in the same environment. Their coming together creates situations which expand the base of self-governance and diffusion of power thru a much broader circle of the populace (Adeyemo, 2012). It is seen as voluntary, non-profit, non-governmental and exceptionally localized or neighbourhood establishments whose membership is positioned on equal level and whose predominant purpose is the development of the social and financial wellness of each member (Abegunde, 2014). These are processes wherein efforts of the people are united with those of government authorities and development aid organizations. They accomplish that to enhance the financial, social and cultural situations of communities. They combine them into the lifestyles of the nations and to allow their members to make contributions absolutely to countrywide development (United Nations, 2008). The Oxford university Press (2000) argues that community improvement affords avenue for people to prepare themselves for planning action; outline their common and character needs and problems; make group and individual plans to fulfill their desires and remedy their issues; execute these plans with a maximum reliance upon community assets; and, complement these resources whilst necessary with services and materials from authorities and non-governmental corporations outside their communities. This study focused on the influence of project design tools, managers` competencies and performance of community based projects in Bungoma County, Kenya.

Smyth (2010) view project design as an early section of the task wherein the project's key functions, structure, criteria for achievement, and fundamental deliverables are all planned out. The point is to expand one or more designs which may be used to attain the preferred project goals. As such, a clear know-how of the state and evolution of expert practice is in particular vital to its future development. One vital factor of project management practice is using project design tools and strategies that are particular to the sector. A rich array of project design tools and strategies has emerged from practice (Brooks, 2013). The project management Institute's 'A guide to the project management body of knowledge' (PMBOK guide), has recognized and defined commonly standard project management practice when it comes to project design. typically commonplace method that the knowledge and practices defined are relevant to most

projects, most of the time, and there's good sized consensus about their value and usefulness (project management Institute, 2000).

The PMBOK manual additionally affords an inventory of commonly valued tools and strategies, which serves as an vital place to begin for expertise the project design. project management is stated to be in large part common (Chikati, 2009), that is to say, relevant to many industries with little variation. but project designs are acknowledged to vary notably from one form of project to the subsequent. companies and project managers ought to pick out the tools and strategies with a view to be a part of their toolbox. This set of tools ought to be aligned with project traits and organizational contexts. The PMBOK manual classifies the tools and strategies by project phase in order to underline the use all through the project lifestyles cycle. the primary stages of a project are Initiation, planning, Execution, monitoring and assessment and Closure. This study centered on project design that's an early phase of the project and the application of the tools used therein to enhance overall performance of community based projects.

### **1.1.1 Performance of Community Based Projects**

Performance of a project is considered as a source of concern to both public and private sector clients. Thomas (2010) defined performance measurement as monitoring and controlling of projects on a regular basis. He observed that project performance measurement include time, budget, safety, quality and overall client satisfaction aided by project design tools. Bennett (2015) stated that a project performance measurement is related to many indicators such as time, budget, quality, specifications and stakeholders' satisfaction. They further stated that project performance measurement means an improvement of cost, schedule, and quality for design and construction stages.

Improving project performance in the community poses several challenges for stakeholders. Additionally, it is not an easy task to sustain radical improvement in a diverse environment. It requires the identification and implementation of suiTable improvement programmes subjected to the community business cycle (Wellman, 2011). This is important since the integration of improvement programmes in a community may lead to high cost and yet the benefit can only be realized in the long term. However, there is a need for new improvement

programmes and initiatives at various stages of a project life-cycle in order to enhance community project performance and target changing trends of private and public sector project organizations (Thake, 2012). Project performance can be affected by a range of things; one of these being the organizational structure of the business (Paul, 2010). As mentioned, it has been observed that the most successful way of exploiting a strategic opportunity or implementing a change in a company is through a temporary process or structure for example, a project team focused on the project task and objectives in order to solve a problem or implement a new strategy (Chizimba, 2013).

Performance of CBPs in Kenya remains wanting largely due to limitations such as finance, constraints of the environment and lack of management and technical expertise (Odindo, 2009). Moreover, constant pressures of fundraising, weak management skills and difficulties in scaling-up operations can limit CSPs' effectiveness and accountability. Silverman (2008) indicated that aspects such as local networks of CBPs, leadership, client characteristics, staff and strategy can have an influence on the success of their programmes. The development and exploitation of managers' social networking relationships with external entities affects performance of those organizations. Such social networks create social capital for organizations by establishing avenues for the exchange of valuable information, resources, and knowledge (Thake, 2012).

### **1.1.2 Application of Project Design Tools**

According to Kerzner (2015), in order to measure the success of projects one can create criteria and metrics which are reminiscent of the project successes in terms of the project outcomes by meeting quality standards; achieving success in the process by meeting the goals of time and budget by use of effective project design tools. For this, the author uses four metrics to evaluate the performance of projects: cost, time, quality and service customer satisfaction. Larson and Gobeli (2009) present some factors that may affect the success of projects such as project design tools, project structure, project manager's competence and size of the project, using the same indicators proposed by Ling (2004). Another way to measure success is folding it in two different criteria. According to Cooke-Davies (2002), no system of metrics in projects can be considered complete without a package of measures (performance and success) and one should

seek a method of connecting them, as a means of assessing the accuracy with which the performance of projects predict the success of the organization.

The failure of any community based project in Kenya, and more particularly in Bungoma County, is especially associated with the issues and failure in project design and tools and strategies applied (Mathenge, 2014). Furthermore, there are numerous motives and elements which purpose this kind of problem. In the US, Ling (2004) remarked that performance problems arise in massive construction projects because of many motives which include: incompetent designers/contractors, poor estimation and change management, social and technological problems, site-associated problems, and flawed strategies and tools. Navon (2005) said that the primary community based project performance trouble may be divided into groups: unrealistic goal setting, for instance planning; or causes originating from the real construction. In lots of instances, the causes for deviation originate from both sources.

The logical framework approach (LFA) was described by its developers as a set of interlocking concepts which must be used together in a dynamic fashion to permit the elaboration of a well-designed, objectively described and evaluable project (Nyandemo, 2010). It should be noted that the LFA is not an integrated set of procedures; nor is it a set of guidelines for the evaluation of a project. On the other hand, by creating a sense of community ownership, participation leads to effectiveness and better decisions in projects (Newcombe, 2003). In order to ensure sustainability in projects it is important to cultivate local ownership which is achieved through participation. Participation leads to learning, which is a requirement for behavioural changes and practices (Kelly, 2015).

A problem tree ought to preferably be undertaken as a participatory group event using visible strategies, inclusive of flipcharts wherein identified stakeholders can write their individual problem statements. A well deliberate project addresses the actual wishes of the beneficiaries and is consequently primarily based upon a correct and whole evaluation of the prevailing state of affairs (Kumar, 2002). The prevailing scenario ought to be interpreted in line with the perspectives, needs, interests and activities of parties involved. It is critical that all those concerned contributors accept the plans and are dedicated to enforcing them. If different functional areas are involved in a project, every area may additionally need its personal detailed schedules to support the project master timetable (Keerti, 2013). In such instances it is vital

that working schedules be connected to a common master schedule in such a way that they can be effortlessly updated. Every activity or event on the schedule ought to have accountable person assigned, in order that there's clear ownership and schedule status can be updated without a lot of fuss (Tufte, 2013).

#### **1.1.2.1 Logical Framework**

The logical frame in project management is defined by Grove (2008) as a methodology for planning, managing and evaluating programmes and projects, using tools to enhance participation and transparency and to improve orientation towards objectives. This approach follows a hierarchical results oriented planning structure and methodology which focuses all project planning elements on the achievement of one project purpose. According to Milika (2011) drawing up a logical framework approach (LFA) has two main stages, analysis and planning, which are carried out progressively during the identification and design phases of the project cycle. Using LFA, the existing situation is analysed to develop a vision for the desired future situation, and to choose the strategies to apply so as to reach it. The key idea is that projects/programmes are aimed at problems faced by the target group, whether of women or men, and their needs and interests (Mkutu, 2011).

#### **1.1.2.2 Stakeholder Analysis**

Any individuals, groups of people, institutions or firms that may have a significant interest in the success or failure of a project (either as implementers, facilitators, beneficiaries or adversaries) are defined as stakeholders (Kumar, 2002). Kelly (2015) argues that a basic premise behind stakeholder analysis is that different groups have different concerns, capacities and interests, and that these need to be explicitly understood and recognized in the process of problem identification, objective setting and strategy selection. Every society sees differences in the roles and responsibilities of women and men, in their access and control of resources and in their participation in decision making processes (McCabe, 2016). Whenever services are provided, for example transportation, health, education, and other economic, social and political opportunities, there is no equal access to them by women and men. Inequalities due to gender can be an obstacle to growth and can damage development. Avoid facing the gender problem adequately can jeopardize the efficacy and sustainability of projects/programmes, and increase exacerbate existing inequalities (McKay, 2016). It is thus vital to analyse gender

differences and inequalities and include them in the proposed activities, objectives and strategies, as well as in the allocation of resources (Loosemore, 2012).

Stakeholder analysis must systematically identify all the gender differences as well as special interests, problems and the potential of both women and men among the stakeholders (Mathenge, 2014). Ideally the project/programme should be defined in a workshop for participative planning which involves representatives of the principal stakeholders, ensuring balanced representation of the interests of both women and men (Dongier et al., 2003). Each time the logical framework is reconsidered during the life of the project, it is necessary to go back to the original stakeholder analysis (Dongier et al., 2003).

### **1.1.2.3 Problem Tree Analysis**

Problem tree analysis identifies the negative aspects of an existing situation and establishes the cause and effect' relationships between the identified problems (Pinto, 2018). It involves three main steps: definition of the framework and subject analysis; identification of the major problems faced by target groups and beneficiaries; and visualization of the problems in form of a diagram, called a problem tree or hierarchy of problems to help analyse and clarify cause-effect relationships (Burke, 2013). Long (2004) stated that a clear problem analysis thus provides a sound foundation on which to develop a set of relevant and focused project objectives. Once complete, the problem tree represents a summary picture of the existing negative situation. In many respects the problem analysis is the most critical stage of project planning, it guides all subsequent analysis and decision-making on priorities (Magano, 2008).

Like any other tree, the problem tree has three parts: a trunk, roots; and branches. The trunk is the core problem. The roots represent the causes of the core problem and the branches represent its effects. Like the roots of a tree, the causes of the core problem are not always immediately apparent, but if one does not understand the causes, there is little one can do to address the problem (McConville, 2007). Mwaura (2014) argues that understanding the core problem and its causes is important if the project is to effectively address the effects of that problem on the community. The problem tree is one method of mapping out core problems, along with their causes and effects, helping project planners to identify clear and manageable objectives (Nyonganyi, 2013).

### **1.1.2.4 Gantt Charts**

A Gantt chart is a sight view of tasks scheduled over time (Navon, 2005). Gantt charts are used for making plans projects of all sizes and they're a beneficial manner of displaying what work is scheduled to be accomplished on a selected day with the intention to enhance project performance. They define all the duties involved in a project, and their order, shown against a timescale. This offers an instantaneous assessment of a project, its related tasks, and whilst these need to be completed (Booker, 2007). Wilson (2003) argues that Gantt charts do not provide beneficial data until they encompass all the activities needed for a task or project design segment to be completed. The chart displays the relationship among the duties in a project. Some tasks will need to be finished before you'll be able to begin the subsequent ones, and others can't stop until preceding ones have ended (Campbell, 2006).

Gantt charts are beneficial for planning and scheduling initiatives. They help examine how long a project ought to take, decide the assets needed, and plan the order wherein one will complete tasks (Chandes, 2010). They are additionally useful for dealing with the dependencies among tasks. They are useful for monitoring a project's progress as soon as it is underway, too. You will straight away see what ought to have been accomplished by a certain date and, if the task is delayed, one could take action to deliver it again on course (Mkutu, 2011).

### **1.1.3 Manager`s Competencies**

The aggregate of a converting organizational surroundings and changing project traits make the position of the project leader tough. inside this surroundings, a capable project manager is often regarded as having a substantial effect on overall project achievement (Ammeter & Dukerich, 2002) in addition to being important to other project factors, including the success of the project crew, consisting of team participants' motivation and creativity (Taborda, 2010). This sturdy link with success guarantees that project manager competencies are of particular interest,

The successful project supervisor according to Rickards, Chen and Moger, (2001) ought to have the subsequent competencies and abilities: flexibility and adapTableness, preference for significant initiative and management, aggressiveness, self-belief, persuasiveness, verbal fluency, ambition, activity, forcefulness, effectiveness as a communicator and integrator, broad scope of personal interests, poise, enthusiasm, creativeness, spontaneity, capable of balance



technical solutions with time, cost, human elements, properly prepared and disciplined, a generalist as opposed to a consultant, capable and inclined to commit most of his or her time to planning and controlling, capable of pick out problems, inclined to make decisions, able to maintain a right balance in use of time.

#### **1.1.4 Situation Analysis of Bungoma**

In order to measure the success of projects one can create criteria and metrics as proposed by Ling (2004), which is a division refining the project success in achieving success in the product of the project by meeting quality standards and meeting the goals of time and budget by use of effective project design tools. To ensure the success of projects, the project manager must have the requisite knowledge of project management, which is defined as the planning, organization, monitoring and control of all aspects of a project and the motivation of all involved to achieve project objectives safely and within defined time, cost and performance (Chikati, 2009). This is in addition to having in place project design tools to improve on performance (Pinto, 2018). It is also the application of knowledge, skills, tools, and techniques to project activities to meet project requirements (PMI, 2008).

As stated by Agumena (2013) managers can develop a company's competencies on three levels in order to achieve competitive advantages. The first is on an individual level by developing the competencies of an individual manager; on an organizational level by linking individual competencies to organizational competence clusters; and; on an inter-organizational level by linking individual parts of the company and promoting and supporting cooperation among companies (Austin, 2004). Project management is a complex process targeting multiple outcomes. Project management competence is just as complex, requiring the acquisition of a variety of knowledge and skill sets that often cross areas of expertise, including instructional technology, management, information technology, engineering and manufacturing (Kerzner, 2009; Tinnirello, 2000).

On why working capital is important to project success, Nyandemo (2010) argued that efficient management of working capital is pivotal to the health and performance of firms and projects; hence the view that firms should employ the use of efficient practices of fund management as a strategy of improving their value. Performance of the project is considered as a source of concern to both public and private sector clients. Kumaraswamy (2012) remarked that project

performance measurement includes time, budget, safety, quality and overall client satisfaction. The poor performance of many projects is difficult to understand because of the multidimensional factors in form of human, technical, organizational, and environmental used in project management (Kumar, 2002). In order to alleviate this problem and find some practical solutions, organizations need to improve their project management maturity, or in other words, organizations need to understand and improve their capabilities to manage projects effectively (Magano, 2008).

Bungoma County is located in Western Kenya and runs along the Kenya-Uganda border with a population of 1,375,063 and an area of 2,069 km<sup>2</sup> ([www.bungoma.go.ke](http://www.bungoma.go.ke)). It borders Busia County, Kakamega County and Trans Nzoia County. The climate favours agriculture as temperature ranges between a minimum of 15 degrees and an upper maximum of 30 degrees centigrade with an average rainfall of 1500 mm. Its capital is Bungoma Town. The economy of Bungoma County is mainly agricultural, centering on the sugarcane and maize industries. The area experiences high rainfall throughout the year, and is home to several large rivers, which are used for small-scale irrigation. This large population of approximately 1.4 million, coupled with rural unemployment has started to put pressure on land and other natural resources. There are a number of community based organizations currently working in Bungoma in various sectors ([www.bungoma.go.ke](http://www.bungoma.go.ke)). Taking these facts into consideration, the current study sought to establish the influence of application of project design tools, managers' competencies and performance of community based projects in Bungoma County Kenya.

## **1.2 Statement of the Problem**

There has been a range of initiatives across many countries over the last 10 to 15 years to introduce reform to the project design process in order to improve the performance of community based projects (Al-Kharashi, 2009). The community based projects are of particular interest due to the current rapid growth of the Kenyan economy, and the significant number of large projects being implemented in both the public and the private sectors (Mathenge, 2014). Although there are considerable project designs underway, there is a concern associated with the frequent and lengthy delays that have caused underachievement in project performance among projects being undertaken in Bungoma County (Mkutu, 2011).

Effective use of project design tools is considered one of the key aspects of project performance. Project management is a challenging task with many complex responsibilities and the relevant project design tools and techniques. Despite the fact that there are many tools available to assist with accomplishing the tasks and executing the responsibilities, project managers face a problem of choosing the best project design tool that suits their management style and addresses all project management needs (Silverman, 2008). In third world countries in Africa like Kenya, national and regional governments, local and international NGOs and other concerned organizations invest large sums of money every year on various projects. Even with the continuous efforts to ensure community based projects guarantee performance and success, failure to have in place effective project designs and other avoidable factors from initial stages to performance completion is still too low. The improvement of performance of community based projects has become ever more critical to the success of projects and has been the subject of a considerable amount of research and attention over the past two decades.

Research has shown that CBPs full potential has yet to be tapped due to the existence of a number of constraints such as lack of planning, improper financing and poor management (Mkutu, 2011). Poor or a lack of project design has also been identified as one of the most serious constraints facing CBP and hindering their profitability (Odindo, 2009). According to Bungoma County Integrated Development Plan (2016), there are about 96 registered CBPs in the region being carried out in different areas. The Bungoma County plan indicates that they expect the CBPs to contribute more than 3% to the development of the county by providing the services in various interest areas. Despite this, their contribution is still below the expected rates which, therefore, led to the current study on the influence of application of project design tools on performance of community based projects in Bungoma County.

Additionally, it is not an easy task to sustain radical improvement in a diverse environment such as in the project industry. This requires the identification and implementation of suitable improvement programmes subjected to the project business cycle. This is important since the integration of improvement framework design in community based projects may incur high cost and yet the benefit can only be realized in the long term (Chikati, 2009). However, there is a need for new improvement framework design and initiatives at various stages of a project life-cycle in order to enhance project performance and target changing trends of private and public sector project organizations (Smyth, 2010).

Other notable studies have been carried on this topic for example Milika (2011) carried out a study on the importance of logical framework to project performance in Kenya. This study only dealt with the importance of logical framework to project performance. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects. Blood (2013) did a study on the imminent problems inducing ineffective stakeholders` engagement in mining projects, the study only dealt with the imminent problems inducing ineffective stakeholders` engagement in mining projects. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects. A study by McCawley (2014) on why conducting a problem tree is an important aspect for project managers only dealt with conducting a problem tree and why it is an important aspect for project managers. It did not address the interaction of project design tools and project manager's competency levels with performance of community based projects.

Stare (2012) on the other hand carried out a study to establish the impact of the organizational structure and project organizational culture on project performance in Ugandan enterprises, the study only dealt with establishing the impact of the organizational structure and project organizational culture on project performance. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects. With this in mind the current study sought to establish the influence of application of project design tools, managers` competencies and performance of community based projects in Bungoma County Kenya, since these studies did not give any conclusive evidence to show the link between application of project design tools, manager's competencies and performance of community based projects.

### **1.3 Purpose of the Study**

The purpose of this study was to establish the influence of application of project design tools on performance of community based projects in Bungoma County, Kenya. It also sought to establish the moderating influence of project managers` competency on the relationship between application of project design tools and performance of community based projects in Bungoma County.

#### **1.4 Objectives of the Study**

The study was guided by the following objectives:

- i. To establish how application of logical framework influences performance of community based projects in Bungoma County;
- ii. To assess the extent to which application of stakeholder analysis influences performance of community based projects in Bungoma County;
- iii. To examine how application of problem tree analysis influences performance of community based projects in Bungoma County;
- iv. To establish the extent to which application of Gantt charts influence performance of community based projects in Bungoma County;
- v. To examine extent to which combined application of project design tools influence performance of community based projects in Bungoma County;
- vi. To establish the extent to which the project managers` competencies influence the relationship between application of project design tools and performance of community based projects in Bungoma County.

#### **1.5 Research Questions**

The research questions guiding this study were:

- i. How does application of logical framework influence performance of community based projects in Bungoma County?
- ii. To what extent does application of stakeholder analysis influence performance of community based projects in Bungoma County?
- iii. To what extent does application of problem tree analysis influence performance of community based projects in Bungoma County?
- iv. To what extent does application of Gantt chart influence performance of community based projects in Bungoma County?
- v. To what extent does combined application of project design tools influence performance of community based projects in Bungoma County?

- vi. To what extent does the project manager`s competencies influence the relationship between application of project design tools and performance of community based projects in Bungoma County?

## **1.6 Research Hypotheses**

The research hypotheses guiding this study included the following:

- i. H<sub>1</sub> : Application of Logical framework has a significant influence on performance of community based projects in Bungoma County
- ii. H<sub>1</sub>: Application of stakeholder analysis has a significant influence on performance community based projects in Bungoma County.
- iii. H<sub>1</sub>: Application of problem tree analysis has a significant influence on performance community based projects in Bungoma County.
- iv. H<sub>1</sub>: Application of Gantt chart has a significant influence on performance community based projects in Bungoma County.
- v. H<sub>1</sub>: Combined application of project design tools has a significant influence on performance of community based projects in Bungoma County
- vi. H<sub>1</sub>: Project managers` competencies have significant influence on the relationship between application of project design tools and performance of community based projects in Bungoma County.

## **1.7 Significance of the Study**

Application of logical framework is of great importance to organizations seeking congruence with the organizations` strategic plans of the various projects. The application of logical framework would enable firms especially those running projects to frequently try out new ideas and seek out new ways of doing things based on technical advancements and on the logical framework matrix.

These study findings highlight the benefits of the application of stakeholder to the performance of community based projects. Since community stakeholders are important in the success of community based projects, the application of stakeholder analysis will enable the selection of team members from the community to enable in the management of the projects.

The application of problem tree analysis enables managers to ensure that there is a proper definition of the project framework. The findings inform those in charge to involve the relevant stakeholders in developing the problem analysis tree. This is because participation ensures efficiency as people form a pool of resources to meet common goals. The findings in relation to problem tree analysis is critical in running of projects since it is not only a critical performance determinant but effectiveness is also increased by giving stakeholders a right in planning for and designing the project.

The study findings help those in charge since the application of Gantt chart helps them to carefully plan the projects and influential in ensuring project success through effective resource management. The study findings on the application of Gantt chart illustrate the relationship between work activities having duration, events without duration that indicate a significant completion, and milestones that represent major achievements or decision points thus facilitating decision making.

### **1.8 Assumption of the Study**

This study assumed that the projects targeted in this study continued beyond the current study period. Another assumption for the study was that the respondents targeted in this study would answer the research questions truthfully. On the other hand the study assumed that the sample selected for this study was representative of the population that the study wishes to make inferences to. It was further assumed that respondents were honest and accurate in providing information upon which the study findings were based.

### **1.9 Limitations of the Study**

In the course of carrying out this study the researcher encountered a number of limitations.

Some of the respondents were reluctant to reveal information on issues deemed controversial such as competence of management in the use of finance. However, the challenge was overcome by assuring them that the study was purely for academic purposes and the guarantee of the confidentiality of the information given. The research period was considerably short, but this was addressed by allocation of more time to fill in the questionnaires.

### **1.10 Delimitation of the Study**

Whereas there were other related problems that could have been chosen, the researcher rejected them and focused on the influence of application of project design tools, managers' competencies and performance of community based projects in Bungoma County, Kenya. In terms of the population the study considered all the community based projects being undertaken in Bungoma County. This, therefore, involved collecting information from the 96 projects based in Bungoma County. The selected methodology and variables in the study set a boundary on what the study findings could ascertain. This area and population were chosen since many community based projects in the county were faced with issues of performance emanating from issues related to project design and implementation. The research adopted the mixed mode approach to conduct a descriptive survey research design thus establishing only associations and not causality.

The study however was restricted to only Bungoma County; hence other community based projects outside the geographic area were not covered. As such, the outcome might not portray a conclusive picture of all community based projects beyond Bungoma County. The researcher, however, sought to uphold integrity and avoid bias that could affect the results of the research.



## 1.11 Definition of key Terms

### **Application of Gantt chart**

In this study Gantt chart is referred to as a bar chart illustrating the project schedule showing what work is scheduled to be done on a specific day. The Gantt chart focused on the community based projects outputs, activities and objectives.

### **Application of Logical Framework**

The logical frame in project management is taken for the purpose of this study to mean a methodology for planning, managing and evaluating programmes and projects, using tools to enhance participation and transparency and to improve orientation towards objectives

### **Application of Problem Tree Analysis**

In this study problem tree analysis is defined as a pictorial representation of a problem, its causes and its consequences in relation to community based projects. This analysis tool helps the project team get a quick glance of how a range of complex issues contribute toward a problem and how this problem branches out into a set of consequences. This is important in planning a community engagement or behaviour change project as it establishes the context in which a project is to occur.

### **Application of Project Design Tools**

In this study project design tools are those tools employed by the funding the community based projects in relation to project planning, scheduling, cost, budgeting as well as management of the projects. In addition, the tools were used for purposes of resource allocation, communication, decision making on project

performance, management of quality and documentation.

**Application of Stakeholder Analysis**

In the current study stakeholder analysis refers to the process of assessing a system and potential changes to it as they relate to relevant and interested parties (stakeholders) covering the community based project outcomes, the inclusivity of stakeholders and the capability of the teams in charge. This information is used to assess how the interests of those stakeholders should be addressed in a project plan, policy, programme, or other action

**Community Based Projects**

For the purpose of this study community based projects refer to those projects that cover a wide variety of different areas within a community including education, agriculture, health, culture and social services, trade and forestry and natural resources. These projects were concern the welfare of the members both in the political and economic aspects.

**Managers` Competencies**

In this study managers` competencies were attributed to observable characteristics and defined as the ability to meet organizational objectives, use available resources efficiently, maintain high levels of employee performance and professionalism, and provide excellent service to customers. Project managers` competencies were considered on the ability of the managers in resource mobilization, how team management was carried out and the technical competence of those that were in charge.

## **1.12 Organization of the Study**

Chapter one entails the background of the study, situation analysis of Bungoma County, statement of the problem, purpose of the study, objectives of the study, research questions and research hypothesis. The chapter covers significance of the study, limitations of the study and delimitation of the study. In addition the chapter focused on the assumption of the study and definition of significant terms used in the study. Chapter two covers literature review on project performance and aspects such as logical framework, problem tree analysis, stakeholder analysis, Gantt chart and project managers` competencies. This chapter also described the theoretical framework of the study. In addition the chapter captures the conceptual framework and summary of research gaps.

The methodology which was used to carry out the study was presented in chapter three. It further describes the research paradigm, research design and the target population. The chapter also describes the sample size and sampling procedure as well as research instruments. In addition, the chapter covers validity and reliability of research instruments, data collection procedure, operationalization of variables, data analysis and ethical considerations. Chapter four covers data analysis, presentation and interpretation of the study results. A summary of findings, conclusion, recommendations and suggestions for further research was presented in chapter five.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter covers the literature on project design tools that influence performance of community based project performance which include; logical framework, stakeholder analysis, problem tree analysis and Gantt chart. It also describes the theoretical orientation and captures the conceptual framework, summary of research gaps and summary of literature review.

#### **2.2 Performance of Community Based Projects**

Project performance is defined as the total quality of a project in terms of whether it has impacted the beneficiaries and whether the interventions are sustainable (Chandes *et al.*, 2010). Project performance is different from industrial or manufacturing sector performance owing to the unique structural nature of the projects. However, like the operations of other sectors, project construction performance can be achieved through evaluation against suitable criteria, monitoring and evaluation or benchmarking against set standards or previous performance of similar projects (Ogunlana, 2013). Key criteria against which the project performance can be evaluated include; whether it is relevant, efficient, effective, whether it has impacted the beneficiaries and whether the interventions are sustainable (Hill, 2015).

Project performance is a behavior that can be evaluated with regard to whether it adds value or makes the organization more effective (Onukwube, Iyabga & Fajana, 2010). Jackson (2013) approaches performance as each person's work achievement after through exerting effort. From the above definitions, project performance touches on how the ability of workers to finish the jobs they are responsible for and how those jobs help in achieving the goals of the organization. Performance measurement as monitoring and controlling of projects by Thomas (2013) was considered a continuous process. Kerzner (2009) stated that project performance measurement means an improvement of cost, schedule, and quality for design and construction stages. Long *et al.* (2014) stated that a project performance measurement is related to many indicators such as time, budget, quality, specifications and stakeholders' satisfaction. They remarked that performance problems arise in large construction projects due to many reasons such as:

incompetent designers/contractors, poor estimation and change management, social and technological issues, site-related issues and improper techniques and tools.

Community-based organizations are increasingly becoming a pillar in facilitating development, especially in third world countries. Mkutu (2011) observes that for projects to perform well, there is need for a close cooperation between the CBP and the community. They ought to work towards the same goal and share the same interests. He also adds that mean performance against budget (4% cost escalation) is generally better than mean performance against schedule (16% late); and when the adequacy of specific project management practices and the maturity of specific project management processes are compared with performance against each of these two criteria, different practices are found to correlate significantly. McKinney (2012) asserts that the internal environment of any organization comprises firm-related factors that influence its capacity to achieve set objectives, develop and implement a viable plan, which consequently contributes to its performance.

A number of research findings have indicated that there are many cases of cost overruns as compared to projects that have been completed within budget. Chimwaso (2001) in his paper sought to evaluate the cost performance of public projects in Botswana and tried to identify factors that influence construction cost overruns in budget. The study was based on a questionnaire survey among professionals of the construction industry. The results, together with empirical data from ten completed projects were presented. Five significant factors, that influence construction cost overruns, were identified and they included incomplete design at time of tender, technical omissions at design stage and contractual claims. These factors were further classified under such categories as variations and contractual claims, according to the format of final account reports. The paper recommended that there is need to identify significant factors that may influence construction cost overruns and deal with them outright from the inception of the project. This will result in significant decrease in the occurrence of cost overruns and improve cost performance of projects. The research findings above from Chimwaso (2005) were the subject of the construction industry. The research only aimed at enumerating factors that lead to cost overruns in the construction project. The study failed to point out whether higher or lower cost overruns depicts the level of performance. The current study addressed this gap by examining the relationship between completion of projects within budget and the performance of community based projects.

A study on the causes and effects of delays in Malaysian construction industry by Sambasivan and Soon (2007) sought to identify the delay factors and their impact (effect) on project completion. Earlier studies either considered the causes or the effects of project delays, separately. This study took an integrated approach and attempted to analyse the impact of specific causes on specific effects. A questionnaire survey was conducted to solicit the causes and effects of delay from clients, consultants and contractors. About 150 respondents participated in the survey. This study identified 10 most important causes of delay from a list of 28 different causes and 6 different effects of delay. Ten most important causes were: contractor's improper planning, contractor's poor site management, inadequate contractor experience, inadequate client's finance and payments for completed work, problems with subcontractors, shortage in material, labour supply, equipment availability and failure, lack of communication between parties, and mistakes during the construction stage. Six main effects of delay were: cost overrun, time overrun, disputes, arbitration, litigation, and total abandonment. This study also established an empirical relationship between each cause and effect. This study had sought to identify the causes and effects of delays in Malaysian construction industry. It failed to link the delays with performance and so the current study focused on the wider perspective of performance of community based projects and related it to variables such as logical framework, stakeholder analysis, problem tree analysis and Gantt chart.

In relation to the causes and effects of delays and disruptions affecting completion of projects within schedule in construction projects in Tanzania, Kikwasi (2012) established that delays and disruptions are among the challenges faced in the course of executing construction projects. Delays as well as disruptions are sources of potential risks such as technical, social, economic, legal, financial, resource, construction and commercial that current studies are looking into ways to manage. The purpose of this research is to assess causes and effects and disruptions in construction projects. This study is descriptive, designed to obtain views from clients, consulting firms, regulatory boards and construction firms in regard to causes and effects of delays in construction projects. Two sampling techniques were used to select respondents namely: purposive and random sampling. Literature review, questionnaires and interviews techniques were used to collect data for the study. Findings reveal that the main causes of delays and disruptions are design changes, delays in payment to contractors,

information delays, funding problems, poor project management, compensation issues and disagreement on the valuation of work done. On the other hand, time overrun, cost overrun, negative social impact, idling resources and disputes are the main effects of delays and disruptions. The study concludes that there still exist a number of causes of delays and disruptions and their effects put construction projects at great risk that has an effect on their performance. The study focused much on the causes of delay and lumped together poor project management as a cause. It failed to single out aspects of project management tools lacking in the projects. This current study undertaken bridged this gap by evaluating the application of particular project design tools and linking them to performance of community based projects.

A study on stakeholders' impact on project outcomes in the Gaza Strip by Ekung *et al* (2013) using a survey of randomly selected samples yielded responses from 66 contractors, 27 consultants and 31 owners. The survey included 110 delay factors/causes which were grouped into 12 major groups. The same survey also included 42 cost overrun factors. The level of importance of the delays and cost overrun factors were measured and ranked by their importance indexes, according to the perspectives of contractors, consultants, and owners. The findings established that there seems to be a general agreement between contractors, consultants and owners regarding causes of delays and cost overruns. The main four causes of time delays included strikes and border closures, material-related factors, lack of materials in markets, and delays in materials delivery to the site. Additionally, the three main causes for cost overruns included price fluctuations of construction materials, contractor delays in material and equipment delivery, and inflation. This study was carried out in Gaza Strip and the purpose of this paper was to assess factors leading to time overruns (delays) and cost overruns in construction projects in the Gaza Strip. This study was conducted on the construction projects. The current study was conducted on all community based projects; thus, the studies could be used for comparative purposes.

A study by Zacharia (2008) on the analysis of community participation in project managed by Non-Governmental Organizations revealed that increased levels of funding are likely to contribute significantly to organizational sustainability of community HIV and AIDS response. Zachariah (2008) argues that the importance of increased financing for HIV and AIDS reaching communities must be highlighted. A cross-sectional research design which employs a survey method was used. A sample of 120 respondents was picked randomly and 17 NGOs were

picked with the aid of Table of random numbers. Purposive sampling was used to select members for an FGD and key informants. Data was collected using questionnaires, interview guide, FGD and key informants. Quantitative data were analysed using a Statistical Package for Social Sciences programme. To determine the effectiveness of NGOs, descriptive and inferential statistics were employed. Structural and content analysis was used to analyse data from FGDs and key informants. In the realm of finite resources to fight the HIV and AIDS epidemic, these resources must be efficiently and practically used for the communities that need them to appreciate their full benefit. Ensuring the optimal and efficient use of HIV and AIDS financing is a shared responsibility between donor agencies and national governments. The study revealed challenges constraining the performance of NGOs which include operating under meagre funds and donor dependence, incompetent staff, inappropriate approaches on HIV/AIDS message delivery, and poor networking. The study sought to establish the level of organizational sustainability beyond funding, while the current study also sought to establish the extent of the project continuity after donor funding as an indicator of performance. The findings of this study have reiterated the importance of capturing sustainability as a key metrics of project performance (Nyandemo, 2010).

Carl (2015) argues that funding, whether domestic or international, directly affects performance of community HIV and AIDS response. Respondents at all levels indicated they would not decline available funding irrespective of whether it fully matches their priorities. In Ghana, a country that has adopted a multi-stage, bottom-up priority setting and health planning approach, several respondents noted that the availability of specific sources of funding influenced which priorities were passed on to the next level of planning. HIV and AIDS funding made up a significant amount of the money available in the national health systems of the five selected countries. International funding constituted the vast majority of funding for HIV and AIDS. The generalization of the results was limited because the survey covered only one area of focus, the health sector. The current study addressed this gap by focusing on all community based projects in all the sectors.

### **2.3 Logical Framework and Performance of Community Based Projects**

Logical framework approach (LFA) is a systematic planning procedure for complete project cycle management including designing. It is a problem-solving approach that takes in views of



all stakeholders. It is a criterion for project success and lists the major assumptions (Grove, 2008). The logical framework approach started in early 1960s in response to planning and monitoring of development projects. The first logical framework developed was for USAID at the end of the 1960s and NORAD made a significant contribution in 1990s (Burke, 2013). LFA has played a central role in the planning and management of development interventions over the last twenty years. Its origins lie in a planning approach for the US military, which was then adapted for the US space agency NASA before being adopted by USAID for development projects over thirty years ago. It was picked up by European development organisations in the 1980s and by the end of the 1990s, LFA or an adapted form of it had become the standard approach required by many donors for grant applications (Jackson, 2013). A logical framework approach is concerned with the wider planning procedures of problem analysis, the development of objectives and indicators, and identification risks and assumptions, which feed into the overall programme plan.

The importance of logical framework to project performance cannot be under estimated as underlined by Milika (2011) who was of the opinion that the logical frame work helps to analyse an existing situation like in relation to output as well as the identification of stakeholders needs and the definition of related objectives; and establish a causal link between inputs, activities, results, purpose and overall objective in the vertical logic. He further argues that logical framework output enables organizations to define the assumptions on which the project logic builds; identify the potential risks for achieving objectives and purpose; establish a system for monitoring and evaluating a communication and learning process among the stakeholders; like clients or beneficiaries, planners, decision-makers and implementers. It also considers strengths, weaknesses, opportunities and threats. The study did not test for moderating variables. The current study will establish the influence of logical framework and managers` competencies as the moderating variable on performance of community based projects.

A study focusing on the development of logical framework approach in Ghana by Leuzzi (2013) indicates that a major component of logical frame is the formulation of a Logical Framework Matrix based on activities, goals and purpose of the project. These are itemized in the logical framework matrix; and the logical framework is a more evaporate presentation that explains all components of a project. The logical framework matrix is in a Table form that can

be read at a glance by the relevant user. He concluded that the logical framework matrix is a participatory planning, monitoring and evaluation tool whose power depends on the degree to which it incorporates the full range of views of intended beneficiaries. The study used explanatory design; hence its results suffer from generalizability since it focused on a wider scope by covering Ghana as a country in the development of logical framework. However, the current study was carried out in Kenya and it focused on community based projects in all sectors in Bungoma county more specifically and sought to establish how application of logical framework influences performance of community based projects.

On how the logical framework analysis is used for monitoring and evaluation, Bakewell and Garbutt (2009) carried out a study that used a simple structured questionnaire from 18 different organizations, including donors, European NGOs, NGOs in developing countries and consultancy organizations. The findings indicate that the focus is often the logical framework to look at the expected project objectives laid out in the matrix, rather than the work itself. The findings further advance the argument that, in theory, the logical framework can be revised through the programme cycle and changes made, at least to the project objectives and output; however, in practice this rarely happens. This study did not test the influence of logical framework on the performance of community based projects which is the focus of the current study. The study used only the questionnaire as the data collection tool while the current study adopted a questionnaire and an interview guide as the main data collection tools.

A study by Businge (2010) in the Ugandan Rwenzori region used questionnaires for data collection with the unit of analysis being those in high positions of each firm. The study found out that donors rarely operate outside the log frame approach whereby project activities are the core aspects of the frame. However, they are boxed in results that are put in the project logical framework, and yet sometimes the situation on the ground might affect the achievement of some of the activities, hence requiring some aspects of the project to be changed in regards to objectives. It was concluded that any suggested changes by the implementing organizations would go through prolonged to and fro communication over the changes. The study relied on longitudinal data and did not examine the cause and effect of the variables at a specific period of time. The current study used cross-sectional data to examine the causal and effect of hypothesized relationships at a specific period of time.

## **2.4 Stakeholder Analysis and Performance of Community Based Projects**

By creating a sense of community ownership, participation leads to effectiveness and better decisions in projects (Kelly & Van Vlaenderen, 2005). Price and Mylius (2011) also saw that in order to ensure sustainability in projects it is important to cultivate local ownership which is achieved through participation. Kelly (2005) stated that participation leads to learning, which is a requirement for behavioural changes and practices. Stakeholders interact with the project in two fronts: cultural and political as stated in Newcombe (2003). These two fronts combined to impose invaluable barriers on stakeholders` engagement process. Barriers can emanate from the lack of awareness within the external stakeholders` community in respect of available package thereby resulting in exclusion of citizens.

While effective stakeholders` engagement benefits the project by eliminating conflicts and increasing cooperation between the firm and the stakeholders, ineffective engagement may result in unexpected problems that may be more prominent than a high profile construction mishap (Loosemore, 2012). There are also other widespread implications: financial, political, cultural and social effects (Loosemore, 2012). This protest, if not well managed could result in a serious lengthy, costly, and acrimonious dispute between the sponsoring contractor and the community (Chinyio & Olomolaiye, 2010). Due to imminent problems encountered in stakeholders` engagement, McCabe (2016) and Leuzzi (2013) examined the enablers of effective stakeholders` engagement namely: significant focus on communication; promoting partnership; promoting trust and readiness to cooperate among various actors. The general concord among researchers however champions the participation of all relevant stakeholders in the decision making processes. This is embedded in the practicality of ensuring that stakeholders` views are inculcated in the decision-making framework and implemented; and not in mere invitation to participate. There are also different levels of engagement.

Stakeholder participation contributes to inclusion and effectiveness in projects through community ownership of the process. Kolavalli and Kerr (2002) suggested that stakeholder participation increased project ownership by the beneficiaries and that it ensure project sustainability through inclusion. The authors further stated that community participation plays a role in conveying information, in particular local knowledge that fosters better action plans leading to performance and inclusion. This study, based on a survey of 36 project villages in

five states, suggests that there is no shared understanding of the meaning of participation or the means of effectively operationalising it. The paper finds that organising communities to give them collective voice; giving them opportunities to make critical decisions on what the projects will do; and making them share a portion of the costs are essential aspects of implementation processes to enhance community participation. A realistic strategy must also seek to change the capabilities and incentives of government bureaucracies themselves by creating situations in which it is in their best interest to work with communities. The generalization of the results was limited because the survey covered only 36 project villages. The current study addressed this gap by focusing on all community based projects in all the sectors.

A study by Dongier *et al.*, (2003) on what contributes to successful development initiatives by concluded that when communities contribute cash or in kind it helps in inclusion and therefore able to utilize local resources. This reduces dependence on outside resources, creates a sense of community ownership, ensure that outside influences do not alter or dictate choices, and correctly ascertain the real needs of beneficiaries. The study had a sample size of 32 firms determined through stratified and purposive sampling methods and used descriptive research design. The primary data collection tool was a questionnaire, and data were analysed through regression analysis. The study tested for direct linear relationship between independent and dependent variable. The current study tested for the moderating influence of managers` competencies between the variables.

A study was carried out by Blood (2013) on the imminent problems inducing ineffective stakeholders` engagement in mining projects using a structured questionnaire as the primary data collection instrument among fifty mining projects. The study identified compartmentalization, stakeholders` lack of capability, lack of baseline data, cumulative effect of incremental development, stakeholders` fatigue, gap between public expectation and regulatory requirements, as imminent problems inducing ineffective stakeholders` engagement in mining projects. From these broad themes, the study identifies organizational, project environment, communication, contractual, and regulatory issues affecting stakeholders` engagement. The study was conducted on a single sector, the mining projects, and thus findings could not be generalized to other projects in other sectors. The current study covered community based projects in all the sectors.

Stakeholder participation is fundamental in making sure capability and sustainability of improvement projects because it results in community capacity building and empowerment (Botchway, 2011). Participation of the beneficiaries in projects guarantees functionality is improved, making beneficiaries better positioned in identifying, implementing, monitoring and evaluating of projects. Zacharia et al., (2008) the qualitative take a look at discovered that, community participation of the communities and their capability within the observe programmes takes on one-of-a-kind forms in distinctive tiers of the project cycle. regardless of the time distinction among the vintage and new programme, the nature and extent of participation for the general public of local communities is normally restricted to data giving, consultation and contribution, which isn't always sufficient with regards to capability. local communities are typically not actively concerned in decision-making, planning, monitoring and evaluation procedures due to the fact they lack capability. these research whilst recognizing the need for stakeholders` capability, did not mainly deal with this variable. however, the current look at sought to establish how stakeholder capability as an independent variable impacts the performance of community based projects.

## **2.5 Problem Tree Analysis and Performance of Community Based Projects**

A problem tree provides an overview of all the known causes of and effect to an identified problem argues MDF (2005). This is important in planning a community engagement or behaviour change project as it establishes the context in which a project is to occur. Understanding the context helps reveal the complexity of life and this is essential in planning a successful change project (Ammeter, 2012). A problem tree involves writing causes in a negative form, for example lack of knowledge, not enough money, among others. Reversing the problem tree, by replacing negative statements with positive ones, creates a solution tree. A solution tree identifies means-end relationships as opposed to cause-effects. This provides an overview of the range of projects or interventions that need to occur to solve the core problem.

On why a problem tree should be created, Campbell *et al.* (2006) in their study established that creating a problem tree should ideally be undertaken as a participatory group event using visual techniques, such as flipcharts in which identified stakeholders can write their individual problem statements. He further argues that a properly planned project is addressing the real

needs of the beneficiaries and is therefore based upon a correct and complete analysis of the existing situation. The existing situation should be interpreted according to the views, needs, interests and activities of parties concerned. It is essential that all those involved participants accept the plans and are committed to implementing them. The importance of problem tree analysis according to Paul (2005), is that it helps the planning of a project, provides a guide as to the complexity of a problem by identifying the multiple causes; identifies particular lines of intervention and other factors that may need to be tackled with complementary projects and provides an outline of the project plan, including the activities that need to be undertaken, the goal and the outcomes of the project.

The advantages of participatory M&E as a solution to the problems and root causes of a project are outlined by Philip et al. (2008) in their study on Local Government and Integrated Water Resources Management (IWRM), *Engaging in IWRM—Practical Steps and Tools for Local Governments* Freiburg. They found out that problem tree analysis allows mechanism for receiving feedback and ideas for corrective actions; makes the project adaptable; strengthens ownership; leads to learning by all actors; and, widens the knowledge base necessary for assessing and taking corrective actions if need be on project problems. Availability of project funds alone is not a guarantee for the success of the project and, by extension sustainability. Stakeholders` participation in initiation, planning, implementation and monitoring and evaluation is important. The study collected primary data using questionnaire from public enterprises that were selected using purposeful sampling and employed a descriptive survey design. The study was conducted on the public enterprises and more specifically, the local government. The current study was conducted on private enterprises, in this case community based projects in all the sectors for comparative effects.

Problem identification is important in developing the capacity of grassroots communities, argues Mulwa (2008). Community development as a process begins with needs problem identification. When they do this together the community members are able to share the vision and commit to seeing it become a reality. What follows are sessions where the problems identified are discussed critically and analyzed objectively. This is aimed at understanding the problem clearly and appreciating their magnitude. The scope and clarity of the problem and cause effect relationships are identified during this stage. Resources available to address the problems are also identified. During this stage the community will identify a number of

problems but should be able to prioritize and order them from the most pressing to the least pressing needs. Similarly, the beneficiaries should assess the needs by identifying the cause-effects relationships and considering their resource endowment

Project initiation is the first phase of the project cycle. In this phase the idea for the project is generated, the goal is articulated, and feasibility of the project is determined. Moreover, decisions regarding project actors and implementers, stakeholders, and whether the project has sufficient support are made. During this phase, stakeholders conduct a needs analysis by identifying the needs and prioritizing them as well as identifying the root causes of the problems (Regional Partnership for Resource Development, 2009). Once the problem has been identified, beneficiaries discuss it at length and reach a consensus. The objective analysis is done, and a possible solution examined based on the root causes of the problem. From this report the focus was on project initiation which was assessed in tandem with other aspects including the root causes of the problem. The current study, however, sought to examine how root causes in problem tree analysis influence performance of community based projects.

During initiation, a needs analysis by stakeholders can serve as a guide to ensure that the project design is in line with the root causes of the problems identified of the said community according to Chikita (2009) in his study on participatory project identification and planning, a regional partnership for resource development publication. The study was undertaken to demonstrate how stakeholder participation in identification of root causes influence the performance of donor funded projects. A total sample size of 70 was used in the study. Descriptive design was used to analyse data; specifically the researcher used SPSS and mainly measures of central tendency were used to describe data. He concluded that the guiding principle in deciding whether community participation is possible and practical during project execution is the identification of root causes. The facts of root causes found in the preliminary stage are valuable in reaching a successful conclusion. This study was carried out in Nairobi and could not be generalized on projects operating in the local setup. This led to the current study which sought to establish how root causes in problem tree analysis influence community based projects in Bungoma County.

Conducting a problem tree is an important aspect for project managers. According to McCawley (2014), conducting a problem tree or a solution tree analysis provides a means of

reviewing the existing understanding of the effects and causes to a specific problem and how it can be overcome. A problem tree will likely reveal multiple branches of cause and effect relationships leading to the core problem. This is very valuable as it identifies factors that may not be addressed by the planned intervention. He further argues that existing regulations may be a factor in the problem, but this may not be impacted upon by the planned intervention. This may result in the failure to achieve project objectives. It could be that impacting upon regulation is not achievable and thus out of scope for the project. This study sought to establish the influence of problem tree analysis cause-effect relationship, while the current study sought to establish the independent relationship among variables such as identified problems, root causes and the effects against community based performance.

Using the problem tree analysis, a problem can be broken down into manageable and definable chunks as argued by White and Walker (2012). Since this enables clearer prioritization of effects and causes and helps focus objective; there is better understanding of the problem and its often interconnected and even contradictory effects. This is often the first step in finding win-win solutions. They further found out that it identifies the constituent issues and arguments, and can help establish who and what the political actors and processes are at each stage; it can help establish whether further information, evidence or resources are required to make a strong case, or build a convincing solution; presents issues rather than apparent, future or past issues are dealt with and identified; and, the process of analysis often helps build a shared sense of understanding, purpose and action. The primary data collection was questionnaire and data were analysed through regression analysis. The study tested for direct linear relationship between the independent and dependent variables. The current study tested for the moderating effect of managers' competencies between the variables.

## **2.6 Gantt Charts and Performance of Community Based Projects**

The following aspects were considered under Gantt Charts: resources, work accomplished, and time taken. Geraldi and Lechter (2012) argue that Gantt charts are a very useful tool for project management used to keep track of progress for each activity and how the costs are running. Gantt charts break a project down to a succession of tasks and assign each task to a different row along the vertical axis, according to Gcek (2008). He argues that the horizontal axis spans the expected duration of the project, with dates written along the top in hours, days, weeks or



whatever time frame is most appropriate. A horizontal bar outlines the expected duration for each task while the left side marks when the task begins, the right side marks the end. As work progresses, each bar is filled in according to how much work has been completed on each task. To figure out how the entire project is progressing, one need only draw a line through the graph at the current date/time; each task's progress is thereby easily assessed.

On the influence of information technology application on project resource management by Khosrow-Pour (2010) with a focus on the application of Gantt charts established that Gantt chart was influential in ensuring project success through effective resource management in Boston. The study results noted that the importance of project management integration including project scope management, project time management, project cost management, project quality management, project human resources management, project communications management, project risk management and project procurement management. Despite the findings from the study being relevant for effective project implementation, it was conducted in a different geographical location and thus the current study sought to establish whether the results from the study can be affirmed within the Kenyan context.

In seeking to establish the impact of the organizational structure and project organizational culture on project performance in Slovenian enterprises, Stare (2012) conducted a study the goal of the research being to identify the level of project organizational culture in Slovenian enterprises. The study also analysed the strength of the impact of the culture on project execution. The research was focused on the top and line management's attitudes and some other factors connected with managers' attitudes following the internal regulations, respecting the project manager's formal authority. The researcher also investigated the most common project organization types and the correlations among the organization, culture and project performance. The research showed a high level of project organizational culture and a high impact level of measured culture factors on project performance. An increasing level of project manager authority in different organization types positively impacts on several cultural dimensions and also has a direct impact on the project's performance. This study was conducted in Slovenian enterprises whereas the current study seeks to examine the influence of project management application tools on project performance within the Kenyan context narrowed to resources involved in a project.

On the critical factors influencing the project success amongst manufacturing companies in Malaysia was work accomplished in a project as shown from the findings of Kuen (2012). He examined the critical success factors for project management and found out that work accomplished had an influence of performance of a project. He also explored if project change control play a role in modeling the relationship between the independent and dependent variables; and found that project mission, top management support, client consultation, technical task, personnel competence, client acceptance, trouble shooting, project plan monitoring and effective communication are among the critical factors identified. From the 79 respondents who responded to 79 completed projects, this study classified the success in manufacturing in two dimensions as micro and macro success. However, the study did not analyse the relationship among variables at a specific period of time. The current study addressed this gap by using the descriptive cross-sectional survey to examine the relationship between variables at a specific period of time.

The Gantt schedule can illustrate the relationship between work activities having duration, events without duration that indicate a significant completion, and milestones that represent major achievements or decision points. Booker (2007) established that achieving milestones are occasions for celebration, to pop the champagne. They help to boost the morale of personnel involved in making the project a success. If the Gantt chart is drawn up along with suitable milestones of work accomplished by using some special symbol such as brightly-coloured diamonds, and the chart is kept in some centrally visible place, it would motivate all the people to achieve them. Other milestones could range from perhaps the approval of project design by the customer, or completion of project prototype, to delivery of individual modules by different teams. Various annotations can be used to communicate the progress of the project effort compared to the baseline plan, as well to depict in a graphical way area where there are modified expectations from the baseline plan. The study used descriptive statistical analysis to describe the characteristic of each study variable but did not analyse the quantitative data. The study found that work accomplished had substantial impact on project performance. It did not include the quantitative data obtained from the study. Hence, the current study included both the descriptive analysis and inferential statistics to analyse the quantitative data.

At its most fundamental level, the Gantt chart shows the relationship between work elements over a time span. It is used most extensively for production planning, scheduling and control

of time taken to undertake a specific project (Ghosh, 2013). After the project has commenced, managers simply fill in the hollow bars to a length that is in proportion to the fraction of the work that has been completed, for every task. In order to judge where we stand on any given date, say, today, we can draw an imaginary vertical line through the chart at the current date this is a snapshot line. The tasks that are supposed to have completed fully shall be to the left of this snapshot line. If they are indeed completed, their hollow bars shall have been completely filled. Partial filling indicates slip-ups. Tasks that are crossing the snapshot line are current tasks in hand; well, at the least they are tasks that were scheduled to have begun before today. If the horizontal bar on such tasks is filled into the left of the line, then the current tasks are behind schedule; if they are filled into the right of the line, then they are ahead of schedule. Future tasks, of course, will lie completely on the right of the snapshot line. The study was carried out in relation to time taken, which a single construct of Gantt chart application is in an organizational set up. The current study sought to establish the relation of Gantt chart and community based projects performance on more than one construct of time taken, work accomplished, and the resources used.

On the usefulness of Gantt chart in project management Gupta (2013) found out that while a Gantt chart can be useful to cope with some of the complications of projects, and embraces the importance of time and timing, it is based on principles that are not valid to all projects. The consequence is a propagation of a management approach that does not explicitly cope with complexity, ambiguity, uncertainty and change. In that respect, the Gantt chart fails to acknowledge insights from years of organization theory research and project management research with a firm grounding in contingency theory. This study sought to establish whether these findings were factual using the Kenyan context.

## **2.7 Project Design Tools and Performance of Community Based Projects**

On project design tools Thamhain (2012) conducted a study between 2010 and 2012, with 76 project teams of 27 companies, seeking, in turn, to associate with the environment of project teams with the same performance. According to the author, the main variables related to the project teams that influence success, are the environment of the team and team performance as much as project design tools. The study was conducted on only 76 project teams of 27

companies. However, the current study was conducted on all community based projects in all the sectors for comparative effects.

According to Kerzner (2009) every project should evolve to meet a customer's expectations in all three categories. However, many forces intervene and attempt to push projects off course. It is therefore essential to manage effectively the projects through proper project design tools in the planning, scheduling and control as project requires a heavy investment and is associated with risks and uncertainties (Newcombe, 2003). In Magano (2008) view, project management harnesses the competencies of various individuals, grouping them together and enabling them to achieve the objectives and ensure the success of the project.

## **2.8 Project Managers' Competencies and Performance of Community Based Projects**

Project managers' competencies affect performance of community based projects as shown by a study by Nyandemo (2010) who emphasizes that some organizations spend a great deal of time and money on training efforts for general project management skills, but after the training, a project manager might still not know how to tailor their project management skills to the organization's particular needs. Because of this problem, some civil society organizations have developed their own internal project management methodologies. According to Tarboda (2010), project management has sometimes been called the accidental profession because many project managers take on their first project management duties without benefit of formal training. The benefits of project management training include; project teams and customers do not have to learn procedures and new jargon with each new project; it becomes easier to compare projects over time when they involve similar measurements and approaches; and consistent tracking and reporting helps uncover inefficiencies in the overall project management approach.

Emphasis was given by Chinyio (2010) that most training in project management still resides within corporate training, consulting, and professional organizations entirely outside higher education. According to MacKay (2016) in project management, a training session could aim at developing or improving one of the project manager's competencies. A training session could refer to one or more, thus having an impact on duration of the training. Improving the capacities of local technical staff, training and workshops activities will allow the staff working in civil society organizations and public institutions involved to improve their knowhow and

practical experience. This in turn leads to a more effective and efficient operating civil society sector local staff. It therefore follows that for effective implementation of projects, training is a key component (McConville, 2007).

The failure of infrastructure projects across the globe has brought the efficacy of traditional project management tools, practice and competences under scrutiny (Pinto, 2018). Human factors were highlighted as the main determinants of projects` performance (Onukubwe, 2010). Research accentuated that most engineering practitioners are trained to be reactive (and largely in relation to management of the triple constraint) and, consequently, are under-equipped to deal with complexities associated with infrastructure construction projects (Ogunlana, 2013). Different leadership competences have been established, resulting in a variety of theories and models (Patel, 2008). However, this nomenclature has not been conclusive enough to establish a solid theory. The absence of such a theory, which adequately empirically links leadership with project success, represents a gap in the existing literature which still needs to be investigated (Creswell 2013). Leadership competences are required beyond traditional project management (Ammeter, 2012). This enables project managers to embrace the different project complexity factors, anticipate challenges and opportunities and align these with the stakeholders expectations of the different project (Ammeter, 2012).

Competency is rooted in knowledge but encompasses the understanding of clinical, technical, and communication competencies. It also refers to solving problems through the use of clinical judgement( Adeyemo, 2012). Competence is also described as having knowledge, competencies, personal qualities and experience (Adlerj, 2002). Competencies are used to create unique standards within disciplines and specialties. This encompasses educators, learners and practitioners. Competencies create an environment that fosters empowerment, accountability, and success evaluation and the acquisition of competencies can be through talent, experience, or training (Ekung, 2013). Project success indicators specify the measurable evidence necessary to prove that a planned effort has achieved the desired result (Adeyemo, 2012).

Increased resource networking has contributed to rapid growth in the number of organizations undertaking HIV and AIDS activities, most notably CBOs and NGOs according to Gilgen (2012). Fieldwork for the review was conducted on a detailed case study of a Tanzanian non-

governmental organization (NGO) based in Morogoro, and interviews were conducted with 18 respondents from civil society bodies, donor and international institutions, and international NGOs in Dar es Salaam. A review of literature and documentation pertaining to funding and support for civil society responses to HIV/AIDS were also undertaken. With increasing health financing available, particularly for HIV and AIDS, greater attention needs to be paid to the impact this can have on national and community level processes, thus more community AIDS response.

It concludes with reflections on how civil society might work to strengthen its own effectiveness in AIDS responses in Tanzania, as well as how funding relationships and mechanisms could be re-oriented to build upon civil society's natural assets and inherent strengths. This study used 18 respondents who were interviewed while the current study used both the questionnaire and an interview guide and focused on a wider area of focus.

According to Friedman (2002), increased resource networking permits a growth in the scale and scope of community-based organizations and, in some cases, can increase their professionalism and foster sustainability of community AIDS response. It can also lead to greater accountability, better programme definition and an improved understanding of monitoring and evaluation of programmes at the community level. However, a lack of local-level networking hampers the value of additional HIV and AIDS financing. While reprioritization of community activities is to be expected in the face of an epidemic of such proportions, increasing attention to HIV and AIDS may detract from the provision of other key community services.

Resources are key for the Performance of community HIV and AIDS response and ensuring long-term results are achieved, according to Musundi (2015). In his study on the influence of resource mobilization strategies on Total War against AIDS Youth Projects in Turbo Sub-County, Kenya he used a descriptive research design and targeted a population of 10 groups under TOWA as unit of analysis whereas the study unit of observation was 159 members. The researcher used questionnaires as a tool for data collection. The study established that resource fundraising and donor outreach contributes significantly to performance of TOWA Youth HIV and AIDS. Findings further showed that the organizations generate their resources through special events such as Harambees and sports. The study established that the organizations'

structure was tailored towards resource mobilisation. The study concludes that in terms of donor outreach resource plan, the organizations had met donor financial requirements. Besides, the organizations had the capacity/skill in proposal writing and applications for funding. Results from the study showed resource mobilisation affected performance. However, the study employed quantitative method; the current study used both quantitative and qualitative methods.

A study was carried out by Tekleab *et al.* (2009) to create a better understanding of the processes and emergent states that can explain the relationship between team size (number of members) and team performance in management teams. Within research on management teams, there are also few studies that have looked directly at why and how team size affects team performance. This study tested the proposition that team size has a general negative effect on the performance of management teams, and that relationship conflict and team cohesion partially mediate this relationship. Data was collected from 215 management teams primarily from Norway and Denmark. The teams ranged in size from three to 23 with a mean of 7.37. The results showed that when tested separately, both relationship conflict and team cohesion mediated a negative effect of team size on team performance. When the mediators were tested in the same model, only team cohesion mediated the impact of team size on team performance. The findings indicate that team cohesion is the primary driver of the two mediators in explaining the negative effects of team size on team performance. Although relationship conflict is involved in the size-performance association, an increase in relationship conflict is most likely an effect of a decrease in team cohesion, which in turn sets off a negative spiral between the two mediators. The current study focused on team cohesion and team size and how these influence performances in developed countries. However, the current study sought to establish the effect of project managers' competencies in the form of resource mobilization, team management and technical competence and their relationship with performance of community based projects.

A research was carried on the impact of teamwork on the achievement of targets in organizations in Kenya, a case of SOS children's villages, Eldoret by Ooko (2013). The purpose and objective of this study therefore was to establish the impact of teamwork on the achievement of organizational targets in Kenya. This study adopted descriptive research design. The target population for this study was 111, comprising of management and all other

employees of SOS Children's Village, Eldoret. From the findings, the study established that there were more women than men in the number of employees at SOS Children's Villages in Eldoret. The researcher used questionnaires, interviews, document reviews and observation techniques to collect data. Statistical Package for Social Scientist (SPSS) was used to analyse the data. The study also established that the ages of employees at SOS were generally over 25 years and that the importance of teamwork was apparent to most employees. However, job descriptions were found to be ambiguous and there were responsibility overlaps in most cases, creating confusion and disagreements among employees. The study also established also that job satisfaction was to be achieved through recognition of achievement, promotions, good working environments and fair rewards and remunerations. This was to impact team performance if it was done correctly. This study covered one organization and focused on one aspect in the current study, teamwork, using all data collection techniques. The current study however focused on team management as well as technical competence and resource mobilisation skills and how they influence performance.

An article by Abdul-Azeez *et al.* (2009) on appraisal of the impact of team management on business performance examined the impact of team management on business performance using Metro Mass Transit (Ghana) Limited as a reference point. The study was carried out in Accra, the administrative seat of Ghana and Takoradi. Copies of questionnaire were administered in the study area to generate primary data. The descriptive analysis technique using percentages and Table presentations were used to analyse the collected data. The study indicated that team management is an essential strategy needed to aid business performance; and, it is also an important tool which helps in improving business performance and productivity that can lead to business prosperity. Furthermore, the study revealed that individualism is a major hindrance to organization productivity. Lastly, the study recommended that for any organization to survive, maintain its sustenance in today's global business change, and be successful, effective team management was a highly needed strategy. This study used the questionnaire as the main and only data collection technique, and it focused on one organization as the reference point. The current study addressed this gap by examining the influence of team management on community based projects in all sectors.



A study carried out by Thi and Swierczek (2007) on the effect of human resource competencies on project performance in Vietnamese infrastructure projects develops a conceptual framework for determining the components of human resource competencies and project performance. The effects of human resource competencies on project performance are identified. The scope of the study is limited to infrastructure projects in Vietnam. The sample consisted of 239 project members and managers currently involved in infrastructure projects in Vietnam. In the conceptual framework of this study, the indicators of project performance are cost, time, technical performance and customer satisfaction as used in previous studies. The key components of human resource competencies are mainly based on indicators developed by Fleming (2005).

These components are project manager competencies and team member competencies. The relationships in the conceptual framework were analysed by Structural Equation Modeling (SEM) techniques with the application of SPSS and AMOS software. The results indicated that the human resource competencies demonstrate a significantly positive influence on project performance. This study was limited to infrastructure projects in Vietnam but the current study offered more insight on the effect of technical competence on performance of community based projects the focus being on all the sectors.

In relation to a study on new product development projects and project manager skill sets in the telecommunications industry in Australia, Kosaroglu (2008) based on a case study methodology for a better understanding of new product development (NPD) projects in the Australian Telecommunications service provider (Telco) industry, and what makes their project managers successful. Theoretical conclusions from the literature review were tested using empirical data from one-on-one interviews with experienced project management professionals and major stakeholders, for example, unit of data collection. Sample projects such as units of analysis were analysed to gain a better understanding of Telco NPD projects and the skill sets required for their success. A theoretical skill set framework of technical, leadership, managerial and administrative skills has been proposed and summarized with clear definitions grounded in the recent management and leadership literature and with a rationale of how they contribute to project management success that this thesis fleshes out. This framework was empirically proven to define successful Telco NPD project managers. The

study was conducted in the telecommunications industry. The current study was conducted on all sectors for comparative effect.

Formal training of project managers as an effort towards developing their competencies for the project management role is not frequently observed because most managers are promoted to this position first, due to their technical background and experience, and then some form of training is provided after the promotion. A study by Carbone and Gholston (2004) shows that very few organizations are developing their project managers, with the findings identifying that 41% of project managers confirm that their organizations prepared them for the role. Six out of seven companies that participated in the study had an official project manager title even though only three companies had a defined project manager career path. Formal competence development on the hard and soft skills of project managers would thus have a positive impact on project performance even though few empirical studies are available from previous findings. This study includes survey results of current practitioners with regard to project management training. However, the current study used both qualitative and quantitative results from questionnaires and interview guide to better understand the influence of technical competence on performance of community based projects across all the sectors.

Projects form part of organizational activities and have a direct impact on the organization's results and performance. Improving project management performance can have a positive effect on an organization. Being ultimately responsible for project results, the project manager has factors within his or her personal characteristics that may affect project performance. The purpose of this study is to analyse the project manager's personal characteristics in relation to its effects on project performance using an empirical survey of 244 project managers. In this study, they chose to keep the PM personal characteristics directly related to project performance to make the relationships more explicit so that effects and moderation effects could be directly tested without a second-order competence construct. Data collection was conducted by means of an online questionnaire. The results show that skills, knowledge and attitudes directly affect project performance and that personality traits do not have direct effects, but indirectly affect attitudes. The results also show that certification in project management does not directly affect project performance but has a moderating effect on the relationship between the project manager's skills and knowledge and project management

performance. This study used only the questionnaire to collect data on the study variables whereas the current study supplemented the questionnaire with an interview guide.

## **2.9 Theoretical Orientation**

A theory is defined by Thomas (2007) as a contemplative and rational type of abstract or generalizing thinking or the results of such thinking. Further he argues that theories guide individuals in findings facts rather than reaching goals and are neutral concerning alternatives among values. This study was guided by the following theories.

### **2.9.1 Systems Theory**

Systems theory originally propagated by Bertalanffy and reaffirmed by Jackson (2013) is defined as a working hypothesis, the main function of which is to provide a theoretical model for explaining, predicting and controlling a phenomenon in relation to how project design is concerned. Brandon (2010) also observes that all organizations consists of processing inputs and outputs with internal and external systems and subsystems which is helpful in providing a functional overview of any organization. CBPs need a functional system to manage their projects well. Brandon (2010) argues that systems need to be controlled as failure in one system leads to failure in others. CBPs need effective Gantt chart in order to ensure resources are available and used correctly, work is accomplished accordingly, and the timelines are met.

An organization is an integrated system of interdependent structures and functions constituted of groups, and a group consists of persons who must work in harmony. Each person must know what the others are doing. Each one must be capable of receiving messages and must be sufficiently disciplined to obey (Burke, 2013). Organizations must conceive living systems as systems of elements in mutual dynamic interaction and discover the laws that govern the pattern of parts and process of the concepts of organization-non-summative wholeness, control, self-regulation, equifinality, and self-organization. A system is a whole made up of parts. Each part can affect the way other parts work and the way all parts work together will determine how well the system works. This is a fundamental challenge to traditional management thinking which always causes sub-optimization; parts achieve their goals at the expense of the whole. Only changing the system solves the problem (Clark, 2012).

In essence, the systems perspective emphasizes that everything is connected to everything else and that it is often worthwhile to model businesses and processes in terms of flows and feedback loops. Systems thinking stresses linkages, relationships and flows. It emphasizes that any given employee or unit or activity is part of a larger entity and that ultimately those entities, working together, are justified by the results they produce. To effectively nimbly and proactively adapt to the demands of a rapidly changing environment, all system components or inputs, processes, outputs, and feedback must be managed. Systems theory perfectly explains why organizations need to check and evaluate their systems to achieve substantial results (Rummler, 2009). When organizations participate in cross sector social partnership projects, they are faced with the challenges from higher complexities due to the increased interdependencies and the increased requirement for transparency (Flippov, 2010).

In this study the theory views an organization as a social system consisting of individuals who cooperate within a formal framework, drawing resources, people and finances to produce products which pass through a system to ensure timelines are met. Effective allocation of resources and time on CBPs will ensure efficient and effective management of their projects and other resources for maximum outputs. The gaps of this theory were that it only agrees with changes that stabilize the system and it also focuses on inclusion rather than separation of inputs and outputs. This theory sought to enhance the relationship between Gantt charts and logical framework and how they influence performance of community based projects. While the theory covered these two objectives, it could not be adopted on variables such as problem tree analysis, stakeholder analysis and project manager`s competencies which led to the next theory which is the stakeholder theory.

### **2.9.2 Stakeholder Theory**

The stakeholder theory was initially advanced by Freeman in the 20th century but has since been revised by many scholars (Muthomi, 2015). This theory of organizational management and business ethics addresses morals and values in managing an organization. It identifies and models the groups which are stakeholders of a project, and both describes and recommends methods by which management can give due regard to the interests of those groups. In short, it attempts to address the "Principle of Who or What Really Counts". The stakeholder view of strategy is an instrumental theory of the projects, integrating both the resource-based view as

well as the market-based view, and adding a sociopolitical level (Jones, 2005). This view of the firm is used to define the specific stakeholders of a CBP of stakeholder identification as well as examine the conditions under which these parties should be treated as stakeholders.

Community members are stakeholders in community projects; therefore, it is important to involve them in projects activity from the start. Stakeholders theory argues that every legitimate person or group participating in the activities of a firm or organization, does so to obtain benefits, and that the priority of the interest of all legitimate stakeholders is not self-evident (Donaldson & Preston, 2005). Stakeholder Theory pays equal credence to both internal and external stakeholders; employees, managers and owners as well as financiers, customers, suppliers, governments, community and special interest groups. Stakeholders of a CBP can be internal (owners, customers, employees, and suppliers), and external (governments, competitors, consumer advocates, conservationists, broadcast/social media, among others). Mathenge (2014) describes these actors as any group or individual who can affect or is affected by the achievement of the organization`s objectives.

Community participation enhances social cohesion as members recognize the value of working in partnership with one another and organizations. It also adds economic value both through the mobilization of voluntary contributions to deliver regeneration and through skills development, which enhances the opportunities for employment and an increase in community wealth, gives residents the opportunity to develop the skills and networks that are needed to address social exclusion. CBOs must ensure the community members voluntarily and actively participate in the projects from the start (Muthomi, 2015)

Applying a stakeholder conception of projects as opposed to the more traditional input-output perspective implies adhering to a belief where all actors are involved with CBP in order to obtain benefits. This differs from the input-output model that illustrates how certain actors contribute input which the black box of an organization converts to benefits for its customers (Donaldson & Preston, 2005). Stakeholder theory is primarily a management instrument. The attributes power, urgency and legitimacy of claims define CDF projects stakeholders. Power and urgency must be attended to if managers are to serve the legal and moral interests of legitimate stakeholders. Stakeholder theory thus contains methods for identifying and managing stakeholders.

The stakeholder approach has been described as a powerful means of understanding the firm in its environment (Reed, 2008). This approach is intended to broaden the management's vision of its roles and responsibilities beyond the profit maximization function (Mansuri & Rao, 2004) and stakeholders identified in input-output models of the firm, to also include interests and claims of non-stockholding groups. Zachariah (2008) elaborated that the stakeholder model entails that all persons or groups with legitimate interests participating in an enterprise do so to obtain benefits and that there is no pre-set priority of one set of interests and benefits over another (Kelly, 2015).

Associated corporations, prospective employees, prospective customers, and the public at large needs to be taken into consideration. Overall, a central and original purpose of stakeholder theory is to enable managers to understand stakeholders and strategically manage them (Zachariah, 2008). The managerial importance of stakeholder management has been accentuated in various studies (Reed, 2008; Thake, 2014) that demonstrate that just treatment of stakeholders is related to the long term survival of the organization (Mulwa, 2008). While having its origins in strategic management, stakeholder theory has been applied to a number of fields and presented and used in a number of ways that are quite distinct and involve very different methodologies, concepts, types of evidence and criteria of evaluation. As the interest in the concept of stakeholders has grown, so has the proliferation of perspectives on the subject (Reed, 2008).

To deal with community based project challenges more effectively, there is a need to understand and engage all stakeholders (Teaklab 2009; Tarbodo, 2010). Moreover, 21<sup>st</sup> century projects have been moving towards a more stakeholder focused approach, hence there is a need to evaluate project success from the viewpoints of stakeholders rather than from the viewpoints of the traditional project measures of cost, time, and scope (Duggal, 2011). As Ooko (2013) and Musundi (2015) argue, many projects have failed because of poor stakeholder management such as poor identification of the stakeholders, misunderstanding of the stakeholder roles (Probst, 2010), and misalignment of the perception of the stakeholders about project success (Duggal, 2011).

From the sustainable development discipline, as Dongier, (2003) point out, the stakeholder theory can be used to evaluate the obligations of an organization seen from three perspectives: economic, social, and environmental. Lastly, from the project management discipline, the stakeholder theory is used to define the project context, such as the environmental and social context, and to evaluate project success (Mugano, 2008). Project management professionals have recognized that engaging stakeholders to achieve project success is more than merely communicating with them (Okumu, 2012). The stakeholder identification process aims to understand the individuals and/or groups that, either negatively or positively, impact or will be impacted by the project (PMBOK®, 2013). There are many different ways to perform this process. The PMBOK® (2013), for example, suggests to first analyse the project business case, the organization process, and the environment in which the project is delivered. The project team then uses this information to prioritize on which stakeholders they should focus their attentions and what appropriate action plans are required to best manage them in order to achieve project success. One of the ways to perform this is by using the framework presented by Thake (2014). By mapping the interest levels of stakeholders, the project team will be able to understand the expectation of the stakeholders towards the project goals (Thake, 2014).

This theory emphasizes that the community members also benefit from their participations. CBPs need to ensure the community members also participate in the decision making, their staffs are trained on handling the community members and also the community members' interests are considered. The gaps in this theory were that it diverts attention from creating business success to concentrating on who share its fruits and that the purposes of a company may be frustrated, or at least confused, by management's adoption of multi-fiduciary policies. This theory, therefore, assisted in the better understanding of the importance of stakeholder analysis in regard to community participation in the success of community projects' performance and the extent to which its application influences performance of community based projects. This theory also emphasizes the significance of the relationship between the top management staff or project managers with the stakeholders. Specifically, managers should understand that the success of the projects can be influenced greatly by the participation of various stakeholders. These stakeholders will participate depending on the relationship they foster with the top management and not junior workers acting on their behalf. This theory was not able to capture

its relationship with problem tree analysis leading to another theory, thus the resource based view of the firm theory.

### **2.9.3 Resource-Based View of the Firm Theory**

The resource-based view (RBV) of the firm was first proposed by Wernerfelt. He postulated that with effective planning of strategic resources and core competencies by the firm, sustained competitive advantage is achieved leading to superior firm performance. Collis and Montgomery (2014) supported the RBV proposition when they analysed competitive advantage from the resource-based view perspective, concluding that resources and capabilities are valuable source of sustained competitive advantage if well managed and planned for. However, Tarboda (2010) suggested that these characteristics of firm resources and capabilities cannot sustain competitive advantage since competitors will soon begin to acquire the same resources through imitation or substitution.

From a corporate strategy point of view, Pearce and Robinson (2007); and Peteraf and Bergen (2003) argued that the firm's resources and core competencies fundamentally determine firm strategies and the plans that an organization has in place. Hoffmann (2010) contends that for a firm to arrive at a better determined corporate strategy, it is important to conceive its resources as capacities towards superior performance. On his part, Leiblein (2003) argued that the RBV contemplates how firm resources are allocated and deployed in corporate strategy plans. Therefore, firm corporate strategy can be established by focusing on integration of firm resources (Furrer, Thomas and Goussevskaia, 2009).

According to Peteraf and Bergen (2003) the purpose of corporate strategy is to manipulate strategic resources and core competencies into new configurations to acquire and sustain competitive advantage. Therefore, firms must determine the correct corporate strategies based on strategic resources and core competencies (Tarboda, 2010).

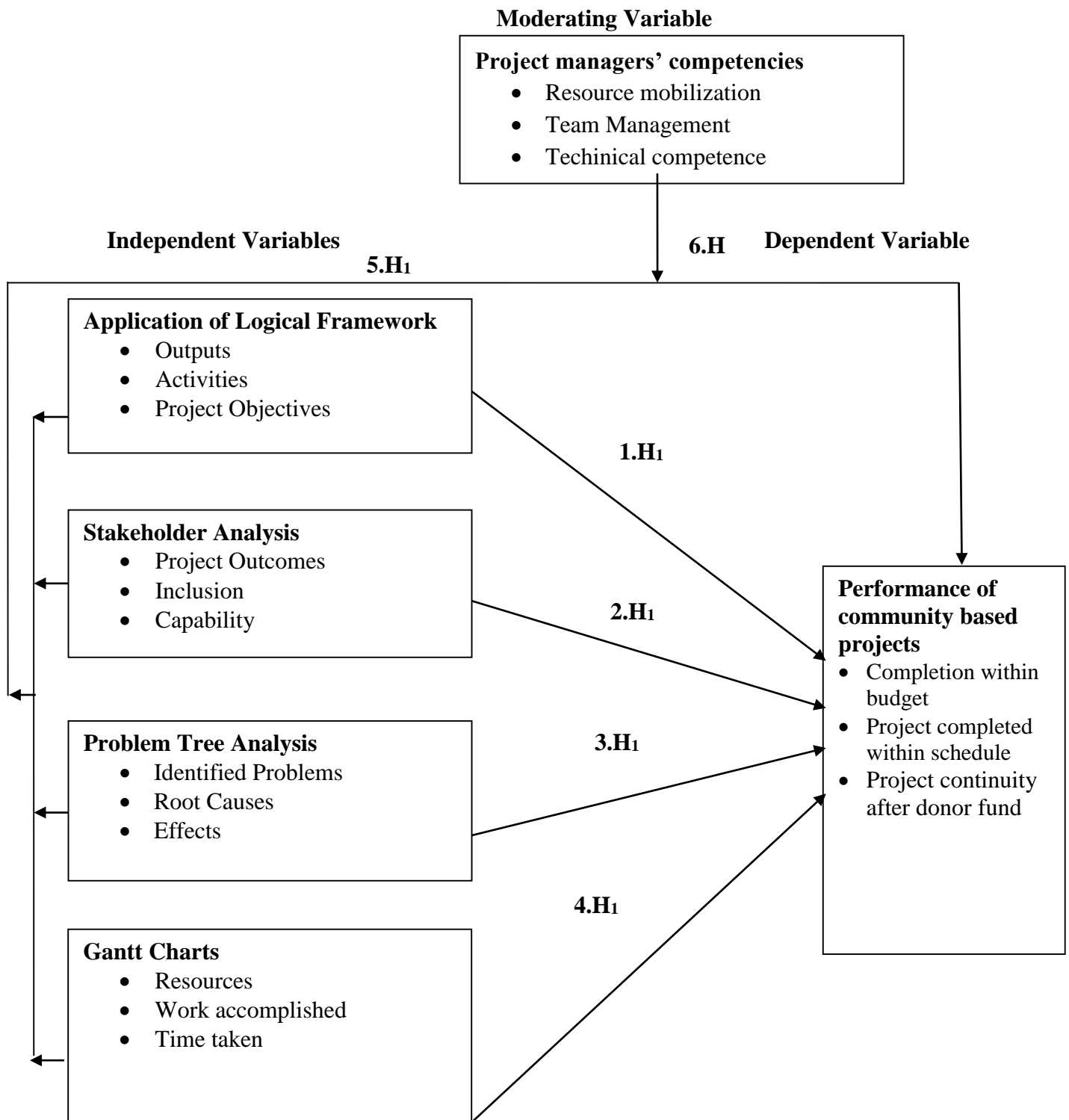
However, some scholars have criticized the theory. For instance, Lockett, Thompson and Morgenstern (2009) argued that the RBV assumes that firms are profit maximizing entities operating in distinctive markets with the assumption that the future value of firm resource is asymmetrically distributed through planning. Other critiques include that RBV has no competitive implications in unpredictable and unstable environments (Hoffmann, 2010). Further, Miller (2003) suggested that only firms that already possess valuable, rare, inimitable



and non-substitutable (VRIN) resources can acquire and apply additional resources towards competitive advantage for future performance. This theory supports the current study in articulating a systematic planning procedure for complete project cycle management including designing. This is in addition to the wider planning procedures of problem tree analysis, the development of objectives and indicators, and identification of risks and assumptions, which feed into the overall programme plan.

## **2.10 Conceptual Framework**

A conceptual framework is a scheme of concepts (or variables) which the research operationalizes in order to achieve set objectives (Corbett, 2003). It is the main structure that gives the research its form and shape and holds together all the elements in the logical configuration (Mugenda & Mugenda, 2012). It shows how a research conceptualizes the relationship between the variables in the study and shows such relationship (Burke, 2013). A conceptual framework is made up of independent, dependent and intervening (or moderating) variables.



**Figure 1: Conceptual Framework on application of project design tools, managers' competency and performance of community based projects in Bungoma County, Kenya**

Figure 2.3 presents the conceptual framework derived from theoretical and empirical reviews. The framework links the independent and the dependent variables with the intervention of the moderating variable. The dependent variable is performance of community based projects. It will be measured using indicators of project time completion, completion within budget and project sustainability. The independent variable is application of project design tools proxied by the indicators of application of logical framework, application of stakeholder analysis, application of problem tree analysis and Gantt charts. The study conceptualizes that the influence of application of project design tools on performance of community based projects is moderated by managers' competencies. The variable of managers' competencies is proxied by resource mobilization, team management and technical competence. As shown in the diagram above, the manipulation of any independent variable is expected to influence the performance of community based projects either in a positive or negative way.

## 2.11 Summary of Research Gaps

The following Table 2.1 provides the summary of research gaps to conclude the literature reviewed.

**Table 2.1: Summary of Knowledge Gaps**

Variable	Researcher (year)	Title of the Study	Methodology Used	Findings	Gap in Knowledge	Focus of the Current Study
Logical Framework	Milika (2011)	The importance of logical framework to project performance in Kenya	The study adopted the analytical descriptive method.	The results showed that logical framework output enable organizations define the assumptions on which the project logic builds; identify the potential risks for achieving objectives and purpose; establish a system for monitoring and evaluating a communication and learning process among the stakeholders; like clients or beneficiaries, planners, decision-makers and implementers.	The study only dealt with the importance of logical framework to project performance. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya.
Logical Framework	Leuzzi (2013)	The development of logical framework approach in Ghana	The study used explanatory design. A questionnaire, whose content validity was checked through an expertise opinion and reliability through test pre-test methods, was used to gather data.	Findings indicate that the logical framework matrix is a participatory planning, monitoring and evaluation tool whose power dependence of the degree to which it incorporates the full	The study only dealt with the development of logical framework approach in Ghana. It did not address the interaction of project design tools, project	The moderating influence of project manager's competencies on the relationship between project design tools and performance of

<b>Variable</b>	<b>Researcher (year)</b>	<b>Title of the Study</b>	<b>Methodology Used</b>	<b>Findings</b>	<b>Gap in Knowledge</b>	<b>Focus of the Current Study</b>
				range of views of intended beneficiaries	manager's competencies and performance of community based projects	community based projects in Bungoma County Kenya
Logical Framework	Bakewell and Garbutt (2005)	How the logical framework analysis is used for monitoring and evaluation	The study that used a simple structured questionnaire from 18 different organizations, including donors, European NGOs, NGOs in developing countries and consultancy organizations.	The findings indicate that that the focus is often the logical framework; to look at the expected project objectives laid out in the matrix, rather than the work itself.	The study only dealt with how the logical framework analysis is used for monitoring and evaluation. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya
Logical Framework	Busiinge (2010)	The importance of logical framework analysis in project management in Ugandan Rwenzori region	The study used questionnaires for data collection with unit of analysis being those in high organizational positions of each firm. The study relied on longitudinal data	The findings revealed that there was poor financial record keeping and poor financial reporting practices among small scale enterprises.	The study only dealt with the importance of logical framework analysis in project management. It did not address the interaction of project design tools, project manager's competencies and performance of	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya

<b>Variable</b>	<b>Researcher (year)</b>	<b>Title of the Study</b>	<b>Methodology Used</b>	<b>Findings</b>	<b>Gap in Knowledge</b>	<b>Focus of the Current Study</b>
					community based projects	
Stakeholder Analysis	Kolavalli and Kerr (2002)	On whether stakeholder participation contributes to inclusion and effectiveness in projects through community ownership of the process	Study was based on a survey of 36 project villages in five states. Questionnaires were used to collect data. Data was analyzed using descriptive statistics.	Findings revealed stakeholder participation increased project ownership by the beneficiaries and that it ensured project sustainability through inclusion and plays a role in conveying information, in particular local knowledge that fosters better action plans leading to performance and inclusion.	The study only dealt with whether stakeholder participation contributes to inclusion and effectiveness in projects through community ownership of the process. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya
Stakeholder Analysis	Dongier et al. (2003)	What contributes to successful development initiatives	The study had a sample size of 32 firms determined through stratified and purposive sampling methods and used descriptive research design. The primary data collection was questionnaire and data were analysed through regression analysis	The study revealed that when communities contribute cash or in kind it helps in inclusion and therefore able to utilize local resources thereby reducing dependency on outside resources, creates a sense of community ownership, ensure that outside influences do not	The study only dealt with what contributes to successful development initiatives. It did not address the interaction of project design tools, project manager's competencies and performance of	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya

Variable	Researcher (year)	Title of the Study	Methodology Used	Findings	Gap in Knowledge	Focus of the Current Study
				alter or dictate choices, and correctly ascertain the real needs of beneficiaries.	community based projects	
Stakeholder Analysis	Blood (2013)	The imminent problems inducing ineffective stakeholders` engagement in mining projects	Structured questionnaire was used as the primary data collection instrument among fifty mining projects The collected data was analyzed using descriptive analysis.	Findings revealed that negligence was the main cause of accidents on construction sites, and that labourers were the major victims of these site accidents. Loss of time in project execution was the major effect caused by these accidents in project execution.	The study only dealt with the imminent problems inducing ineffective stakeholders` engagement in mining projects. It did not address the interaction of project design tools, project manager`s competencies and performance of community based projects	The moderating influence of project manager`s competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya
Stakeholder Analysis	Zacharia <i>et al.</i> , (2008)	Community participation and their capability in the study programmes	Data were collected using an interview guide.  Data was analyzed by qualitatively.	The results of the study revealed that participation of the beneficiaries in projects ensures capability is enhanced making beneficiaries become better placed in identifying, implementing, monitoring and evaluating of projects.	The study only dealt with community participation and their capability in the study programmes. It did not address the interaction of project design tools, project manager`s competencies and performance of	The moderating influence of project manager`s competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya

<b>Variable</b>	<b>Researcher (year)</b>	<b>Title of the Study</b>	<b>Methodology Used</b>	<b>Findings</b>	<b>Gap in Knowledge</b>	<b>Focus of the Current Study</b>
					community based projects	
Problem Tree Analysis	Philip et al. (2008)	The advantages of participatory M&E as a solution to the problems and root causes of a project	The study collected primary data using questionnaire from public enterprises that were selected using a purposeful sampling and employed a descriptive survey design. The data was analyzed using descriptive and inferential statistics.	The findings revealed that problem tree analysis allows mechanism for receiving feedback and ideas for corrective actions; makes the project adaptable; strengthens ownership; leads to learning by all actors and widens knowledge base necessary for assessing and taking corrective actions if need be on project problems.	The study only dealt with the advantages of participatory M&E as a solution to the problems and root causes of a project. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya
Problem Tree Analysis	Mulwa (2008)	Why problem identification is important in developing the capacity of grassroots communities in Kenya	Questionnaires were used to collect data from community members. Data was analyzed using descriptive statistics.	Findings revealed that decisions regarding project actors and implementers, stakeholders and whether the project has sufficient support are made	The study only dealt with why problem identification is important in developing the capacity of grassroots communities. It did not address the interaction of project design tools, project manager's competencies and performance of	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya



Variable	Researcher (year)	Title of the Study	Methodology Used	Findings	Gap in Knowledge	Focus of the Current Study
					community based projects	
Problem Tree Analysis	Chikita (2009)	Participatory project identification and planning, a regional partnership for resource development publication in Nairobi	A total sample size of 70 was used in the study. Descriptive design was used to analyze data; specifically the researcher used SPSS and mainly measures of central tendency were used to describe data	The findings revealed that the guiding principle in deciding whether community participation is possible and practical during project execution is the identification of root causes. The facts of root causes found in the preliminary stage are valuable in reaching successful a conclusion	The study only dealt with participatory project identification and planning, a regional partnership for resource development publication. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya
Problem Tree Analysis	McCawley (2014)	Why conducting a problem tree is an important aspect for project managers	The primary data collection was questionnaire and data were analysed through regression analysis.	Findings revealed that conducting a problem tree/solution tree analysis provides a means to review the existing understanding of the effects and causes to a specific problem and how it can be overcome. The findings also revealed that existing regulations may be a	The study only dealt with conducting a problem tree is an important aspect for project managers. It did not address the interaction of project design tools, project manager's competencies and performance of	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya

<b>Variable</b>	<b>Researcher (year)</b>	<b>Title of the Study</b>	<b>Methodology Used</b>	<b>Findings</b>	<b>Gap in Knowledge</b>	<b>Focus of the Current Study</b>
				factor in the problem, but this may not be impacted upon by the planned intervention.	community based projects	
Gantt Chart	Schwalbe (2004)	The influence of information technology application on project resource management in Boston	Questionnaires were used to collect data. Analyses were performed using descriptive statistics and Pearson's product moment coefficient of correlation.	Results of descriptive statistics indicate that the importance of project management integration including project scope management, project time management, project cost management, project quality management, project human resources management, project communications management, project risk management and project procurement management	The study only dealt with the influence of information technology application on project resource management. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya
Gantt Chart	Stare (2011)	To establish the impact of the organizational structure and project organizational culture on	The research was focused on the top and line management's attitudes and some other factors connected with managers' attitudes using the questionnaire and the interview guide as the data collection tools. Data was analysed using descriptive statistics.	Findings revealed that a high level of project organizational culture and a high impact level of measured culture factors on project performance. An increasing level of project manager authority in	The study only dealt with establishing the impact of the organizational structure and project organizational culture on project performance. It did not address the interaction of project	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based

<b>Variable</b>	<b>Researcher (year)</b>	<b>Title of the Study</b>	<b>Methodology Used</b>	<b>Findings</b>	<b>Gap in Knowledge</b>	<b>Focus of the Current Study</b>
		project performance in Slovenian enterprises		different organization types positively impacts on several cultural dimensions and also has a direct impact on the project's performance.	design tools, project manager's competencies and performance of community based projects	projects in Bungoma County Kenya
Gantt Chart	Kuen (2008)	Critical factors influencing the project success amongst manufacturing companies in Malaysia	A total of 79 questionnaires were administered. The data were analyzed using simple spearman correlation and simple percentage	Findings revealed that work accomplished had an influence of performance of a project.	The study only dealt with critical factors influencing the project success amongst manufacturing companies in Malaysia. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya
Gantt Chart	Booker (2007)	On whether Gantt schedule can illustrate the relationship between work activities having duration,	Structured questionnaires were administered. The data was analyzed using descriptive statistics.	The study revealed that if the Gantt chart is drawn up along with suitable milestones of work accomplished by using some special symbol such as brightly-coloured diamonds, and the chart is kept in some	The study only dealt with whether Gantt schedule can illustrate the relationship between work activities having duration, events without duration that indicate a significant completion	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based

<b>Variable</b>	<b>Researcher (year)</b>	<b>Title of the Study</b>	<b>Methodology Used</b>	<b>Findings</b>	<b>Gap in Knowledge</b>	<b>Focus of the Current Study</b>
		events without duration that indicate a significant completion points		centrally visible place, it would motivate all the people to achieve them	points. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	projects in Bungoma County Kenya
Project Manager's Competencies	Musundi (2015)	The influence of resource mobilization strategies on Total War against AIDS Youth Projects in Turbo Sub-County, Kenya	A descriptive research design and targeted a population of 10 groups under TOWA as unit of analysis whereas the study unit of observation being 159 members. The researcher used questionnaires as a tool for data collection. Data was analyzed using descriptive statistics.	Findings revealed that organizations generate their resources through special events such as Harambees and sports and that the organizations' structure was tailored towards resource mobilization	The study only dealt with the influence of resource mobilization strategies on Total War against AIDS Youth Projects. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya
Project Manager's Competencies	Tekleab et al. (2009)	Proposition that team size has a general negative effect on the performance of management	Data was collected from 215 management teams using questionnaires. Data was analyzed using inferential statistics.	Findings revealed the following: when tested separately, both relationship conflict and team cohesion mediated a negative effect of team size on team performance and that team	The study only dealt with proposition that team size has a general negative effect on the performance of management teams, and that relationship conflict	The moderating influence of project manager's competencies on the relationship between project design tools and performance of

<b>Variable</b>	<b>Researcher (year)</b>	<b>Title of the Study</b>	<b>Methodology Used</b>	<b>Findings</b>	<b>Gap in Knowledge</b>	<b>Focus of the Current Study</b>
		teams, and that relationship conflict and team cohesion partially mediates this relationship in Norway and Denmark.		cohesion is the primary driver of the two mediators in explaining the negative effects of team size on team performance.	and team cohesion partially mediates this relationship. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	community based projects in Bungoma County Kenya
Project Manager's Competencies	Ooko (2013)	Impact of teamwork on the achievement of targets in organizations in Kenya, a case of SOS children's villages, Eldoret	This study adopted descriptive research design. The target population for this study was 111, comprising of management and all other employees of SOS Children's Village, Eldoret. The researcher used questionnaires, interviews, document reviews and observation techniques to collect data.	Findings revealed that job satisfaction was to be achieved through recognition of achievement, promotions, good working environments and fair rewards and remunerations. This was to impact team performance if it was done correctly	The study only dealt with impact of teamwork on the achievement of targets in organizations. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya

<b>Variable</b>	<b>Researcher (year)</b>	<b>Title of the Study</b>	<b>Methodology Used</b>	<b>Findings</b>	<b>Gap in Knowledge</b>	<b>Focus of the Current Study</b>
Project Manager's Competencies	Abdul-Azeez et al. (2009)	Impact of team management on business performance at Metro Mass Transit (Ghana) Limited	This study used the questionnaire as the main and only data collection technique, and it focused on one organization as the reference point.	Findings revealed that team management is an essential strategy needed to aid business performance; it is also an important tool which helps in improving business performance and productivity that can lead to business prosperity and that individualism is a major hindrance to organization productivity	The study only dealt with the impact of team management on business performance. It did not address the interaction of project design tools, project manager's competencies and performance of community based projects.	The moderating influence of project manager's competencies on the relationship between project design tools and performance of community based projects in Bungoma County Kenya

## **2.12 Summary of Literature Review**

This chapter covers sections such as the performance of community based projects, covering indicators such as project completion within budget, project completion within schedule and project continuity after donor funding. The chapter covers empirical studies on logical framework and performance of community based projects, stakeholder analysis and community based projects, problem tree analysis and community based projects, and Gantt chart and community based performance. The chapter presents literature on project design tools and performance of community based projects, project managers` competencies and performance of community based projects. Three theories were used which include systems theory defined by Bertalanffy as a working hypothesis, the main function of which is to provide a heoretical model for explaining, predicting and controlling phenomena in relation to how project design is concerned. The second theory was the stakeholder theory defined by Freeman as a theory of organizational management and business ethics that addresses morals and values in managing an organization. The third theory was resource based view of the firm proposed by Wernerfelt who posits that with effective planning of strategic resources and core competencies by the firm, sustained competitive advantage is achieved leading to a superior firm performance. The chapter also presents the conceptual framework which was a scheme of concepts which the research operationalizes in order to achieve set objectives.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the methodology which was used to conduct the study. It further describes the research paradigm, research design and the target population. The chapter also describes the sample size and sampling procedure as well as research instruments. In addition, the chapter covers validity and reliability of research instruments, data collection procedure, operationalization of variables, data analysis and ethical considerations.

#### **3.2 Research Paradigm**

A research paradigm sets the context for an investigator's study. The main philosophical underpinning of this study is the pragmatism derived from the work of Peirce, James, Mead and Davey (Wilson, 2010). To pragmatists, knowledge claims arise out of actions, situations and consequences rather than antecedent conditions. Pragmatism research philosophy accepts concepts to be relevant only if they support action. Pragmatist recognize that there are many different ways of interpreting the world and undertaking research that no single point of view can ever give the entire picture and that there may be multiple realities (Creswell, 2013).

According to pragmatism research philosophy, research question is the most important determinant of the research philosophy. Pragmatist can combine both, positivist and interpretivism positions within the scope of a single research according to the nature of the research question (Chandes *et al.*, 2010). On the other hand, pragmatism also allows the researcher to interact with the research and especially with the respondents unlike the epistemological stand held by positivism and post-positivism paradigms (Collis, 2014).

This approach was considered in this study since, as opposed to positivism and interpretivism research philosophies, pragmatism research philosophy can integrate more than one research approaches and research strategies within the same study. Moreover, studies with pragmatism research philosophy can integrate the use of multiple research methods such as qualitative, quantitative and action research methods (Collis, 2014).



### **3.2.1. Research Design**

Collin (2014) summarizes the essentials of research design as an activity and time-based plan: always based on the research question; guides the selection of sources and types of information; a framework for specifying the relationship among the study variables and outlines the procedures for every research activity. The study adopted both descriptive and correlation research designs. Mugenda and Mugenda (2012) share insights on the importance of the mixed methods and allay any potential fears posed by pragmatism, paradigms and political mixed methods in the current contemporary research. Creswell (2013) further suggested that descriptive research design is usually preferable when data is collected to describe situations, phenomenon and institutions. Based on this premise therefore if a statistically significant relationship is known to exist between two variables then it is possible to predict one variable from the information derived from the other (Kothari, 2011).

This study used the descriptive survey research design. According to Wilson (2010), this design is advantageous since subjects or participants are observed in a natural and unchanged environment and the design may be a pre-cursor to future research because it can be helpful in identifying variables that can be tested. This research design also portrays the characteristics of a population fully and this allows for a multifaceted approach to data collection and analysis (Cresswell, 2013). On the other hand, a correlation research approach attempts to discover or establish the existence of a relationship between two or more aspects of a situation (Creswell, 2013). Correlation analysis also facilitates determination of the relationships between the independent variables and their influence on the dependent variable (Cooper & Schindler, 2014). This study therefore was able to generalize the findings to all the community based projects in Bungoma County.

### **3.3. Target Population**

A target population, as described by Creswell (2013) is the entirety of a real or hypothetical set of people, events or objects to which an investigator wishes to generalize the result of a study. The target populations for this study were 15 community based projects which met the study criteria from a total of 96 community based project operating in Bungoma County ([www.bungoma.go.ke](http://www.bungoma.go.ke)). In order to be considered as a community-based project in this study, the project needed to fulfill two minimum qualifications: firstly, the project must have been in

operation for a period exceeding ten years with an operation budget of Ksh. 5 million and above. Also the project must be receiving funding from both local community contribution and foreign assistance. A period of ten years and minimum budget of 5 million were both important because the combination provided possible parameters within which projects were expected to have grown from basic to professional operations that appreciates application of project design tools, a criteria further highlighted by Ngonyani (2013).

On the other hand, local community and foreign funding were considered in this study since they provided a sense of enhancing participation, pooling of resources hence capacity, sustainability, quality and accountability which are outcomes of proper application of project design tools. From the ninety six community-based projects in Bungoma County (Bungoma County Records, 2018), thirty six belonged to the educational sector, fifteen to the agricultural sector, twenty three to the health sector, nine to the culture and social services sector, six to the trade sector and seven to the forestry and natural resources sector. Of these projects, only fifteen fit these above mentioned criteria: five community-based projects from education, three from agriculture, three from health, two from culture and social services, one from trade and one from forestry and Natural resources. The target population from the fifteen community-based projects which met the study criteria was as follows: education had seventy two employees, agriculture had thirty employees, health had forty six employees, culture and social services had eighteen employees, trade had twelve employees and forestry and natural resources had fourteen employees. The target population considered provided data for this study to achieve the study objectives. This is illustrated in Table 3.1.

**Table 3.1 Target Population**

Sector	Total Projects	Number of Projects Meeting criteria	Target Population
Education	36	5	72
Agriculture	15	3	30
Health	23	3	46
Culture and Social Services	9	2	18
Trade	6	1	12
Forestry and Natural Resources	7	1	14
<b>Total</b>	<b>96</b>	<b>15</b>	<b>192</b>

**Source: Bungoma County records (2018)**

### **3.4. Sample Size and Sampling Procedure**

Burke (2013) underscores the importance of selecting a representative sample through making a sampling frame. From the population frame the required number of subjects, respondents, elements or firms were selected in order to create a sample. This section covers the sample size and the sampling procedure that was used in the study.

#### **3.4.1 Sample Size**

The sample size determination is constrained by the expense of data collection and the need to have sufficient statistical power. Since the target population was 192 staff from the project meeting criteria which is a very large number, the study used simple random sampling to select those who participated in the study as shown below. Those selected met the criteria of easy accessibility, availability at a given time and willingness to participate in this study. In addition, the study purposively selected one manager from each community-based project totaling to 15 managers to participate in this study. Purposive sampling was used to select the managers as they were deemed knowledgeable on the subject area. They were also assumed to have had the needed technical skills required to answer to the research questions in this study. To determine the sample size, the study used the following formula on the 192 employees as suggested by Silverman (2008).

$$n = X^2 N p q / \{d^2(N-1) + X^2 p q\}$$

$$n = 1.962 \times 192 \times 0.5 \times 0.5 / \{0.052(192-1) + 1.962 \times 0.5 \times 0.5\}$$

$$n = 184.397 / 1.4379$$

$$n = 128 \text{ respondents}$$

n = Desired sample size

N = Target population

P = population proportion

q = 1-p

d = corresponding to significance level which was the degree of accuracy reflected by amount of error that was associated with the sample size of the population

X<sup>2</sup> = chi square value for one degree of freedom relative confidence at 95% confidence level, X=1.96

The study used proportionate sampling because each sector was allocated a sample of respondents depending on its proportion to the total number of respondents. Proportionate sampling also enabled the researcher to achieve greater representativeness in the sample of the population. This was accomplished by selecting individuals at random from subgroups in proportion to the actual size of the group in the total population.

**Table 3.2: Sample Size Determination**

<b>Sector</b>	<b>Target population</b>	<b>Sample size</b>	<b>Percentage (%)</b>
Education	72	48	38%
Agriculture	30	20	16%
Health	46	31	24%
Culture and Social Services	18	12	9%
Trade	12	8	6%
Forestry and Natural Resources	14	9	7%
<b>Total</b>	<b>192</b>	<b>128</b>	<b>100%</b>

### **3.4.2 Sampling Procedure**

Sampling is the process of selecting a sufficient number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group (Cresswell, 2013). The sample of project managers was done through purposeful sampling. Purposive sampling is a non-probability sampling where sample elements are selected based on a population characteristic and the objective of the study (Mugenda & Mugenda, 2012). Creswell (2013) affirmed that expert purposive sampling is usually desisted when specialized knowledge or skills are required from the population characteristics. This was necessary because the study sought to identify and select information-rich individuals to participate in this study for the most effective use of resources.

On the other hand, the sample of respondents in the staff category was determined using stratified random sampling. This method was preferred because it provides greater precision, guards against unrepresentative sample and obtains sufficient sample points to support a separate analysis of any subgroup (Burke, 2013). Each of the sectors where the projects fell were considered as the stratum and employees were chosen randomly in each of the sectors to form the sample elements

### **3.5. Data Collection Instruments**

The research instrument that was used for the survey was a structured questionnaire supplemented by an interview guide. The data for the study was supplied by the study's target population, and thus, a structured questionnaire and the interview guide were considered as the most effective instruments. An interview guide was administered among project managers while the questionnaire was administered to employees of community based projects. Questionnaires were appropriate for studies since they collect information that is not directly observable as they inquire about feelings, motivations, attitudes, accomplishments as well as experiences of individuals (Mansuri, 2004). Phillipov (2010) stated that a questionnaire is useful in obtaining objective data because participants are not manipulated in any way by the study. An interview guide was considered in this study because it was useful in obtaining detailed information about personal feelings, perceptions and opinions, it allowed more detailed questions to be asked and achieved a high response rate from the small respondent segment comprising of project managers who were 15 in number

### **3.5.1 Questionnaire for other Project Employees**

The questionnaire comprised of both open and close-ended questions. The questionnaire had two sections namely A and B. Section A covered the demographic profile of respondents while section B covered the influence of project design tools and managers' competencies on the performance of community based projects. This section also had questions related to performance, logical framework, stakeholder analysis, problem tree analysis and Gantt charts.

The quantitative section of the instrument used both a nominal and a Likert-type scale format to determine each of the variables. A five point Likert-scale ranging from 1 to 5 was used to guide the responses to statement like questions. The Likert - type format was selected as the format yields equal- interval data, a fact that allows for the use of more powerful statistical data to test the stated hypotheses (Corbett, 2013). Collins (2010) observed that questionnaires are very economical in terms of time, energy and finances. Similarly, they yield, quantitative data which are easy to collect and analyse.

### **3.5.2 Interview Guide for Project Managers**

In interviews, the researcher can ask key respondents about the facts of a matter as well as their opinions about events (Wilson, 2010). The interview guide for project managers collected data on logical framework, stakeholder analysis, problem tree analysis, and Gantt chart. The interview guide was used to collect data on the influence of project managers' competencies on project design tools and performance of community based projects. The interview guide had two section namely A and B. Section A of the interview guide had questions on demographic information whereas section B had nine questions on specific information on study variables.

### **3.6. Pilot Test**

A pilot test was conducted to assess the questions' validity and the likely reliability of the data that was collected. According to Creswell (2013), a pilot test is conducted to detect weaknesses in the design and instrumentation and provide a proxy data for selection of probability sample. The advantages of conducting the pilot test include enhancing the training of field staff, review of instrument and prevention of wasteful expenditure on a full blown survey whose results may

not be applicable (Lewis, 2017). According to Ogunlana, (2013), a pilot study is an excellent way to determine the feasibility of the study.

The pilot study involved 12 conveniently selected respondents. According to Connelly (2008) extant literature suggests that a pilot study sample should be at least 10% of the sample projected for the larger parent study. The current study therefore carried out a pre-test study on the 12 project employees conveniently selected within the projects undertaken in the neighbouring Kakamega County. The pretesting of the instrument sought information from the participants to determine the degree of clarity of questions and to identify problem areas that needed attention. The pilot study gave an opportunity to detect and remedy any potential problems with the instrument including questions that were not understood by the respondents. Interviews were also conducted on six project managers. The responses from the piloting exercise enabled the review and refinement of the questionnaire and interview guides. The respondents who participated in the pilot testing were not involved in the main study so as to eliminate bias.

### **3.6.1 Validity of the Instruments**

Validity is the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform. Loosemore (2010) defines validity to refer to the goodness, accuracy, relevance and richness of data. To ensure the validity of the study, the researcher used content validity through expert and supervisor's opinion in checking for consistency and ruling out ambiguity and contradiction. This was done by checking whether the instrument adequately covered all the content that it should with respect to the study objectives.

### **3.6.2 Reliability of the Instruments**

Reliability is the degree of consistency in the assignment of similar words, phrases or other kinds of data to the same pattern or theme by different researchers (Hussey & Collis, 2009). It also means the degree of consistency that the same researcher assigns similar observations and interpretations at different points in time. The researcher used the Cronbach's Alpha that is widely used to assess internal consistency reliability and is considered applicable for three, four, or five- point Likert scale items. A standard minimum value of 0.7 is considered adequate to guarantee internal consistency (Burke, 2013). From the findings in Table 3.3 below, five

variables were considered for the study. The Cronbach's Alpha for all the variables was found to be greater than 0.7.

This showed that it was above the minimum threshold implying that no editing was required for the research instrument as far as logical frame, stakeholder analysis, problem tree analysis, Gantt charts, and project manager's competence variables were concerned. The findings above thus corroborate with Mkutu (2011) who predisposes that; Cronbach Alpha is considered a good measure of reliability in social science research when it is found to be 0.70 or above. The Cronbach's coefficient alpha method determines how items correlate among themselves. A high coefficient implies that items correlate highly among themselves and that there is consistency among the items in measuring the concept of interest (Mugenda & Mugenda, 2012) Alpha is therefore an estimate of the correlation between two random samples of items from a universe of items. The Cronbach's coefficient alpha method was used to test the reliability of the instruments in this study.

**Table 3.3 Summary of the Reliability Tests**

<b>Variable</b>	<b>Cronbach's Alpha</b>	<b>No. of Items</b>
Logical Framework	.954	15
Stakeholder Analysis	.982	15
Problem Tree Analysis	.859	15
Gantt Charts	.935	15
Project Managers Competencies	.880	15

The results in Table 3.3 indicate that each of the study predictor variables had 15 questions which were Likert scale in nature. The Cronbach's alpha value for logical framework was 0.954, stakeholder analysis 0.982, problem tree analysis 0.859, application of Gantt charts 0.935 and project manager's competency yielded 0.880. The results indicate a higher value of the Cronbach's alpha depicting presence of a high internal consistency of the variables and so suitability of the research instrument for proper collection of the research data.



### **3.7 Data Collection Procedure**

Prior to the data collection exercise, the research assistants were recruited and trained by the researcher. Data was then collected through the use of the questionnaires by both the researcher and the trained research assistants. The research assistants were recruited from the local area and were briefed on the process and procedures for administering and recording data. The research assistants were also briefed on ethical issues in research embarking on data collection. Each research assistant was assigned a specific number of community based projects from which to collect data.

A questionnaire was used to collect information from a sample of 128 respondents. A drop and pick method was applied. The questionnaires had both open and closed-ended questions for issues related to the problem. Prior information was passed to all research participants. Every effort was made to ensure research participants were not inconvenienced and time-lines adhered to. The researcher obtained consent from Bungoma County government, project managers and individual participants before embarking on data collection. In regard to the interview the researcher was in charge of the process of interviewing the 15 project managers from the community based projects targeted.

### **3.8 Data Analysis Techniques**

Before processing the responses, the completed questionnaires were managed for completeness and consistency. The study generated both qualitative and quantitative data. Quantitative data was coded and entered into Statistical Packages for Social Scientists (SPSS Version 21.0) and analysed using descriptive statistics. Qualitative data was analysed based on the content matter of the responses. Responses with common themes or patterns were grouped together into coherent categories.

Descriptive statistics involved use of absolute and relative (percentage) frequencies, measures of central tendency and dispersion (mean and standard deviation respectively). Quantitative data was presented in Tables and graphs and explanation was presented in prose. The study also used inferential statistics to establish what the influence of project design tools, project managers` competencies on performance of community based projects in Bungoma County. Specifically, the study used Spearman correlation to establish this relationship between the independent variables and the dependent variable. Pearson r was used in this study since the

data measured in the Likert scale and Pearson's correlation coefficient technique is recommended as being the most appropriate for determining relationships (Kothari, 2004). The assumption associated with the application of Pearson (r) is that the relationship between the variables being correlated is linear. The correlation was based on two-tailed tests in order to allow for the possibility that the influence of independent variables on the dependent variable could assume a positive or a negative direction. The researcher used 95% confidence level to help in describing the uncertainty associated with a sampling method in this study. The student *t*-test was used to assess whether the independent variables were statistically different from each other.

### 3.9. Regression Models

The following correlation and regression models guided the data analysis where:

Y– Dependent Variable

$\beta_0$ – Constant Term

$\beta_1, \beta_2, \beta_3, \dots \beta_n$ – Regression coefficients

$X_1, X_2, X_3, \dots X_n$  – Predictor Variables

e – Error Term

For research objective one, a hypothesis was formulated and the corresponding correlation model was developed.

#### Model 1

H<sub>1</sub>: Application of Logical framework has a significant influence on performance of community based projects in Bungoma County.

Performance of community based projects = f (Logical framework)

$$Y = \beta_0 + \beta_1 X_1 + e$$

For research objective two, a hypothesis was formulated and the corresponding correlation model was developed.

Where: Y= performance of Community Based Projects

$X_1$  = Application of Logical Framework

## **Model 2**

H<sub>2</sub>: Application of stakeholder analysis has a significant influence on performance community based projects in Bungoma County.

Performance of community based projects = f (Stakeholder analysis)

$$Y = \beta_0 + \beta_2 X_2 + e$$

For research objective three, a hypothesis was formulated and the corresponding correlation model was developed.

Where: Y = performance of Community Based Projects

X<sub>2</sub> = Application of Stakeholder Analysis

## **Model 3**

H<sub>3</sub>: Application of problem tree analysis has a significant influence on performance community based projects in Bungoma County.

Performance of community based projects = f (Problem tree analysis)

$$Y = \beta_0 + \beta_3 X_3 + e$$

For research objective four, a hypothesis was formulated and the corresponding correlation model was developed.

Where: Y = performance of Community Based Projects

X<sub>3</sub> = Application of Problem Tree Analysis

## **Model 4**

H<sub>4</sub>: Application of Gantt charts have a significant influence on performance community based projects in Bungoma County.

Performance of community based projects = f (Gantt chart)

$$Y = \beta_0 + \beta_4 X_4 + e$$

For research objective five, a hypothesis was formulated and the corresponding regression model was developed.

Where: Y = performance of Community Based Projects

X<sub>4</sub> = Application of Gantt Charts

### Model 5

H<sub>5</sub>: Combined applications of project design tools have a significant influence on performance of community based projects in Bungoma County.

Performance of community based projects = f (Combined project design tools)

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

For research objective six, a hypothesis was formulated and the corresponding regression model was developed.

Where: Y = performance of Community Based Projects

X<sub>1</sub> = Application of Logical Framework

X<sub>2</sub> = Application of Stakeholder Analysis

X<sub>3</sub> = Application of Problem Tree Analysis

X<sub>4</sub> = Application of Gantt Charts

### Model 6

H<sub>6</sub>: Project manager`s competencies have a significant influence on the relationship between application of project design tools and performance of community based projects in Bungoma County.

Performance of community based projects = f (Project design tools, Project manager`s

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_{14} + \beta_6 X_1X_{14} + \beta_7 X_2X_{14} + \beta_8 X_3X_{14} + \beta_9 X_4X_{14} + \epsilon$$

Where:

Y – Performance of Community Based Projects

a – Constant Term

b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>, b<sub>4</sub>, b<sub>5</sub>, b<sub>6</sub>, b<sub>7</sub>, b<sub>8</sub>, b<sub>9</sub> – Regression Coefficients

β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub>, β<sub>4</sub>, β<sub>5</sub>, β<sub>6</sub>, β<sub>7</sub>, β<sub>8</sub>, β<sub>9</sub>

X<sub>1</sub> – Logical framework

$X_2$  – Stakeholder Analysis

$X_3$  – Problem Tree Analysis

$X_4$  – Gantt Charts

$X_{14}$  – Manager`s Competencies

e – Error Term

For empirical conclusions to be arrived at, tests of various hypotheses were done. Table 3.4 indicates the summary of the research objectives, research hypotheses and type of analysis that were carried out.

**Table 3.4: Hypothesis Testing**

<b>Objective</b>	<b>Hypothesis</b>	<b>Type of Analysis</b>
<b>Objective 1:</b> To establish how application of logical framework influences performance of community based projects in Bungoma County	<b>H<sub>01</sub>:</b> Application of logical framework has a significant influence on performance of community based projects in Bungoma county	Pearson’s Correlation and Linear Regression Analysis
<b>Objective 2:</b> To assess how application of stakeholder analysis influences performance of community based projects in Bungoma County	<b>H<sub>02</sub>:</b> Application of stakeholder analysis has a significant influence on performance community based projects in Bungoma County	Pearson’s Correlation and Linear Regression Analysis
<b>Objective 3:</b> To examine how application of problem tree analysis influences performance of community based projects in Bungoma County.	<b>H<sub>03</sub>:</b> Application of problem tree analysis has a significant influence on performance community based projects in Bungoma County.	Pearson’s Correlation and Linear Regression Analysis
<b>Objective 4:</b> To explore how application of Gantt charts influence performance of community based projects in Bungoma County.	<b>H<sub>04</sub>:</b> Application of Gantt charts has a significant influence on performance community based projects in Bungoma County.	Pearson’s Correlation and Linear Regression Analysis

**Objective 5:** To explore the combined influence of project design tools and manager's competencies on performance community based projects in Bungoma County.

**H<sub>05</sub>:** Combined application of project design tools have a significant influence on performance community based projects in Bungoma County.

Multiple Regression Analysis

**Objective 6:** To establish how the project manager's competencies influence the relationship between design tools and performance in Bungoma County.

**H<sub>06</sub>** Project manager's competencies have a significant influence on the relationship between design tools and performance in Bungoma County.

Multiple Regression and Hierarchical Regression

---

### 3.10 Ethical Considerations

According to Ackermann (2011), ethics involves making a judgement about right and wrong ethics behaviour. Ethics as noted by Minja (2009) is referred to as norms governing human conduct which have a significant impact on human welfare. Indeed, as observed by Ammeter (2012), is about choice between good and bad. Ethical issues are norms governing human conduct which have a significant influence on human welfare. It involves making a judgement about right and wrong behaviour (Kothari, 2007). Before data collection, permission to carry out research was sought. First, the researcher was cleared by the University of Nairobi to collect data through an introduction and data collection letter. These letters were forwarded to National Commission for Science, Technology and Innovation for the processing of the research permit. Upon receipt of the research permit the researcher sought permission from the County Government of Bungoma prior to data collection. A consent letter was presented to the respondents before commencement of any data collection and each respondent signed a consent form to ensure confidentiality of any information given. The researcher provided adequate and clear explanation on the purpose of the study to all respondents. In the event that respondents wanted to ascertain that the information they gave was not distorted in any way, the researcher informed them of the future availability of the research thesis in the University of Nairobi's Jomo Kenyatta Memorial Library (JKML) after the researcher's graduation. Confidentiality was of concern as the information relevant to the study was of strategic

importance. In this regard, the names of the respondents were not disclosed. In addition, where a response was attributed to specific individuals, the said information has been maintained in strict confidence and anonymity in the thesis.

**Table 3.5 Operationalisation of the Research Variables**

Objective	Variables	Indicators	Measurement	Measuring Scale	Research Approach	Type of Statistical Analysis	Tool of Analysis
1. To establish how application of logical framework influences performance of community based projects in Bungoma County	Dependent Variable: Performance of Community Based Projects in Bungoma County	<ul style="list-style-type: none"> <li>• Completion within budget</li> <li>• Project completed within schedule</li> <li>• Project continuity after donor fund</li> </ul>	A composite index was obtained by calculating the average of the total sum of the responses of each respondent measuring this variable.	Interval	Quantitative	Parametric	Descriptive Analysis
		<ul style="list-style-type: none"> <li>• Performance of community based projects</li> </ul>	Open-ended questions	n/a	Qualitative	Non-Parametric	Descriptive Analysis
	Independent Variable: Logical Framework	<ul style="list-style-type: none"> <li>• Project output</li> <li>• Project activities</li> <li>• Project objectives</li> </ul>	A composite index was obtained by calculating the average of the total sum of the responses of each respondent measuring this variable.	Interval	Quantitative	Parametric	Pearson's Correlation and Linear Regression
		Logical framework and performance of community based projects.	Open-ended questions	n/a	Qualitative	Non-Parametric	Descriptive Analysis
2. To assess the extent to which application of stakeholder analysis influences performance of community based projects in Bungoma County.	Independent Variable: Stakeholder Analysis	<ul style="list-style-type: none"> <li>• Project Outcomes</li> <li>• Inclusion</li> <li>• Capability</li> </ul>	A composite index was obtained by calculating the average of the total sum of the responses of each respondent measuring this variable.	Interval	Quantitative	Parametric	Pearson's Correlation and Linear Regression



Objective	Variables	Indicators	Measurement	Measuring Scale	Research Approach	Type of Statistical Analysis	Tool of Analysis
		Stakeholder analysis and performance of community based projects	Open-ended questions	n/a	Qualitative	Non-Parametric	Descriptive Analysis
3. To examine how application of problem tree analysis influences performance of community based projects in Bungoma County.	Independent Variable: Problem Tree Analysis	<ul style="list-style-type: none"> <li>Identified Problems</li> <li>Root Causes</li> <li>Effects</li> </ul>	A composite index was obtained by calculating the average of the total sum of the responses of each respondent measuring this variable.	Interval	Quantitative	Parametric	Pearson's Correlation and Linear Regression
		Problem tree analysis and performance of community based projects	Open-ended questions	N/a	Qualitative	Non-Parametric	Descriptive Analysis
4. To establish the extent to which application of Gantt charts influence performance of community based projects in Bungoma County.	Independent Variable: Gantt Chart	<ul style="list-style-type: none"> <li>Resources</li> <li>Work accomplished</li> <li>Time taken</li> </ul>	A composite index was obtained by calculating the average of the total sum of the responses of each respondent measuring this variable.	Interval	Quantitative	Parametric	Pearson's Correlation and Linear Regression
		Gantt chart and performance of community based projects	Open-ended questions	n/a	Qualitative	Non-Parametric	Descriptive Analysis
5. To examine extent to which combined influence of application of project design tools on performance of community based projects in Bungoma County.	Independent Variable: Combined Project Design Tools	<ul style="list-style-type: none"> <li>Logical Framework</li> <li>Stakeholder Analysis</li> <li>Problem Tree Analysis</li> <li>Gantt Chart</li> </ul>	A composite index was obtained by calculating the average of the total sum of the responses of each respondent measuring this variable.	Interval	Quantitative	Parametric	Multiple Regression
6. To establish the extent to which the project manager's competencies influence the relationship between application	Moderating Variable: Project	<ul style="list-style-type: none"> <li>Resource mobilization</li> <li>Team Management</li> <li>Technical competence</li> </ul>	A composite index was obtained by calculating the average of the total sum of the responses of each	Interval	Quantitative	Parametric	Multiple Regression

Objective	Variables	Indicators	Measurement	Measuring Scale	Research Approach	Type of Statistical Analysis	Tool of Analysis
of project design tools and performance of community based projects in Bungoma County.	Manager`s Competencies		respondent measuring this variable.				
		Project managers` competencies, project design tools and performance of community based projects.	Open-ended questions	n/a	Qualitative	Non-Parametric	Descriptive Analysis

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION**

#### **4.1 Introduction**

This chapter consists of data analysis, presentation, interpretation and discussion on the study objectives. These objectives include: to establish how application of logical framework influences performance of community based projects in Bungoma County, to assess the extent to which application of stakeholder analysis influences performance of community based projects in Bungoma County and to examine how application of problem tree analysis influences performance of community based projects in Bungoma County. The other objectives included: to establish the extent to which application of Gantt charts influence performance of community based projects in Bungoma County; to examine extent to which combined application of project design tools influence performance of community based projects in Bungoma County and to establish the extent to which the project manager`s competencies influence the relationship between application of project design tools and performance of community based projects in Bungoma County.

#### **4.2 Response Rate**

Questionnaires were administered on the 128 employees of community based projects excluding the project managers who participated in this study through the interview guide. The study results indicate that 103 of these were returned representing a response rate of 80.47 per cent. This response rate was sufficient and representative of the true population. This is in line with Mugenda and Mugenda (2012) who postulated that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good, while a response rate of 70% and above is excellent. Therefore the response rate of 80.47% was considered reasonable for further analysis. In addition to the questionnaires, the researcher sought information from 15 project managers using the interview guide. However, out of the 15 project managers targeted in this study only 12 were interviewed as three were not available during the data collection period.

### 4.3 Demographic Information

The demographic characteristics of the respondents which were considered in this study included age, gender, age, highest level of education and level of experience in years.

The findings are summarized in Tables 4.1 to 4.5.

#### 4.3.1 Distribution of the Respondents by Sector

The respondents were requested to indicate their sector in which their organization was carrying operations. This is illustrated in Table 4.1

**Table 4.1 Sector of the Staff Respondents**

<b>Sector</b>	<b>Frequency</b>	<b>Percentage</b>
a) Education	27	26.2
b) Agriculture	16	15.5
c) Health	20	19.4
d) Culture and Social Services	12	11.7
e) Trade	18	17.5
f) Forestry and Natural Resources	10	9.7
<b>Total</b>	<b>103</b>	<b>100.0</b>

On the sector of the respondents, the research results in Table 4.1 indicate that 27(26.2%) of the respondents were from the education sector; 16(15.5%) were from the agriculture sector, 20(19.4%) were from health sector while 12(11.7%) were from culture and social services. The research findings show that 18(17.5%) were from the trade sector, and 10(9.7%) were from the forestry and natural resources sector. These findings show that highest number of the projects being undertaken for the purpose of this study were from the education sector. Therefore, one could imply that Bungoma County is benefiting most in education as a result of the community based projects being undertaken, especially those applying project design tools.

Those interviewed were asked the sector which they were operating in. The results are as shown in Table 4.2

**Table 4.2: Sector of the Project Manager Respondents**

<b>Sector</b>	<b>Frequency</b>	<b>Percentage</b>
Education	4	33.3
Agriculture	2	16.7
Health	2	16.7
Culture and Social Services	2	16.7
Trade	1	8.3
Forestry and Natural Resources	1	8.3
<b>Total</b>	<b>12</b>	<b>100.0</b>

As shown in Table 4.2, those interviewed in this study majority were from the education sector representing 33.3% followed by those in the sectors of agriculture, health and culture and social services represented by 16.7% each. These findings can be deduced to mean that majority of the participants in this study were from the education sector.

#### **4.3.2 Distribution of the Respondents by Gender**

The respondents were required to indicate their gender. This is illustrated in Table 4.3.

**Table 4.3: Gender of the Respondent**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Male</b>	<b>56</b>	<b>54.4</b>
<b>Female</b>	<b>47</b>	<b>45.6</b>
<b>Total</b>	<b>103</b>	<b>100.0</b>

On gender, the findings indicate in Table 4.3 show that the majority, 56 (54.4%), of respondents working for community based projects were male while 47(45.6%) of the participants were female. These findings show that most of the operations of community based

projects are undertaken by males. However, women are also fairly well represented as per the study.

According to the study results those who participated in the interview, majority were female representing 63% while male interviewees were 37%. From the results most of the project managers interviewed in Bungoma County were female meaning there is female gender dominance among the leadership of the projects operating in the county.

### 4.3.3 Distribution of the Respondents by Age

The respondents were requested to indicate their age. This is illustrated in Table 4.4.

**Table 4.4: Age of the Respondent**

<b>Age in Years</b>	<b>Frequency</b>	<b>Percentage</b>
a) Below 26	7	6.8
b) 26-30	19	18.4
c) 31-35	28	27.2
d) 36-40	16	15.5
e) 41-45	7	6.8
f) 46-50	19	18.4
g) 51-above	7	6.8
<b>Total</b>	<b>103</b>	<b>100.0</b>

On the age of respondents, the research results as indicated in Table 4.4 shows that 7(6.8%) of the employees interviewed were below 26 years, 19(18.4%) were between 26 and 30 years, 28(27.2%) were between 31 and 35 years, and 16(15.5%) were between 36 and 40 years. The research findings also indicate that 7(6.8%) of the respondents were between 41-45 years, 19(18.4%) were between 46 and 50 years and 7(6.8%) were 51 years and above. These findings show that the majority of the respondents were over 31 years and hence experienced in their work. Accordingly, it would be expected that the roles undertaken by these employees were intended to achieve the goals and objectives of the projects.

Results from the interview indicated that most of the participants were from the age category of 41-45 years representing 7(58.4%), those in the age group 36-40 were 3(25%), those in the age category of 46-50 1(8.3%) and those over 51 years were 1(8.3%). These findings show that majority of the managers interviewed were in the active working age of over 35 years. It was therefore safe to conclude that the project managers chosen had the experience required to run the projects and therefore well placed to provide the relevant information in relation to the study objectives.

#### 4.3.4 Distribution of the Respondents by Level of Education

The respondents were required to indicate their level of education. This is illustrated in Table 4.5.

**Table 4.5: Highest level of education**

Level of Education	Frequency	Percentage
a) Secondary	7	6.8
b) Certificate	13	12.6
c) Diploma	35	34.0
d) Bachelors Degree	36	35.0
e) Masters	10	9.7
f) PhD	2	1.9
<b>Total</b>	<b>103</b>	<b>100.0</b>

On the level of education, the study results as indicated in Table 4.5 show that 36(35.0%) of the employees had bachelor's degree, 35(34.0%) had Diploma and 13(12.6%) had Certificates. These findings showed that the majority of the staff in the community based projects hold Bachelor's degree level qualification and could therefore comfortably be presumed to be adequately qualified to undertake duties and responsibilities allocated. This would imply that improved performance of community based projects was expected to be achieved both in the short and long term.

The researcher sought to establish the highest level of education among the project managers. The results showed that 2(16.7%) were PhD holders, 4(33.3%) were master's degree holders, 5(41.7%) were bachelor's degree holders while 1(8.3%) had diploma certificate. These results indicated that most of the project managers interviewed had at least a bachelor's degree. This could imply that they had adequate skills necessary to perform their duties and responsibilities as the project managers.

#### 4.3.5 Distribution of the Respondents by Level of Experience

The respondents were requested to indicate their level of experience within the organisations they were serving in. This is illustrated in Table 4.6.

**Table 4.6: Level of Work Experience**

Work Experience	Frequency	Percentage
Less than one year	9	8.7
1-4 years	10	9.7
5-9 years	47	45.6
10-14 years	20	19.4
above 15 years	17	16.5
<b>Total</b>	<b>103</b>	<b>100.0</b>

In terms of work experience, it was found out that 9(8.7%) of the employees had less than one year work experience, 10(9.7%) had 1-4 years, 47(45.6%) had 5-9 years, 20(19.4%) had 10-14 years and 17(16.5%) had more than 15 years' work experience. Thus, most of the employees interviewed had more than 5 years working experience and were therefore expected to make use of their long experience to ensure high projects outcomes.

For the project managers interviewed, it was found out that majority of them had worked in their organization for a period of 5-9 years 5(41.7%) followed by those who had worked for a period between 10-14 years at 4(33.3%). The findings further established that 2(16.7%) had worked for a period above 15 years while those who had worked for a period of 1-4 years were



only 1(8.3%). The findings show that most of the participants interviewed had worked for a long period in their organization and were therefore expected to be more enlightened on matters to do with project management and application of design tools.

#### **4.3.6 Tests for Normality**

Shapiro and Wilk were among the first statisticians to introduce a new statistical procedure for testing a complete sample for normality (Creswell, 2013). The importance of normal distribution is undeniable. Razali and Wah (2011) argue that this test is an underlying assumption of many statistical procedures such as t-tests, linear regression analysis, discriminant analysis, and analysis of variance. When the normality assumption is violated, interpretation and inferences may not be reliable or valid. The three common procedures used in assessing whether a random sample of independent observations comes from a population with a normal distribution are graphical methods for instance histograms, boxplots, Quantile-Quantile plots and numerical methods which include skewness and kurtosis indices as well as and formal normality tests (Mugenda & Mugenda, 2012). The four formal tests of normality are Shapiro-Wilk test, Kolmogorov-Smirnov test, Lilliefors test, and Anderson-Darling test. The Shapiro-Wilk test is the most powerful normality followed by Anderson-Darling test, Lilliefors test, and Kolmogorov-Smirnov test. However, the power of all four tests is still low for small sample sizes(Creswell, 2013). In this study, the Kolmogorov-Smirnov test (KS-test) and Shapiro-Wilk test (SW-test) were carried out to ascertain whether the research data was collected from a normal population.

The normal distribution is the most widely used family of statistical distributions on which many statistical tests are based. Many measurements of physical and psychological phenomena can be approximated by the normal distribution and, hence, the widespread utility of the distribution (Mugenda & Mugenda, 2012). In many areas of research, a sample is identified on which measurements of particular phenomena are made. These measurements are then statistically tested, via hypothesis testing, to determine whether the observations are different because of chance. Assuming the test is valid, an inference can be made about the population from which the sample is drawn (Loncoln, 2005).

Hypothesis testing involves assumptions about the underlying distribution of the sample data. Three key assumptions, in order of importance, are independence, common variance and normality (Creswell, 2013). The term normality assumption arises when the researcher asserts that the distribution of the data follows a normal distribution. Parametric and nonparametric tests are commonly based on the same assumptions, with the exception being that the nonparametric tests do not require the normality assumption to perform a statistical analysis (Burke, 2013). The commonly used tests for normality are Kolmogorov-Smirnov test, Anderson-Darling test, and Shapiro-Wilk test. Shapiro-Wilk test is more appropriate for small sample sizes (less than 50 samples). If the p-value of the Shapiro-Wilk test is greater than 0.05, then the data is normal. If it is below 0.05 then the data significantly deviate from the normal distribution. The results of the Kolmogorov-Smirnov test and Shapiro-Wilk test are shown in Table 4.7

The study findings in Table 4.7 show that all the variables tested in this study namely: performance of community based projects, application of logical framework, application of stakeholder analysis, application of problem tree analysis, application of Gantt chart and managers` competencies are skewed. This is confirmed by Wilson (2010) who contends that most variables, especially in the social sciences, are not normally distributed. The central limit theorem states that as the sample size increases, the sample mean will be normally distributed for most underlying distributions and hypothesis tests are robust against the violation of normality. A sample size of 30 or more is considered a large sample. A sample of size 47 was considered in this study. As argued by Hair (2010), if absolute values of skewness and kurtosis are less than 1, normality can be assumed even if the p-value in the Shapiro-Wilk test is less than 0.05. In this study, the absolute values of skewness and kurtosis were less than 1 and hence normality can be assumed.

**Table 4.7: Results of Kolmogorov-Smirnov and Shapiro-Wilk Tests**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Performance of community based projects	.539	103	.000	.248	103	.000
Application of logical framework	.539	103	.000	.248	103	.000
Application of stakeholder analysis	.540	103	.000	.221	103	.000
Application of problem tree analysis	.540	103	.000	.221	103	.000
Application of Gantt charts	.540	103	.000	.191	103	.000
Managers' competencies	.540	103	.000	.221	103	.000

#### 4.3.7 Tests for Multicollinearity

In this study, the variables were subjected to multicollinearity tests. Multicollinearity is a phenomenon in which one predictor variable in a multiple regression model can be linearly predicted from the others with a substantial degree of accuracy (Hill, 2015). In this situation the coefficient estimates of the multiple regressions may change erratically in response to small changes in the model or the data. Multicollinearity does not reduce the predictive power or reliability of the model as a whole, at least within the sample data set; it only affects calculations regarding individual predictors. In other words, one predictor variable can be used to predict the other. This creates redundant information, skewing the results in a regression mode. The value of 0.9 is the threshold beyond which problems are likely to occur.

Multicollinearity exists when two or more of the predictors in a regression model are moderately or highly correlated. Unfortunately, when it exists, it can wreak havoc on analysis

and thereby limit the research conclusions one can draw. When multicollinearity exists, any of the following pitfalls can be exacerbated: the estimated regression coefficient of any one variable depends on which other predictors are included in the model and the precision of the estimated regression coefficients decreases as more predictors are added to the model. At the same time, the marginal contribution of any one predictor variable in reducing the error sum of squares depends on which other predictors are already in the model. Also, hypothesis tests for  $\beta_k = 0$  may yield different conclusions depending on which predictors are in the model (Creswell, 2013).

Multicollinearity refers to a situation where a number of independent variables in a multiple regression model are closely correlated to one another. Multicollinearity can lead to skewed or misleading results when a researcher or analyst is attempting to determine how well each one of a number of individual independent variables can most effectively be utilized to predict or understand the dependent variable in a statistical model. In general, multicollinearity can lead to wider confidence intervals and less reliable probability values (P values) for the independent variables (Corbett, 2003).

Statistical analysts use multiple regression models to predict the value of a specified dependent variable based on the values of two or more independent variables. The dependent variable is also sometimes referred to as the outcome, target or criterion variable. Multicollinearity in a multiple regression model indicates that the collinear independent variables are related in some fashion, although the relationship may or may not be causal (Creswell, 2013).

Partial multicollinearity occurs when two or more explanatory variables overlap, such that they are correlated with each other in a sample, but still contain independent variation. This condition limits the extent to which analysis can distinguish their causal importance, but does not violate any assumptions required for regression. Wilson (2010) maintains that multicollinearity is a problem that arises if some or all of the explanatory variables are highly correlated with one another. If it is present, the regression model has difficulty telling which explanatory variable(s) is/are influencing the dependent variables. A multicollinearity problem reveals itself through low t-statistics and therefore high P-values. In these cases, one may conclude that coefficients are insignificant and hence should be dropped from the regression. In an extreme case, it is possible for one to find all the coefficients are insignificant using t-

statistics, while the  $R^2$  is quite large and significant. Intuitively, this means that the explanatory variables together provide a great deal of explanatory power, but that multicollinearity makes it impossible for the regression to decide which particular explanatory variable(s) are providing the explanation (Mugenda & Mugenda, 2012). There is not too much that can be done to correct this problem other than to drop out some of the highly correlated variables from the regression.

Multicollinearity is an unacceptably high level of intercorrelation among the independents, such that the effects of the independents cannot be separated (Hill, 2015). Under multicollinearity, estimates are unbiased but assessments of the relative strength of the explanatory variables and their joint effect are unreliable. Intercorrelation among the independents above 0.30 signals a possible problem. The correlations of variables are shown in Table 4.8. The research findings in Table 4.8 indicate that all values of correlation coefficients fall below the threshold value of 0.8 which suggested that there was no multicollinearity in the study variables. The bi-variate correlation statistics for all the independent variables with themselves ranges from as low as 0.045 to a high of 0.188. The bivariate correlation between application of problem tree and application of stakeholder analysis is  $r=-0.045$  depicting a weak negative relationship which is the lowest. On the other hand a bi-variate correlation statistic between application of gantt chart and application of problem tree analysis is  $r=0.188$  depicting a weak positive relationship. These correlation values between the predictor variables fall below the minimum threshold of 0.8 as advanced by Creswell (2013) therefore depicts a little or no presence of multicollinearity

**Table 4.8: Correlations of Variables**

*Pearson Correlation Matrix*

	Performance of community based projects	Application of logical framework	Application of stakeholder analysis	Application of problem tree analysis	Application of Gantt charts	Managers competencies
Performance of community based projects	1	0.115*	0.56**	-0.5**	0.637**	0.56**
Application of logical framework	0.115*	1	0.137	-0.05	0.137	0.137
Application of stakeholder analysis	0.56**	0.137	1	-0.045	-0.051	0.159
Application of problem tree analysis	-0.5**	-0.05	-0.045	1	0.188	-0.045
Application of Gantt charts	0.637**	0.137	-0.051	0.188	1	-0.051
Managers competencies	0.56	0.137	0.159	-0.045	-0.051	1

\*\*Correlation significant at 0.01 level (2 tailed)

\*Correlation significant at 0.05 level (2 tailed)

The results from Table 4.8 above indicate that correlation statistics between application of logical framework and stakeholder analysis is 0.137. Further the level of association between other predictor variables were all less than 0.2 indicating that the strength of the relationship is weak. This signifies that the little association between the independent variables and thus existence of low levels of multicollinearity.

The collinearity statistics are shown in Table 4.9

**Table 4.9: Collinearity Statistics**

	Tolerance	VIF
Application of Logical framework	0.941	1.063
Application of Stakeholder analysis	0.957	1.045
Application of Problem Tree Analysis	0.957	1.045
Application of Gantt Charts	0.958	1.044
Managers Competencies	0.936	1.068

a. Dependent Variable: Performance of community based projects

The variables of the study were further subjected to multicollinearity testing using Variance Inflation Factor (VIF) and Tolerance Tests in regression analysis. The values of Variance Inflation Factor (VIF) ranged from 1.044 to 1.068 which are less than the threshold of 10. The tolerance value was between 0.936 and 0.958 which was greater than the threshold of 0.1 and hence there was no multicollinearity.

#### **4.3.8 Likert-Type Data**

The Likert Scale is essentially a multiple-indicator or multiple-item measure of a set of attitudes relating to a particular area (Creswell, 2013). The goal of the Likert scale is to measure intensity of feelings about the area in question. In its most common format, it comprises a series of statements (known as ‘items’) that focus on a certain issue or theme. Each respondent is then asked to indicate his or her level of agreement with the statement. Usually, the format for indicating level of agreement is a five-point scale going from ‘strongly agree’ to ‘strongly disagree’, but a seven-point scale and other formats are used too. There is usually a middle position of ‘neither agree nor disagree’ or ‘undecided’, indicating neutrality on the issue. Each respondent’s reply on each item is scored, and then the scores for each item are aggregated to form an overall score. Normally, since the scale measures intensity, the scoring is carried out

so that a high level of intensity of feelings in connection with each indicator receives a high score for example, on a five-point scale, a score of 5 for very strong positive feelings about an issue and a score of 1 for very negative feelings. In this study six sections of the research questionnaire had items in a Likert-type scale format with five points.

Burke (2013) postulates that Likert-type data are often assumed by applied researchers to be equidistant so that they can use parametric methods to analyse the data. Collins (2014) contend that if one is using a 5 to 7-point Likert response format, and particularly so for items that resemble a Likert-like scale and factorially hold together as a scale or subscale reasonably well, then it is perfectly acceptable and correct to analyse the results at the (measurement) scale level using parametric analyses techniques such as the F-Ratio or the Pearson correlation coefficients or its extensions (for example multiple regression), and the results of these analyses should and will be interpretable as well. The mentioned scales give an equidistance of 0.8. The above scale was used successfully by Ibrahim (2017).

#### **4.3.9 Likert Scale**

In this study the following Likert Scale was used: 1=Strongly Disagree (SD); 2=Disagree (D); 3=Neither Agree Nor Disagree (NAD); 4=Agree (A) and 5=Strongly Agree (SA). Wuensch (2005) defines a Likert scale as the sum of responses on several Likert items. Because many Likert scales pair each constituent Likert item with its own instance of a visual analogue scale an individual item is itself sometimes erroneously referred to as a scale, with this error creating pervasive confusion in the literature and parlance of the field. A Likert item is simply a statement that the respondent is asked to evaluate by giving it a quantitative value on any kind of subjective or objective dimension, with level of agreement/disagreement being the dimension most commonly used. After assigning the numerical values to the different possible responses, the score for each individual was determined by finding the average or sum of the numerical values of the alternatives that the individual checked. If five alternatives have been used, it is necessary to assign values of 1 to 5 with 3 assigned to the undecided position on each statement. The value 1 is assigned to one extreme end of the attitude continuum and the value 5 is assigned to the other extreme end. This was done consistently for each of the statements expected to be included in the scale.



#### 4.4 Performance of Community Based Projects

This section presents data analysis and findings on the indicators of performance of community based projects which is the dependent variable in this study. The indicators are completion of projects within budget, completion of projects within schedule and project continuity after donor fund.

##### 4.4.1 Projects Completion within Budget

Completion within budget was measured by providing respondents with statements rated on a five-point Likert scale from which to choose. The scale was: Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.10.

**Table 4.10: Completion within Budget**

Statements	<b>SD</b>	<b>D</b>	<b>NAD</b>	<b>A</b>	<b>SA</b>	<b>Mean</b>	<b>SDV</b>	<b>Total</b>
	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>			<b>F</b>
	(%)	(%)	(%)	(%)	(%)			(%)
Our organization focuses on the amount of budget spent on project	4(3.9)	3(2.9)	3(2.9)	10(9.7)	83(80.6)	4.6019	0.97357	103(100)
Tasks completed within budget	2(1.9)	4(3.9)	2(1.9)	8(7.8)	87(84.5)	4.6893	0.85209	103(100)
Team members participate in budget making process	3(2.9)	1(1.0)	6(5.8)	23(22.3)	70(68.0)	4.5146	0.88411	103(100)
Approved budgets guide expenditure on project activities	5(4.9)	0(0)	4(3.9)	12(11.7)	82(79.6)	4.6117	0.95212	103(100)
Minimum project variations	1(1.0)	2(1.9)	2(1.9)	15(14.6)	83(80.6)	4.7184	0.69193	103(100)
<b>Composite for Completion within Budget</b>						<b>4.62718</b>	<b>0.870764</b>	

The results in Table 4.10 show that 83(80.6%) of the respondents strongly agreed that their organization focuses on the amount of budget spent on project; 10(9.7%) of the respondents agreed that their organization focuses on the amount of budget spent on project, 3(2.9%) of the respondents neither agreed nor disagreed that their organization focuses on the amount of budget spent on project; 3(2.9%) of the respondents disagreed that their organization focuses

on the amount of budget spent on project and 4(3.9%) of the respondents strongly disagreed that their organization focuses on the amount of budget spent on project. Further, 87(84.5%) strongly agreed that tasks completed within budget; 8(7.8%) agreed that tasks were completed within budget, 2(1.9%) neither agreed nor disagreed that tasks were completed within budget. Also 4(3.9%) of the respondents disagreed that tasks were completed within budget while 2(1.9%) of them strongly disagreed that tasks were completed within budget.

As shown from the results 70(68.0%) of the respondents strongly agreed that team members participate in budget making process; 23(22.3%) of the respondents agreed that team members participate in budget making process; 6(5.8%) of the respondents neither agreed nor disagreed that team members participate in budget making process; 1(1.0%) of the respondents disagreed that team members participate in budget making process and 3(2.9%) of the respondents strongly disagreed that team members participate in budget making process. From the results 82(79.6%) strongly agreed that approved budgets guide expenditure on project activities; 12(11.7%) agreed that approved budgets guide expenditure on project activities; 4(3.9%) neither agreed nor disagreed that approved budgets guide expenditure on project activities, 0(0%) disagreed that their organization approved budgets guide expenditure on project activities, and 5(4.9%) strongly disagreed that approved budgets guide expenditure on project activities. The research findings indicate that 83(80.6%) of the respondents strongly agreed that there were minimum project variations; 15(14.6%) agreed that there were minimum project variations; 2(1.9%) neither agreed nor disagreed that there were minimum project variations; 2(1.9%) disagreed that there were minimum project variations, and 1(1.0%) strongly disagreed that there were minimum project variations. The study results indicate that project completion within budget influence performance of community based projects. This implies that completion of projects within budget is very important in the performance of community based projects. Hence, those in charge need to ensure projects are completed within the set budgets.

The research findings show that respondents strongly agreed ( $M=4.60$ ,  $SDV=0.97$ ) that their organization focuses on the amount of budget spent on project. They also agreed ( $M=4.69$ ,  $SD=0.85$ ) that tasks are completed within budget. Respondents strongly agreed ( $M=4.51$ ,  $SDV=0.88$ ) that team members participate in budget making process. The participants strongly agreed ( $M=4.61$ ,  $SDV=0.95$ ) that approved budgets guide expenditure on project activities;

and, they agreed (M=4.72 SDV=0.69 that there were minimum project variations. Overall, the surveyed employees agreed (M=4.63, SDV=0.87) that project completion within budget influences community based projects performance. This implies that availability of funds is very important in performance of community based projects since the budget depends on availability of funds.

#### 4.4.2 Project Completion on Schedule

Completion within schedule was measured by providing respondents with statements rated on a five-point Likert scale from which to choose. The scale was: Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.11.

**Table 4.11: Project Completion on Schedule**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F	F	F	F	F			F
	(%)	(%)	(%)	(%)	(%)			(%)
Project delivery timelines are observed	1(1.0)	2(1.9)	7(6.8)	6(5.8)	87(84.5)	4.7087	0.76223	103(100)
We experienced project delays	4(3.9)	2(1.9)	3(2.9)	5(4.9)	89(86.4)	4.6796	0.93109	103(100)
Scheduled tasks are undertaken	1(1.0)	3(2.9)	1(1.0)	4(3.9)	94(91.3)	4.8155	0.68238	103(100)
Creation of detailed schedule is done prior to project commencement	3(2.9)	3(2.9)	3(2.9)	1(1.0)	93(90.3)	4.7282	0.88776	103(100)
Creation of detailed forecast is done at the start of project activities	4(3.9)	1(1.0)	5(4.9)	4(3.9)	89(86.4)	4.6796	0.92050	103(100)
<b>Composite for Completion within Schedule</b>						<b>4.72232</b>	<b>0.836792</b>	

The results in Table 4.11 show that 87(84.5%) of the respondents strongly agreed that project delivery timelines are observed; 6(5.8%) of the respondents agreed that project delivery timelines are observed, 7(6.8%) of the respondents neither agreed nor disagreed that project delivery timelines are observed; 2(1.9%) of the respondents disagreed project delivery timelines are observed; and 1(1.0%) of the respondents strongly disagreed that project delivery timelines are observed. Further, 89(86.4%) strongly agreed that they experienced project delays, 5(4.9%) agreed that they experienced project delays; 3(2.9%) neither agreed nor disagreed that they experienced project delays, 2(1.9%) disagreed that they experienced project delays, and 4(3.9%) strongly disagreed that they experienced project delays. As shown from the findings 94(91.3%) of the respondents strongly agreed that scheduled tasks are undertaken, 4(3.9%) of the respondents agreed that scheduled tasks are undertaken; 1(1.0%) of the respondents neither agreed nor disagreed that scheduled tasks are undertaken; 3(2.9%) of the respondents disagreed that scheduled tasks are undertaken, and 1(1.0%) of the respondents strongly disagreed that scheduled tasks are undertaken.

From the results 93(90.3%) strongly agreed that creation of detailed schedule is done prior to project commencement; 1 (1.0%) agreed that creation of detailed schedule is done prior to project commencement; 3(2.9%) neither agreed nor disagreed that creation of detailed schedule is done prior to project commencement; 3(2.9%) disagreed that creation of detailed schedule is done prior to project commencement; and 3(2.9%) strongly disagreed that creation of detailed schedule is done prior to project commencement. The research results indicate that 89(86.4%) strongly agreed that creation of detailed forecast is done at the start of project activities; 4(3.9%) agreed that creation of detailed forecast is done at the start of project activities, 5(4.9%) neither agreed nor disagreed that creation of detailed forecast is done at the start of project activities; 1(1.0%) disagreed that creation of detailed forecast is done at the start of project activities; and 4(3.9%) strongly disagreed that creation of detailed forecast is done at the start of project activities. The study results indicate that project completion on schedule influence performance of community based projects. The parameter that has more influence in the performance of community based projects is that some activities in the schedule were not properly sequenced. In community based projects, it is very important to properly sequence activities so as to complete the project on schedule.

The research results show that respondents strongly agreed (M=4.71, SDV=0.76) that project delivery timelines are observed. They also agreed (M=4.68, SD=0.93) that they experience project delays. Respondents strongly agreed (M=4.82, SDV=0.68) that scheduled tasks are undertaken. The participants strongly agreed (M=4.73, SDV=0.89) that creation of detailed schedule is done prior to project commencement, they agreed (M=4.68 SDV=0.92) that creation of detailed forecast is done at the start of project activities. Overall, the surveyed employees agreed (M=4.72, SDV=0.84) that project completion within schedule influence community based projects performance. This implies that proper sequencing of project activities is very important in performance of community based projects because properly sequenced activities will lead to completion of the project on schedule.

#### **4.4.3 Project Continuity after Donor Funding**

Project continuity after donor funding was measured by providing respondents with statements rated on a five-point Likert scale from which to choose. The scale was: Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.12.

**Table 4.12: Project Continuity after Donor Funding**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F	F	F	F	F			F
	(%)	(%)	(%)	(%)	(%)			(%)
Financial sustainability is achieved	2(1.9)	2(1.9)	16(15.5)	10(9.7)	73(70.9)	4.4563	0.95770	103(100)
Organization sustainability is achieved	1 (1.0)	1(1.0)	1(1.0)	3(2.9)	97(94.2)	4.8835	0.54774	103(100)
Project stalled for lack of funding	2(1.9)	1(1.0)	1(1.0)	8(7.8)	91(88.3)	4.7961	0.69111	103(100)
Project continued after donor funding	6(5.8)	1(1.0)	2(1.9)	6(5.8)	88(85.4)	4.6408	1.01802	103(100)
Beneficiary feedback are considered in our organization	1(1.0)	1(1.0)	2(1.9)	2(1.9)	97(94.2)	4.8738	0.57188	103(100)
<b>Composite for Project Continuity after Donor Funding</b>						<b>4.7301</b>	<b>0.75729</b>	

The results in Table 4.12 show that 73(70.9%) of the respondents strongly agreed that financial sustainability is achieved; 10(9.7%) of the respondents agreed that financial sustainability is achieved; 16(15.5%) of the respondents neither agreed nor disagreed that financial sustainability is achieved; 2(1.9%) of the respondents disagreed financial sustainability is achieved, and 2(1.9%) of the respondents strongly disagreed that financial sustainability is achieved. Further, 97(86.4%) strongly agreed that organization sustainability is achieved; 3(2.9%) agreed that organization sustainability is achieved; 1(1.0%) neither agreed nor disagreed that organization sustainability is achieved; 1(1.0%) disagreed that organization

sustainability is achieved, and 1(1.0%) strongly disagreed that organization sustainability is achieved.

The findings further indicate that 91(88.3%) of the respondents strongly agreed that project stalled for lack of funding; 8(7.8%) of the respondents agreed that project stalled for lack of funding; 1(1.0%) of the respondents neither agreed nor disagreed that project stalled for lack of funding; 1(1.0%) of the respondents disagreed that project stalled for lack of funding, and 2(1.9%) of the respondents strongly disagreed that project stalled for lack of funding. From the results 88(85.4%) strongly agreed that project continued after donor funding; 6(5.8%) agreed that project continued after donor funding, 2(1.9%) neither agreed nor disagreed that project continued after donor funding; 1(2.9%) disagreed that project continued after donor funding, and 6(5.8%) strongly disagreed that project continued after donor funding. The research findings indicate that 97(94.2%) strongly agreed that beneficiary feedback are considered in their organization, 2(1.9%) agreed that beneficiary feedback are considered in their organization, 2(1.9%) neither agreed nor disagreed that beneficiary feedback are considered in their organization; 1(1.0%) disagreed beneficiary feedbacks are considered in their organization and 1(1.0%) strongly disagreed that beneficiary feedbacks are considered in their organization. The study results indicate that project continuity after donor funding influences performance of community based projects.

The research findings show that respondents strongly agreed ( $M=4.46$ ,  $SDV=0.96$ ) that financial sustainability is achieved. They also agreed ( $M=4.88$ ,  $SD=0.55$ ) that organization sustainability is achieved. Respondents strongly agreed ( $M=4.80$ ,  $SDV=0.69$ ) that project stalled for lack of funding. The participants strongly agreed ( $M=4.64$ ,  $SDV=1.02$ ) that project continued after donor funding; they agreed ( $M=4.87$   $SDV=0.57$ ) that beneficiary feedbacks are considered in their organization. Overall, the surveyed employees agreed ( $M=4.73$ ,  $SDV=0.76$ ) that project continuity after donor funding influences community based projects performance. In community based projects, it is very important to have financial plans in place to cover for donor funding withdrawal.

#### **4.4.4 Overall Descriptive Analysis on Performance of Community Based Projects**

The overall findings for performance of community based projects are shown in Table 4.13. The following were considered under performance of community based projects: project

completion within budget, project completion within schedule and project continuity after donor funding.

**Table 4.13: Means and Standard Deviations for Performance of CBP**

<b>Components of Performance of Community Based Projects</b>	<b>n</b>	<b>Mean</b>	<b>SDV</b>
Project Completion within Budget	103	4.62718	0.870764
Project Completion within Schedule	103	4.72232	0.836792
Project continuity after donor funding	103	4.7301	0.75729
<b>Overall Performance of Community Based Projects</b>		<b>4.6932</b>	<b>0.82161</b>

The research findings in Table 4.13 show that the overall mean for performance of community based projects was 4.6932 and the standard deviation was 0.82. The most dominant indicator was project continuity after donor funding (M=4.73, SDV=0.76), followed by project completion within schedule (M=4.72, SDV=0.64) and project completion within budget (M=4.63, SDV=0.87). This implies that project continuity after donor funding is very important in performance of community based projects because continuity of projects in the community goals sought to be achieved in the long run will not be achieved.

The study sought to find out from the employees the challenges they faced at the work place in relation to achieving project performance. Most of the employees felt that achieving project performance was not an easy task. When asked some of the challenges that they faced in achieving project performance one employee said that,

*“ A lack of trust among the stakeholders owing to the fact that in projects tensions run high at some point and the conflict or a difference of opinion, not sharing information which affects project team members bringing a unique set of skills, knowledge, experience and wisdom were some of the challenges faced in achieving project performance.”*



Another employee alluded that,

*“There was low engagement through a lack of involvement, lack of transparency which is becoming the presumed norm in project and programme management and no long-term thinking whereby project managers do not get beyond day-to-day urgencies, poor change management.”*

The respondents were expected to explain how completion within budget, schedule and after donor funding influence performance of community based projects. The following are the responses from some employees:

According to one of the respondents,

*“Project performance measurement should include at least two of following completion within budget, schedule and after donor funding. Through this there are new improvement programmes and initiatives at various stages of a project life-cycle which enhance community project performance.”*

Some of the influences that were stated by one employee in relation to completion within budget, schedule and after donor funding were,

*“Since the goals are set clearly such aspects as local networks of CBPs, leadership, client characteristics, staff and strategy have an influence on the success of their programs. Completion within budget, schedule and after donor funding influence performance of community based projects since project performance touches on the ability of workers to finish the jobs and are responsible for and how those jobs help in achieving the goals of the organization.”*

The respondents argued that completion within budget, schedule and after donor funding influence performance of community based projects, since this leads to proper planning, improvement project management, adequate project experience and adequate finance and this leads to improved communication between parties thus avoiding cost overrun and avoidable delays.

The findings of this study on performance of community based projects are in tandem with the findings of Mkutu (2011) who observed that for the projects to perform well there is need for closer collaboration of the project implementers and the community. This will aim at ensuring

that there is a shared common interest in the implementation of the project outcomes in the communities which eventually leads to project completion within schedule and budget. The findings also further sit well with those of Chimwaso (2005) which asserted that it is paramount for project managers to identify early enough during the design stage, the activities that can lead to project delays, disruptions and eventual cost overruns. This has a tendency of ensuring that project implementation process then becomes smooth and continuous leading to completion within schedule and budgets.

The study findings finally on the performance of community based projects are also comparable to those of Zachariah (2008) who carried out a study on the sustainability of the donor funded projects on HIV and AIDs. The study recommended that the sustainability of any project should focus beyond the continuous funding of the donor aided projects. This is also a key finding in this research as continuity of the project activities after the end of the donor funding of the community based projects in Bungoma County was a key ingredient of performance as shown by the results above.

#### **4.6 Logical Framework and Performance of Community Based Projects**

The first objective of the study was interested in exploring how output, activities and project objectives influence performance of community based projects in Bungoma County. These are further explained in subsequent sub-themes. The theme of logical framework and performance of community based projects was administered to project managers in community based projects since they were better placed to deal with this theme as they are directly involved in the running of projects. There were 96 project managers who were of interest in this study.

##### **4.6.1 Output and Performance of Community Based Projects**

Output of projects was measured by providing respondents with statements rated on a five point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.14.

**Table 4.14: Output and Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F	F	F	F	F			F
	(%)	(%)	(%)	(%)	(%)			(%)
Our organization achieves project tangible plans on time	6(5.8)	1(1.0)	1(1.0)	8(7.8)	87(84.5)	4.6408	1.00834	103(100)
Our organization considers important cultural events	1(1.0)	1(1.0)	6(5.8)	16(15.5)	79(76.7)	4.6602	.72156	103(100)
We have tracking processes	3(2.9)	1(1.0)	1(1.0)	3(2.9)	95(92.2)	4.8058	.76771	103(100)
Actual output is always measured against planned output	2(1.9)	4(3.9)	1(1.0)	4(3.9)	92(89.3)	4.7476	.82508	103(100)
We have status reports that pertain to planning	1(1.0)	1(1.0)	1(1.0)	15(14.6)	85(82.5)	4.7670	.61363	103(100)
<b>Composite for Output</b>						<b>4.71828</b>	<b>0.787264</b>	

The research results in Table 4.14 show that 87(84.5%) of the respondents strongly agreed that their organization achieves project tangible plans on time, 8(7.8%) of the respondents agreed that their organization achieves project tangible plans on time; 1(1.0%) of the respondents neither agreed nor disagreed that their organization achieves project tangible plans on time; 1(1.0%) of the respondents disagreed that their organization achieves project tangible plans on time; and 1(1.0%) of the respondents strongly disagreed that their organization achieves project tangible plans on time. Further, 79(76.7%) strongly agreed that their organization considers important cultural events; 16(15.5%) agreed that their organization considers

important cultural events; 6(5.8%) neither agreed nor disagreed that their organization considers important cultural events; 1(1.0%) disagreed that their organization considers important cultural events, and 1(1.0%) strongly disagreed that that their organization considers important cultural events. Further, 95(92.2%) strongly agreed that they have tracking processes; 3(2.9%) agreed that they have tracking processes; 1(1.0%) neither agreed nor disagreed that they have tracking processes; 1(1.0%) disagreed that they have tracking processes; and 3(2.9%) strongly disagreed that they have tracking processes.

The research findings show that, 92(89.3%) strongly agreed that actual output is always measured against planned output; 4(3.9%) agreed that actual output is always measured against planned output; 1(1.0%) neither agreed nor disagreed that actual output is always measured against planned output; 4(3.9%) disagreed that actual output is always measured against planned output; and 2(1.9%) strongly disagreed that actual output is always measured against planned output. Further, the research findings show that, 85(82.5%) strongly agreed that they have status reports that pertain to planning; 15(14.6%) agreed that they have status reports that pertain to planning; 1(1.0%) neither agreed nor disagreed that they have status reports that pertain to planning; 1(1.0%) disagreed that they have status reports that pertain to planning; and 1(1.0%) strongly disagreed that they have status reports that pertain to planning. This implies that project output is very important in performance of community based projects because with the right project output performance of the community based projects would not be achieved.

Further findings show that respondents strongly agreed ( $M=4.64$ ,  $SDV=1.01$ ) that organization achieves project tangible plans on time. They also agreed ( $M=4.66$ ,  $SD=0.72$ ) that organization considers important cultural events. Respondents strongly agreed ( $M=4.81$ ,  $SDV=0.77$ ) that they have tracking processes. The participants strongly agreed ( $M=4.75$ ,  $SDV=0.83$ ) that actual output is always measured against planned output and they strongly agreed ( $M=4.77$ ,  $SDV=0.61$ ) that they have status reports that pertain to planning. Overall, the surveyed employees agreed ( $M=4.72$ ,  $SDV=0.79$ ) on the need to establish output in the logical framework. This implies that getting project output is very critical in the performance of community based projects particularly when using the logical framework.

#### 4.6.2 The Influence of Project Activities on Performance of Community Based Projects

The influence of project activities was measured by providing respondents with statements rated on a five-point Likert scale from which to choose. The scale was: Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.15.

**Table 4.15: Project Activities and Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F	F	F	F	F			F
	(%)	(%)	(%)	(%)	(%)			(%)
Project activities are completed in time	5(4.9)	3(2.9)	5(4.9)	4(3.9)	86(83.5)	4.5825	1.05277	103(100)
Some activities in the schedule are not properly sequenced	3(2.9)	1(1.0)	1(1.0)	2(1.9)	96(93.2)	4.8155	.76373	103(100)
Some activities were left out of schedule	1(1.0)	1(1.0)	1(1.0)	2(1.9)	98(95.1)	4.8932	.54074	103(100)
A work breakdown structure was prepared to identify all activities	1(1.0)	2(1.9)	1(1.0)	8(7.8)	91(83.3)	4.8058	.64258	103(100)
Unrealistic durations are assigned to activities	6(5.8)	1(1.0)	2(1.9)	7(6.8)	87(84.5)	4.6311	1.01933	103(100)
<b>Composite for Activities</b>						<b>4.74562</b>	<b>0.803831</b>	

The results in Table 4.15 show that 86(83.5%) of the respondents strongly agreed that project activities are completed in time; 4(3.9%) of the respondents agreed that project activities are completed in time; 5(4.9%) of the respondents neither agreed nor disagreed that project

activities are completed in time; 3(2.9%) of the respondents disagreed project activities are completed in time; and 5(4.9%) of the respondents strongly disagreed that project activities are completed in time. Further, 96(93.2%) strongly agreed that some activities in the schedule are not properly sequenced; 2(1.9%) agreed that some activities in the schedule are not properly sequenced, 1(1.0%) neither agreed nor disagreed that some activities in the schedule are not properly sequenced; 1(1.0%) disagreed that some activities in the schedule are not properly sequenced; and 3(2.9%) strongly disagreed that some activities in the schedule are not properly sequenced.

The findings indicate that 98(95.1%) of the respondents strongly agreed that some activities were left out of schedule; 2(1.9%) of the respondents agreed that some activities were left out of schedule; 1(1.0%) of the respondents neither agreed nor disagreed that some activities were left out of schedule; 1(1.0%) of the respondents disagreed some activities were left out of schedule; and 1(1.0%) of the respondents strongly disagreed that some activities were left out of schedule. Further, 91(83.3%) strongly agreed that a work breakdown structure was prepared to identify all activities; 8(7.8%) agreed that a work breakdown structure was prepared to identify all activities; 1(1.0%) neither agreed nor disagreed that a work breakdown structure was prepared to identify all activities, 2(1.9%) disagreed that a work breakdown structure was prepared to identify all activities, and 1(1.0%) strongly disagreed that a work breakdown structure was prepared to identify all activities. The research findings indicate that 87(84.5%) strongly agreed that unrealistic durations are assigned to activities; 7(6.8%) agreed that unrealistic durations are assigned to activities; 2(1.9%) neither agreed nor disagreed that unrealistic durations are assigned to activities; 1(1.0%) disagreed that unrealistic durations are assigned to activities; and 6(5.8%) strongly disagreed that unrealistic durations are assigned to activities. In logical framework project activities must be identified if the project performance is to be improved. Therefore, identifying project activities is very important in the performance of community based projects since it gives direction on what activities are to be carried out.

The research findings show that respondents strongly agreed at  $M=4.58$  and  $SDV=1.05$  that project activities are completed in time. They also agreed ( $M=4.82$ ,  $SD=0.76$ ) that some activities in the schedule are not properly sequenced. Respondents strongly agreed ( $M=4.89$ ,  $SDV=0.54$ ) that some activities were left out of schedule. The participants strongly agreed ( $M=4.81$ ,  $SDV=0.64$ ) that a work breakdown structure was prepared to identify all activities

and they strongly agreed (M=4.63, SDV=1.11) that unrealistic durations are assigned to activities. Overall, the surveyed employees agreed (M=4.75, SDV=0.80) the importance of identifying project activities. This implies that the choice of project activities is very important in performance of community based projects because the choice of activities to be undertaken can lead to project performance.

#### 4.6.3 The Influence of Project Objectives on Performance of Community Based Projects

Project objectives were measured by providing respondents with statements rated on a five-point Likert scale thus Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.16.

**Table 4.16: Project Objectives Influence on Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F(%)	F(%)	F(%)	F(%)	F(%)			(%)
Project objectives are achieved on time	4(39)	4(39)	3(2.9)	6(5.8)	86(83.5)	4.6117	1.00228	103(100)
Time required to achieve project objectives is measured	2(1.9)	2(1.9)	1(1.0)	4(3.9)	94(91.3)	4.8058	.72839	103(100)
Our projects consider number of beneficiaries	2(1.9)	2(1.9)	5(5.9)	4(3.9)	90(87.4)	4.7282	.80676	103(100)
Information needs are provided	1(1.0)	1(1.0)	1(1.0)	10(8.7)	90(87.4)	4.8155	.58991	103(100)
Budget is done to achieve objectives	1(1.0)	9(8.7)	9(8.7)	4(3.9)	80(77.7)	4.4854	1.03719	103(100)
<b>Composite for Project Objectives</b>						<b>4.68932</b>	<b>0.832906</b>	

The results in Table 4.16 show that 86(83.5%) of the respondents strongly agreed that project objectives are achieved on time; 6(5.8%) of the respondents agreed that project objectives are achieved on time; 3(2.9%) of the respondents neither agreed nor disagreed that project objectives are achieved on time; 4(3.9%) of the respondents disagreed that project objectives are achieved on time; and 4 (3.9%) of the respondents strongly disagreed that project objectives are achieved on time. Further, 94 (91.3%) strongly agreed that time required to achieve project objectives is measured; 4(3.9%) agreed that time required to achieve project objectives is measured; 1 (1.0%) neither agreed nor disagreed that time required to achieve project objectives is measured; 2(1.9%) disagreed that time required to achieve project objectives is measured; and 2(1.9%) strongly disagreed that time required to achieve project objectives is measured.

As shown from the findings 90 (87.4%) of the respondents strongly agreed that their projects consider number of beneficiaries; 4(3.9%) of the respondents agreed that their projects consider number of beneficiaries; 5 (5.9%) of the respondents neither agreed nor disagreed that their projects consider number of beneficiaries; 2(1.9%) of the respondents disagreed their projects consider number of beneficiaries; and 2(1.9%) of the respondents strongly disagreed that their projects consider number of beneficiaries. Further, 90(87.4%) strongly agreed that information needs are provided, 10(8.7%) agreed that information needs are provided; 1(1.0%) neither agreed nor disagreed that information needs are provided; 1 (1.0%) disagreed that information needs are provided; and 1(1.0%) strongly disagreed that information needs are provided. The research findings indicate that 80(77.7%) strongly agreed that budget is done to achieve objectives; 4(3.9%) agreed that budget is done to achieve objectives; 9(8.7%) neither agreed nor disagreed that budget is done to achieve objectives; 9(8.7%) disagreed that budget is done to achieve objectives; and 1(1.0%) strongly disagreed that budget is done to achieve objectives. As shown in the study findings it true that project objectives are the cornerstone of any project. This implies that it is necessary for project stakeholders to identify the project objectives that they intend to undertake if project performance is to be achieved.

The research findings show that respondents strongly agreed ( $M=4.61$ ,  $SDV=1.00$ ) that project objectives are achieved on time. They also agreed ( $M=4.81$ ,  $SD=0.73$ ) that time required to achieve project objectives is measured. Respondents strongly agreed ( $M=4.73$ ,  $SDV=0.81$ ) that their projects consider number of beneficiaries. The participants strongly agreed ( $M=4.82$ ,



SDV=0.59) that information needs are provided and they strongly agreed (M=4.49, SDV=1.04) that budget is done to achieve objectives. Overall, the surveyed employees agreed (M=4.69, SDV=0.83) that community based projects need to know what objectives they seek to achieve in the course of the project. The results imply that project objectives, particularly number of beneficiaries, are very critical in the performance of community based projects.

#### 4.6.4 Overall Descriptive Analysis on Logical Framework

The overall findings on the application of logical framework influence on performance of community based projects are shown in Table 4.17. The following have been considered under logical framework: output, activities and project objectives.

**Table 4.17: Means and Standard Deviations for Logical Framework**

<b>Components of Logical Framework</b>	<b>n</b>	<b>Mean</b>	<b>SDV</b>
Project output	103	4.71828	0.787264
Project activities	103	4.74562	0.803831
Project objectives	103	4.68932	0.832906
<b>Overall logical Framework analysis</b>		<b>4.71774</b>	<b>0.808000</b>

The research findings in Table 4.17 show that the overall mean for logical framework was 4.72 and the standard deviation was 0.808. The most dominant indicator was project activities (M=4.75, SDV=0.804); followed by project output (M=4.72, SDV=0.79) and project objectives (M=4.69, SDV=0.83). This implies that project activities are very important in performance of community based projects and it ensures that the right projects are delivered within expected time and costs.

The study sought to establish from the respondents some of the challenges they faced in implementing logical framework in their organization. One respondent argued that,

*“Some organizations may never have considered what indicators to use to measure outputs and outcomes, not having a standardize system to use the goals of a monitoring system, as well as the desired outcomes or reports”.*

One of the employees in the education sector argued that,

*“Determining thresholds to delineate between compliance and quality also presents its own challenges when quality since it is specifically defined by the organizations, lacking the proper financial resources to invest in the technology needed for the right logical framework systems and racing against the clock when it comes to designing and implementing a logical framework can be challenging as steps are removed from the process in order to save time”.*

The respondents were asked to explain how logical framework influences the performance of community based projects. The folowig is feedback from one of the respindents:

*“Through the use of logical framework project goals are easily identified and what it seeks to contribute defined; the purpose which is central to outcome is identified as well as intermediate results. In addition to this project outputs are listed and the relevant intervention which serve to achieve the goals and purpose. All this improve of the project performance.”*

Another respondent was of the opinion that,

*“The main tasks that need to be completed in order for the output to be achieved are defined the end result of this is performance of community based projects.”*

Results of interviews carried out on project managers of community based projects in Bungoma County on application of logical framework in relation to the performance of community based projects are covered in the following section. The use of logical framework enhances performance of community based projects. Project output is easily identified by project stakeholders. Project activities are formulated by the use of logical framework. The application of logical framework helps stakeholders including donors, community members, among others, in the identification of their needs and the related objectives.

The following are key responses that were obtained from project managers on how they rate the application of logical framework in relation to performance of community based projects.

One of the project managers said that,

*“To a large extent logical framework is effective in the development of objectives, indicators and problem analysis in the overall project plan. The use of logical framework by community based projects enables them to assumptions on which the project output, activities and objectives are built. Ensures that organization can plan on how to minimize risks in relation to project output, objectives and activities.”*

According to one project managers,

*“Sometimes situations at the ground where projects are carried out affect how the logical framework is applied. Through the use of logical framework project success is almost assured since it enables some aspects of the project to be altered in regards to the objectives.”*

Another project manager expressed that,

*“There is time management for community based projects. Facilitates team approach meeting requirements of a good project design”*

#### **4.6.5 Correlation Analysis**

Correlational analysis using Pearson’s Product Moment of correlation technique was done to determine the relationship between logical framework and performance of community based projects. It was meant to identify the strength and direction of the association between the indicators of logical framework and performance of community based projects. Values of correlation coefficient range from -1 and +1. A correlation coefficient of +1 indicates that the two variables are perfectly and positively related in a linear sense, while -1 shows that the two variables are perfectly related but in a negative linear sense. Correlation coefficient (r) ranging from 0.80 to 1.0 is very strong; from 0.60 to 0.79 is strong; from 0.40 to 0.59 is moderate; from 0.20 to 0.39 is weak; and from 0.00 to 0.19 indicate no relationship (Hill, 2015). The results are summarized in Table 4.18.

**Table 4:18: Correlation Matrix for Logical Framework and Performance of Community Based Projects**

Pearson Correlation Matrix

	Performance of community based projects	Application of logical framework
Performance of community based projects	1	0.115*
Application of logical framework	0.115*	1

\*\*Correlation significant at 0.01 level (2 tailed)

\*Correlation significant at 0.05 level (2 tailed)

The correlation results in Table 4.18 indicate that the indicators reviewed in this variable namely, project output, project activities and objectives had some level of association with the performance of community based projects. The questions touching on the project output, activities and objected were transformed into one variable of measure for application of logical framework. The Pearson correlation coefficient of 0.115 which was only significant at 0.05 level of significance indicated a weak positive correlation between performance of community based projects and application of logical framework.

The first objective of the study was to establish how application of logical framework influences performance of community based projects. Performance of community based projects was the dependent variable in the study and had the following three indicators: project output, project activities and project objectives. The independent variable was performance of community based projects which had the following indicators: completion within budget, project completed on schedule and project continuity after donor fund

#### **4.6.6 Regression Analysis and Hypothesis Testing**

Regression analysis was used to establish the influence of application of logical framework on performance of community based projects. Hypothesis testing using p value was used because it gave the strength of the decision .The p values were used to measure the hypothesis of the study. According to (Mugenda & Mugenda, 2012) a significance level of 0.05 is preferred

because it represented the results to be at 95% confidence level. The regression analysis results were presented using the model summary, analysis of variance (ANOVA) and the beta coefficients Tables

The following hypothesis was tested using simple regression model to satisfy the requirements of the first objective.

**Hypothesis 1**

H<sub>0</sub>: Application of Logical framework does not have a significant influence on performance of community based projects in Bungoma County.

The null hypothesis was tested using the following linear regression model:

$$Y = \beta_0 + \beta_1 X_1 + e_1$$

Where:

**Y= Performance of Community Based Projects**

**β<sub>0</sub>=regression constant**

**X<sub>1</sub>= Logical Framework Application**

**e<sub>1</sub>= error term**

The results are presented in Table 4.19.

**Table 4.19: Model Summary for Application of Logical Framework**

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
Dimension 1	.121 <sup>a</sup>	0.015	0.0149		0.83787

a. Predictors: (Constant), Application of Logical Framework

Table 4.19 presents the regression model summary on application of logical framework versus the performance of community based projects in Bungoma County. As presented in the Table the coefficient of determination R square is 0.121 and R is 0.015 at 0.05 level of significance. The Coefficient of determination R indicates that only 1.5% of the variations in performance of community based projects are explained by the application of logical framework. This

implies that there exists no very significant relationship between application of logical framework and performance of community based projects in Bungoma County.

**Table 4.20: Analysis of Variance (ANOVA) for Application of Logical Framework**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	27.179	3	9.06	0.494	0.688
	Residual	69.5	99	0.702		
	Total	96.68	102			

a. Dependent Variable: Performance of community based projects

b. Predictors: (Constant), Application of Logical framework

The analysis of variance (ANOVA) results as shown in Table 4.20 above confirms further that the model fit is not appropriate for this data since the p-value of 0.688 is much greater than 0.05. This implies therefore that the overall F (0.494) with  $p > 0.05$  indicates that we failed to reject the Null hypothesis and showed that there exists no significant relationship between the application of logical framework and performance of community based projects in Bungoma County.

**Table 4.21: Regression Coefficients: Logical Framework**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	0.979	0.156		6.23	0
1	Logical Framework	0.025	0.024	0.045	0.438	0.662

a. Dependent Variable: Performance of Community based projects

The results in Table 4.21 however indicate that the application of logical framework has a positive but insignificant influence on performance of community based projects. The fitted regression model  $Y = 0.979 + 0.025X$ . This implies that for every unit increase in the application of logical framework, the level of performance of community based projects increases by 0.025. Even when application of logical framework is nonexistent the performance of community based projects would still exist at about 0.979 units. This indicates that there were still other drivers of performance including application of stakeholder analysis, Gantt charts, problem tree analysis and managers competencies among others.

In terms of significant associations found between application of logical framework and performance of community based projects with regard to the entire tested sample it concluded that at 5% level of significance; The Null Hypothesis “ $H_0$ : Application of logical framework has no statistically significant effect on performance of community based projects Bungoma county in Kenya” is not rejected.

The overall F-statistic was 0.494 with  $p = 0.688 > 0.05$ , suggesting that there was no statistically significant relationship between logical framework and performance of community based projects. Based on the research findings, we fail to reject the null hypothesis which stated that there is no significant relationship between application of logical framework and performance of community based projects and concludes that application of logical framework has no statistically significant influence on the performance of community based projects.

In this section, the main findings for the first objective are linked to the previous studies that were reviewed under the literature review. The following hypothesis was stated:  $H_0$ : Application of Logical framework has no significant influence on performance of community based projects within Bungoma County.

A study by Milika (2011) found out that the logical frame work helps to analyse an existing situation like that relating to output as well as the identification of stakeholders needs and the definition of related objectives, establish a causal link between inputs, activities, results, purpose and overall objective in the vertical logic. He further argues that logical framework outputs enable organizations define the assumptions on which the project logic builds; identify the potential risks for achieving objectives and purpose; and establish a system for monitoring

and evaluating a communication and learning process among the stakeholders; like clients or beneficiaries, planners, decision-makers and implementers.

A study by Leuzzi (2013) indicates that a major component of logical frame is the formulation of a Logical Framework Matrix based on activities, goals and purpose of the project that are itemized in the logical framework matrix while logical framework is a more evaporate presentation that explains all components of a project logical framework matrix which is in a Table form and can be read at a glance by the relevant user. He concluded that the logical framework matrix is a participatory planning, monitoring and evaluation tool whose power depends on the degree to which it incorporates the full range of views of intended beneficiaries. A study by Busiinge (2010) found out that donors rarely operate outside the logical framework approach whereby project activities are the core aspects of the framework. However, sometimes they are boxed in results that are put in the project log frame, and yet the situation on the ground might affect the achievement of some of the activities hence requiring some aspects of the project to be changed in regard to objectives. It was concluded that any suggested changes by the implementing organizations would go through prolonged to and fro communication over the changes.

Hypothesis 1 was not supported by the findings and hence there was no significant relationship between application of logical framework and performance of community based projects. It had been expected that application of logical framework would have a significant relationship with performance of community based projects since projects need to have output, activities and objectives to be achieved. Considering the previous studies mentioned above, this study has come out with new findings since it does not find significant relationship between application logical framework and community based projects.

#### **4.7 Stakeholder Analysis and Performance of Community Based Projects**

This was the second objective of the study that sought to assess the extent to which application of stakeholder analysis influences performance of community based projects within Bungoma County. The respondents were therefore asked to state their perceptions on project outcomes, stakeholder inclusion and stakeholder capability as discussed in the following sections.



#### 4.7.1 Project Outcomes and Performance of Community Based Projects

Project outcomes were measured by providing respondents with statements rated on a five point Likert scale ranging from: Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.22.

**Table 4.22: Project Outcomes and Performance of Community Based Projects**

Statements	SD F(%)	D F(%)	NAD F(%)	A F(%)	SA F(%)	Mean	SDV	Total (%)
Project outcomes are achieved on time			4(3.9)	14(13.6)	78(75.7)	4.5534	0.95720	103(100)
Funding influences project outcomes	2(1.9)	2(1.9)	3(2.9)	16(15.5)	80(77.7)	4.6505	0.80084	103(100)
Stakeholders slow down decision making	5(4.9)	8(7.8)	0(0)	0(0)	90(87.4)	4.5728	1.14277	103(100)
There are many stakeholder initiated variations in the project	3(2.9)	2(1.9)	6(5.8)	10(9.7)	82(79.6)	4.6117	0.91000	103(100)
Stakeholders influence project success	1(1.0)	3(2.9)	4(3.9)	11(10.7)	84(81.6)	4.6893	0.76734	103(100)
<b>Composite for Project Outcomes</b>						<b>4.61554</b>	<b>0.91563</b>	

The results in Table 4.22 show that 78(75.7%) of the respondents strongly agreed that project outcomes are achieved on time; 14(13.6%) of the respondents agreed that project outcomes are achieved on time; 4(3.9%) of the respondents neither agreed nor disagreed that project outcomes are achieved on time; 4(3.9%) of the respondents disagreed that project outcomes are achieved on time; and 3(2.9%) of the respondents strongly disagreed that project outcomes are achieved on time. Further, 80(77.7%) strongly agreed that funding influences project outcomes; 16(15.5%) agreed that funding influences project outcomes; 3(2.9%) neither agreed nor disagreed that funding influences project outcomes, 2(1.9%) disagreed that funding influences project outcomes; and 2(1.9%) strongly disagreed that funding influences project outcomes. As shown from the findings 90(87.4%) of the respondents strongly agreed that stakeholders slow down decision making; 0(0%) of the respondents agreed that stakeholders slow down decision making; 0(0%) of the respondents neither agreed nor disagreed that stakeholders slow down decision making; 8(7.8%) of the respondents disagreed that stakeholders slow down decision making; and 5(4.9%) of the respondents strongly disagreed that stakeholders slow down decision making.

Further, 82(79.6%) strongly agreed that there are many stakeholder-initiated variations in the project; 10(9.7%) agreed that there are many stakeholder-initiated variations in the project; 6(5.8%) neither agreed nor disagreed that there are many stakeholder-initiated variations in the project; 2(1.9%) disagreed that there are many stakeholder-initiated variations in the project; and 3(2.9%) strongly disagreed that there are many stakeholder-initiated variations in the project. The research findings indicate that 84(81.6%) strongly agreed that stakeholders influences project success; 11(10.7%) agreed that stakeholders influences project success; 4(3.9%) neither agreed nor disagreed that stakeholders influences project success; 3(2.9%) disagreed that stakeholders influence project success, and 1(1.0%) strongly disagreed that stakeholders influence project success. This implies that the project outcomes parameter is very important for project performance. Therefore project stakeholders need to identify the type of outcomes they seek to achieve if they are to improve on community based projects.

The research findings show that respondents strongly agreed ( $M=4.55$ ,  $SDV=0.96$ ) that project outcomes are achieved on time. They also agreed ( $M=4.65$ ,  $SD=0.80$ ) funding influences project outcomes. Respondents strongly agreed ( $M=4.57$ ,  $SDV=1.14$ ) that stakeholders slow down decision making. The participants strongly agreed ( $M=4.61$ ,  $SDV=0.91$ ) that there are

many stakeholder initiated variations in the project; and they strongly agreed (M=4.69, SDV=0.77) that stakeholders influences project success. Overall, the surveyed employees agreed (M=4.62, SDV=0.92) performance of community based projects is dependent on the outcomes that stakeholders seek to achieve from the projects started at the community level. The results imply that project outcomes are very critical in the performance of community based projects; particularly number of project outcomes.

#### 4.7.2 Stakeholder Inclusion and Performance of Community Based Projects

Stakeholder inclusion was measured by providing respondents with statements rated on a five-point Likert scale ranging from: Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.23.

**Table 4.23: Stakeholder Inclusion Influence on Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F(%)	F(%)	F(%)	F(%)	F(%)			(%)
Various stakeholders included in the project	4(3.9)	2(1.9)	3(2.9)	7(6.8)	87(84.5)	4.6602	0.93466	103(100)
Local culture events are held	3(2.9)	3(2.9)	2(1.9)	8(7.8)	87(84.5)	4.6796	0.88798	103(100)
Our organization utilizes stakeholder expertise	4(3.9)	3(2.9)	1(1.0)	4(3.9)	91(88.3)	4.6990	0.93761	103(100)
Stakeholders provide project feedback	2(1.9)	4(3.9)	5(4.9)	5(4.9)	87(84.5)	4.6602	0.89172	103(100)
Stakeholders grant project acceptance	3(2.9)	2(1.9)	5(4.9)	12(11.7)	81(78.6)	4.6117	0.89916	103(100)
<b>Composite for Project Inclusion</b>						<b>4.66214</b>	<b>0.910226</b>	

The results in Table 4.23 show that 87(84.5%) of the respondents strongly agreed that various stakeholders included in the project, 7(6.8%) of the respondents agreed that various stakeholders were included in the project; 3(2.9%) of the respondents neither agreed nor

disagreed that various stakeholders were included in the project; 2(1.9%) of the respondents disagreed that various stakeholders were included in the project; and 4(3.9%) of the respondents strongly disagreed that various stakeholders included in the project. Further, 87(84.5%) strongly agreed that local culture events are held; 8(7.8%) agreed that local culture events are held; 2(1.9%) neither agreed nor disagreed that local culture events are held; 3(2.9%) disagreed that local culture events are held; and 3(2.9%) strongly disagreed that local culture events are held.

As shown from the findings 91(88.3%) of the respondents strongly agreed that their organization utilizes stakeholder expertise; 4(3.9%) of the respondents agreed that their organization utilizes stakeholder expertise; 1(1.0%) of the respondents neither agreed nor disagreed that their organization utilizes stakeholder expertise; 3(2.9%) of the respondents disagreed that their organization utilizes stakeholder expertise; and 4(3.9%) of the respondents strongly disagreed that their organization utilizes stakeholder expertise. Further, 87(84.5%) strongly agreed that stakeholders provide project feedback, 5(4.9%) agreed that stakeholders provide project feedback; 5(4.9%) neither agreed nor disagreed that stakeholder provide project feedback; 4(3.9%) disagreed that stakeholders provide project feedback; and 2(1.9%) strongly disagreed that stakeholder provide project feedback. The research findings indicate that 81(78.6%) strongly agreed that stakeholders grant project acceptance, 12(11.7%) agreed that stakeholders grant project acceptance, 5(4.9%) neither agreed nor disagreed that stakeholders grant project acceptance; 2(1.9%) disagreed that stakeholders grant project acceptance; and 3(2.9%) strongly disagreed that stakeholders grant project acceptance. The research findings show that stakeholder inclusion is an important aspect on community based projects performance. Thus, it is important for those organizations with projects to involve stakeholders especially the community.

The study results showed that most of the respondents strongly agreed ( $M=4.66$ ,  $SDV=0.93$ ) that various stakeholders were included in the project. They also agreed ( $M=4.68$ ,  $SD=0.89$ ) that local culture events are held. Respondents strongly agreed ( $M=4.70$ ,  $SDV=0.94$ ) that their organization utilizes stakeholder expertise. The participants strongly agreed ( $M=4.66$ ,  $SDV=0.89$ ) that stakeholders provide project feedback and they strongly agreed ( $M=4.61$ ,  $SDV=0.90$ ) that stakeholders grant project acceptance. Overall, the surveyed employees agreed ( $M=4.66$ ,  $SDV=0.91$ ) that stakeholder inclusion is necessary for community based projects.

The results imply that stakeholder inclusion is important in the performance of community based projects so as to avoid cost overruns occasioned by misunderstandings of stakeholders.

#### 4.7.3 Stakeholder Capability and Performance of Community Based Projects

Stakeholder capability was measured by providing respondents with statements rated on a five-point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.24.

**Table 4.24: Stakeholder Capability Influence on Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F(%)	F(%)	F(%)	F(%)	F(%)			F(%)
Stakeholder are identified based on individual performance capabilities	2(1.9)	3(2.9)	14(13.6)	9(8.7)	75(72.8)	4.4757	0.96857	103(100)
We review project requirements with stakeholders		3(2.9)	3(2.9)	5(4.9)	89(86.4)	4.6893	0.89694	103(100)
Stakeholders play a role in uncovering project risks	5 (4.9)	2(1.9)	2(1.9)	7(6.8)	87(84.5)	4.6408	0.98870	103(100)
Stakeholders provide input on project goals from external perspectives	6(5.8)		2(1.9)	11(10.7)	83(80.6)	4.5922	1.02361	103(100)
Stakeholders provide oversight role in the project	7 (6.8)	0(0)	2(1.9)	2(1.9)	92(89.3)	4.6699	1.04214	103(100)
<b>Composite for Stakeholder Capability</b>						<b>4.61358</b>	<b>0.983992</b>	

The results in Table 4.24 show that 75(72.8%) of the respondents strongly agreed that stakeholders are identified based on individual performance capabilities; 9(8.7%) of the respondents agreed that stakeholders are identified based on individual performance capabilities; 14(13.6%) of the respondents neither agreed nor disagreed that stakeholders are identified based on individual performance capabilities; 3(2.9%) of the respondents disagreed that stakeholders are identified based on individual performance capabilities; and 2(1.9%) of the respondents strongly disagreed that stakeholders are identified based on individual performance capabilities. Further, 89(86.4%) strongly agreed that they review project requirements with stakeholders; 5(4.9%) agreed that they review project requirements with stakeholders; 3(2.9%) neither agreed nor disagreed that they review project requirements with stakeholders; 3(2.9%) disagreed that they review project requirements with stakeholders; and 3(2.9%) strongly disagreed that they review project requirements with stakeholders.

The study results indicate that 87(84.5%) of the respondents strongly agreed that stakeholders play a role in uncovering project risks; 7(6.8%) of the respondents agreed that stakeholders play a role in uncovering project risks; 2(1.9%) of the respondents neither agreed nor disagreed that stakeholders play a role in uncovering project risks; 2(1.9%) of the respondents disagreed that stakeholders play a role in uncovering project risks; and 5(4.9%) of the respondents strongly disagreed that stakeholders play a role in uncovering project risks. Further, 83(80.6%) strongly agreed that stakeholders provide input on project goals from external perspectives; 11(10.7%) agreed that stakeholders provide input on project goals from external perspectives; 2(1.9%) neither agreed nor disagreed that stakeholders provide input on project goals from external perspectives; 1(1.0%) disagreed that stakeholders provide input on project goals from external perspectives; and 6(5.8%) strongly disagreed that stakeholders provide input on project goals from external perspectives. The research findings indicate that 92(89.3%) strongly agreed that stakeholders provide oversight role in the project; 2(1.9%) agreed that stakeholders provide oversight role in the project; 2(1.9%) neither agreed nor disagreed that stakeholders provide oversight role in the project; 0(0%) disagreed that stakeholders provide oversight role in the project; and 7(6.8%) strongly disagreed that stakeholders provide oversight role in the project. As shown in the study findings it is true that stakeholders provide project with necessary tools to perform such as providing oversight role, input on project goals and input on uncovering

project risks. In community based projects, it is important for relevant data on stakeholder capability to provide so as to avoid conflicts during the execution of the project.

The research findings show that respondents strongly agreed (M=4.48, SDV=0.97) that stakeholders are identified based on individual performance capabilities. They also agreed (M=4.69, SD=0.90) that they review project requirements with stakeholders. Respondents strongly agreed (M=4.64, SDV=0.99) that stakeholders play a role in uncovering project risks. The participants strongly agreed (M=4.59, SDV=1.02) that stakeholders provide input on project goals from external perspectives; and they strongly agreed (M=4.67, SDV=1.04) that budget is done to achieve objectives. Overall, the surveyed employees agreed (M=4.61, SDV=0.98) that stakeholder capability influences community based projects performance. The results imply that stakeholder capability is very important in the performance of community based projects since capability goes a long way in ensuring project performance.

#### **4.7.4 Overall Descriptive Analysis on Stakeholder Analysis**

The overall findings on the extent to which application of stakeholder analysis influences performance of community based projects are shown in Table 4.25. The following have been considered under the stakeholder analysis: project output, stakeholder inclusion and stakeholder capabilities.

**Table 4.25: Means and Standard Deviations for Stakeholder Analysis**

<b>Components of stakeholder analysis</b>	<b>n</b>	<b>Mean</b>	<b>SDV</b>
Project Outcomes	103	4.61554	0.91563
Stakeholder inclusion	103	4.66214	0.910226
Stakeholder capabilities	103	4.61358	0.983992
<b>Overall stakeholder analysis</b>		<b>4.63042</b>	<b>0.936616</b>

The research findings in Table 4.25 show that the overall mean for stakeholder analysis was 4.63 and the standard deviation was 0.94. The most dominant indicator was stakeholder inclusion (M=4.66, SDV=0.91), followed by project outcomes (M=4.62, SDV=0.92) and stakeholder capability (M=4.63, SDV=0.94). This implies that stakeholder analysis is very important in performance of community based projects and it ensures there is coordination and understanding of stakeholders leading to performance of projects.

The influence of stakeholders on the project can be immense and, if not managed correctly, could lead to project delays, resource drain, political intervention or project termination. The study sought to establish from the respondents the challenges they faced in implementing stakeholder analysis in their organization. One respondent observed that,

*“It is difficult to identify the right stakeholders, understanding and managing them, conducting a thorough stakeholder analysis is difficult owing to the demographics, interest in the project, needs and concerns as well as their expectations in the project. It is not easy to predict how a particular stakeholder may interact directly with project team or with others.”*

One of the employees argued that,

*“Identifying stakeholders who are most likely not to cause disruption and investigating opportunities that leverage their positive perception as project advocate and identifying what will be negotiable and non-negotiable.”*

By creating a sense of community ownership, participation leads to effectiveness and better decisions in projects. In relation to the influence of stakeholder analysis on performance of community based projects, one employee stated that,

*“First, stakeholders are identified according to their roles in the project thus if the roles are clearly identified their influence will be notable in the performance of community based projects. The respondents stated that stakeholder analysis positively influence community based projects since it involves different groups who have different concerns, capacities and interests, and which need to be explicitly understood and recognized in the process of problem identification, objective setting and strategy selection on community based projects.”*



According to another respondent,

*“Stakeholder analysis is an important aspect that must systematically identify all of special interests groups of the project, assuring a balanced representation of the interests of people”. Another employee responded that, “effective stakeholders’ engagement benefits the project by eliminating conflicts and increase cooperation between the firm and the stakeholders”.*

Two employees were in agreement that ineffective engagement may result in unexpected problems that may be more prominent than a high profile construction mishap.

Results of interviews held with project managers indicate that the application of stakeholder analysis influences performance of community based projects to a great extent and this supports the quantitative data obtained in the study. The following are key responses that were obtained from the project managers interviewed:

According to one of the project managers,

*“Stakeholder involvement in the project environment enables a formal relationship through which primary and secondary stakeholders engage in an effort to align their interest thereby reducing risk in projects. Stakeholder involvement proves builds a proactive interaction between project teams and other stakeholders. Stakeholder involvement in the supervision and monitoring significantly influence the outcome of the project.”*

Another project manager stated that,

*“Their involvement of stakeholders helps in the coordination of people and other resources required in carrying out a plan”. Another one argued that, “we involve stakeholder in planned objectives and policies of a project so as to be well-organized and ensure that allocation and utilization of resources is efficient”.*

Majority of the responses pointed out that stakeholder involvement in the planning process reduces distrust of the project process or outcome, there is an increase in commitment to the project objectives and processes and there is heightened credibility of the project’s outcome.

#### 4.7.5 Correlation Analysis

Correlational analysis using Pearson’s Product Moment technique was done to determine the relationship between indicators of stakeholder analysis and performance of community based projects. It was meant to identify the strength and direction of the association between the indicators of stakeholder analysis and performance of community based projects. The results are summarized in Table 4.26.

**Table 4.26: Stakeholder Analysis Correlation Results**

	Performance of Community Based Projects	of Application of Stakeholder Analysis
Performance of Community Based Projects	1	0.56*
Application of Stakeholder Analysis	0.56*	1

\*Correlation significant at 0.05 level (2 tailed)

The correlation results in Table 4.26 indicated that the indicators, namely, project outcome, stakeholder inclusion and stakeholder capability which had been transformed into one composite variable for stakeholder analysis had some level of association with performance of community based projects. The Application of stakeholder analysis had a Pearson correlation coefficient of 0.56 depicting a moderately strong level of association with performance of community based projects.

The second objective of the study was to assess the extent to which the application of stakeholder analysis influences performance of community based projects within Bungoma County. The independent variable in the study was stakeholder analysis which had the following indicators: project outcomes, stakeholder inclusion and stakeholder capability.

#### 4.7.6 Regression Analysis and Hypothesis Testing

Regression analysis was used to establish the influence of application of stakeholder analysis on performance of community based projects. Hypothesis testing using p value was used because it gave the strength of the decision .The p values were used to measure the hypothesis of the study. According to (Mugenda & Mugenda, 2012) a significance level of 0.05 is preferred because it represented the results to be at 95% confidence level. The regression analysis results were presented using the model summary, analysis of variance (ANOVA) and the beta coefficients Tables

The following hypothesis was tested using simple regression model to satisfy the requirements of the second objective.

### Hypothesis 2

H<sub>0</sub>: Application of stakeholder analysis does not have a significant influence on performance of community based projects in Bungoma County.

The null hypothesis was tested using the following linear regression model:

$$Y = \beta_0 + \beta_2 X_2 + e_2$$

Where :Y= Performance of Community Based Projects

$\beta_0$ =regression constant

$X_2$ = Stakeholder analysis , $e_2$ = error term

The results are presented in Table 4.27.

**Table 4.27: Model Summary for Application of Stakeholder Analysis**

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
dimension 1	.432 <sup>a</sup>	0.332	0.33	0.92378

a. Predictors: (Constant), stakeholder analysis

Table 4.27 presents the regression model summary on application of stakeholder analysis versus the performance of community based projects in Bungoma County. As presented in the Table, the coefficient of determination R square is 0.332 and R is 0.432 which is taken at 0.05- level of significance. The Coefficient of determination R indicates that 33.2% of the variations in performance of community based projects are explained by the application of

stakeholder analysis. This implies that there exists a significant relationship between application of stakeholder analysis and performance of community based projects in Bungoma County.

**Table 4.28: Analysis of Variance (ANOVA) for Application of Stakeholder Analysis**

Model		Sum of		Mean		Sig.
		Squares	df	Square	F	
1	Regression	12.197	3	4.066	4.095	.004
	Residual	84.483	99	.853		
	Total	96.680	102			

a. Dependent Variable: Performance of community based projects

b. Predictors: (Constant), Application of Stakeholder Analysis

The analysis of variance (ANOVA) results as shown in Table 4.28 above confirms further that the model fit is appropriate for this data since the p-value of 0.004 is much less than 0.05. This implies therefore that the overall F (4.095) with  $p < 0.05$  indicates that we rejected the Null hypothesis and showed that there exists a significant relationship between the application of stakeholder analysis and performance of community based projects in Bungoma County.

**Table 4.29: Regression Coefficients: Stakeholder Analysis**

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
	(Constant)	1.362	0.174		6.23	0
1	Stakeholder Analysis	0.097	0.023	0.276	2.232	0.0012

a. Dependent Variable: Performance of Community based projects

The results in Table 4.29 further indicated that the application of stakeholder analysis has a positive significant influence on performance of community based projects. The fitted regression model  $Y = 1.362 + 0.097X$ . This implies that for every unit increase in application of stakeholder analysis the level of performance of community based projects increases by

0.097. Even when application of stakeholder analysis is not applied, the performance of community based projects would still be significant at 1.362 units. This indicates that there were still other factors driving performance such as logical framework, application of Gantt charts, problem tree analysis and managers competencies among others.

In terms of significant associations found between application of stakeholder analysis and performance of community based projects with regard to the entire tested sample it concluded that at 5% level of significance; The Null Hypothesis “Ho: Application of logical stakeholder analysis has no statistically significant effect on performance of community based projects Bungoma County in Kenya” was rejected and the alternative hypothesis accepted.

The overall F-statistic was (4.095) with  $p=0.004 < 0.05$ , suggesting that there was a statistically significant relationship between application of stakeholder analysis and performance of community based projects. Based on the research findings, we reject the null hypothesis which stated that there is no significant relationship between application of stakeholder analysis and performance of community based projects, and concludes that application of stakeholder analysis has a statistically significant influence on the performance of community based projects.

In this section, the main findings for the second objective are linked to the previous studies that were reviewed under the literature review. The following hypothesis was stated: Hypothesis Ho: Application of stakeholder analysis has no significant influence on performance community based projects within Bungoma County.

A study by Kelly (2015) examined the enablers of effective stakeholder engagement namely: significant focus on communication; promoting partnership; promoting trust and readiness to cooperate among various actors. The general concord among researchers, however, champions the participation of all relevant stakeholders in the decision making processes. This is embedded in the practicality of ensuring that stakeholders’ views are inculcated in the decision making framework and implemented and not in mere invitation to participate. A study by Kolavalli and Kerr (2002) suggested that stakeholder participation increased project ownership by the beneficiaries and that it ensured project sustainability through inclusion. The authors further stated that community participation plays a role in conveying information, in particular local knowledge that fosters better action plans leading to performance and inclusion.

A study by Blood (2013) identified compartmentalization, stakeholder lack of capability, lack of baseline data, cumulative effect of incremental development, stakeholder fatigue, gap between public expectation and regulatory requirements as imminent problems inducing ineffective stakeholder engagement in mining projects. From these broad themes, the study identifies organizational, project environment, communication, contractual, and regulatory issues affecting stakeholder engagement. A study by Zacharia et al., (2008) found that, community participation and their capability in the study programmes takes on different forms in different stages of the project cycle. Despite the time difference between the old and new programme, the nature and extent of participation for the majority of local communities is generally limited to information giving, consultation and contribution which is not enough in relation to capability. Local communities are generally not actively involved in decision-making, planning, monitoring and evaluation processes because they lack capability.

Hypothesis 2 was supported by data and hence there was a significant relationship between application of stakeholder analysis and performance of community based projects. Considering the previous studies mentioned above, this study does not come out with new findings but supports previous studies on the topic.

#### **4.8 Problem Tree Analysis of Community Based Projects**

The third objective of the study was to examine how the application of problem tree analysis influences performance of community based projects. This section focused on: project problems identified, project root causes and project effects. These are presented in the following themes.

##### **4.8.1 The Influence of Project identified Problems on Performance of Community Based Projects**

Project identified problems was measured by providing respondents with statements rated on a five-point Likert scale ranging from: Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.30.

##### **Table 4.30: Influence of Project Identified Problems and Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F(%)	F(%)	F(%)	F(%)	F(%)			F(%)
Constraints to the problems are identified	4 (3.9)	2 (1.9)	4 (3.9)	6(5.8)	87(84.5)	4.6505	0.94670	103(100)
The main problem is always selected among other community problems	1(1.0)	3(2.9)	1(1.0)	8(7.8)	90(87.4)	4.7767	0.69919	103(100)
Consensus building is done when identifying the right problem	1(1.0)		1(1.0)	7(6.8)	91(88.3)	4.7864	0.69523	103(100)
Our organization identifies the right schedules for problems identified		1(1.0)	4(3.9)	0(0)	94(91.3)	4.7379	0.89619	103(100)
Identified problems are well defined	4 (3.9)	1 (1.0)	9(8.7)	8(7.8)	81(78.6)	4.5631	0.97689	103(100)
<b>Composite for Project-identified Problems</b>						<b>4.70292</b>	<b>0.84284</b>	

The results in Table 4.30 show that 87(84.5%) of the respondents strongly agreed that constraints to the problems are identified; 6(5.8%) of the respondents agreed that constraints to the problems are identified; 4(3.9%) of the respondents neither agreed nor disagreed that constraints to the problems are identified; 2(1.9%) of the respondents disagreed that constraints to the problems are identified; and 4(3.9%) of the respondents strongly disagreed that constraints to the problems are identified. Further, 90(87.4%) strongly agreed that the main problem is always selected among other community problems, 8(7.8%) agreed that the main problem is always selected among other community problems; 1(1.0%) neither agreed nor disagreed that the main problem is always selected among other community problems; 3(2.9%) disagreed that the main problem is always selected among other community problems; and



1(1.0%) strongly disagreed that the main problem is always selected among other community problems.

The findings show that 91(88.3%) of the respondents strongly agreed that consensus building is done when identifying the right problem; 7(6.8%) of the respondents agreed that consensus building is done when identifying the right problem; 1(1.0%) of the respondents neither agreed nor disagreed that consensus building is done when identifying the right problem; 3(2.9%) of the respondents disagreed consensus building is done when identifying the right problem; and 1(1.0%) of the respondents strongly disagreed that consensus building is done when identifying the right problem. Further, 94(91.3%) strongly agreed that their organization identifies the right schedules for problems identified; 0(0%) agreed that their organization identifies the right schedules for problems identified; 4(3.9%) neither agreed nor disagreed that their organization identifies the right schedules for problems identified; 1(1.0%) disagreed that their organization identifies the right schedules for problems identified; and 4(3.9%) strongly disagreed that their organization identifies the right schedules for problems identified. The research findings indicate that 81(78.6%) strongly agreed that identified problems are well defined; 8(7.8%) agreed that identified problems are well defined; 9(9.7%) neither agreed nor disagreed that identified problems are well defined; 1(1.0%) disagreed that identified problems are well defined; and 4(3.9%) strongly disagreed that identified problems are well defined. A project performance is dependent on the type and the extent of problems identified. Without a clear identification of problems there is a likelihood of community based projects fail. In community based projects, it is important that project problems are identified to ensure planning is done on time leading to project performance.

The study results shows that majority of the respondents strongly agreed ( $M=4.65$ ,  $SDV=0.95$ ) that constraints to the problems are identified. They also agreed ( $M=4.78$ ,  $SD=0.70$ ) that the main problem is always selected among other community problems. Respondents strongly agreed ( $M=4.79$ ,  $SDV=0.70$ ) that consensus building is done when identifying the right problem. The participants strongly agreed ( $M=4.74$ ,  $SDV=0.90$ ) that their organization identifies the right schedules for problems identified and they strongly agreed ( $M=4.56$ ,  $SDV=0.98$ ) that identified problems are well defined. Overall, the surveyed employees agreed ( $M=4.70$ ,  $SDV=0.84$ ) that project-identified problems influence community based project performance. The results imply that identification of project problems is very important in the

performance of community based projects since this enables the community to focus on projects where have problems identified.

#### 4.8.2 Project Root Causes and Performance of Community Based Projects

Project root causes were measured by providing respondents with statements rated on a five-point Likert scale ranging from: Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.31.

**Table 4.31: Project Root Causes and Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F(%)	F(%)	F(%)	F(%)	F(%)			F(%)
Factors contributing to the problem are always analyzed	5 (4.9)	3(2.9)	5(4.9)	4(3.9)	86(83.5)	4.5825	1.05277	103(100)
Culture misalignments are identified	11(10.7)	4(3.9)	7(6.8)	16(15.5)	65(63.1)	4.1650	1.34381	103(100)
Causes of main problem are identified	12(11.7)	5 (4.9)	8(7.8)	13(12.6)	65(63.1)	4.1068	1.39967	103(100)
Problem is always defined	3(2.9)	2(1.9)	4(3.9)	12(11.7)	82(79.6)	4.6311	0.88551	103(100)
Data collected is always analyzed	1(1.0)	2(1.9)	2(1.9)	15(14.6)	83(80.6)	4.7184	0.69193	103(100)
<b>Composite for Project Root Causes</b>						<b>4.44076</b>	<b>1.07473</b>	

The results in Table 4.31 show that 86(83.5%) of the respondents strongly agreed that factors contributing to the problem are always analysed; 4(3.9%) of the respondents agreed that factors contributing to the problem are always analysed; 5(4.9%) of the respondents neither agreed nor disagreed that factors contributing to the problem are always analysed; 3(2.9%) of the respondents disagreed that factors contributing to the problem are always analysed; and

5(4.9%) of the respondents strongly disagreed that factors contributing to the problem are always analysed. Further, 65(63.1%) strongly agreed that culture misalignments are identified; 16(15.5%) agreed that culture misalignments are identified; 7(6.8%) neither agreed nor disagreed that culture misalignments are identified; 4(3.9%) disagreed that culture misalignments are identified; and 11(10.7%) strongly disagreed that culture misalignments are identified.

It is shown from the study results that 65(63.1%) of the respondents strongly agreed that causes of main problem are identified, 13(12.6%) of the respondents agreed that causes of main problem are identified, 8(7.8%) of the respondents neither agreed nor disagreed that causes of main problem are identified, 5(4.9%) of the respondents disagreed that causes of main problem are identified, and 12(11.7%) of the respondents strongly disagreed that causes of main problem are identified. Further, 82(79.6%) strongly agreed that problem is always defined, 12(11.7%) agreed that problem is always defined, 4(3.9%) neither agreed nor disagreed that problem is always defined, 2(1.9%) disagreed that problem is always defined, and 3(2.9%) strongly disagreed that problem is always defined. The research findings indicate that 83(80.6%) strongly agreed that data collected is always analyzed, 15(14.6%) agreed data collected is always analyzed, 2(1.9%) neither agreed nor disagreed that data collected is always analyzed, 2(1.9%) disagreed that data collected is always analyzed, and 1(1.0%) strongly disagreed that data collected is always analyzed. In community based projects, project root causes influence how community based projects perform thus there is need to ensure that project root cause are stated clearly.

The study results shows that majority of the respondents strongly agreed ( $M=4.58$ ,  $SDV=1.05$ ) that factors contributing to the problem are always analysed. They also agreed ( $M=4.17$ ,  $SD=1.34$ ) that culture misalignments are identified. Respondents strongly agreed ( $M=4.11$ ,  $SDV=1.40$ ) that causes of main problem are identified. The participants strongly agreed ( $M=4.63$ ,  $SDV=1.89$ ) that problem is always defined; and they strongly agreed ( $M=4.72$ ,  $SDV=0.69$ ) that data collected is always analysed. Overall, the surveyed employees agreed ( $M=4.44$ ,  $SDV=1.07$ ) that project root causes influence community based project performance. The results imply that project root causes are very important in the performance of community based projects since without them it will not be easy to define projects and plan to undertake them.

### 4.8.3 The Project Effect and Performance of Community Based Projects

Project effect was measured by providing respondents with statements rated on a five-point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.32.

**Table 4.32: Project Effect and Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F(%)	F(%)	F(%)	F(%)	F(%)			F(%)
Proactive plans are done to mitigate effects	5(4.9)	3(2.9)	5(4.9)	4(3.9)	86(83.5)	4.5825	1.05277	103(100)
Effects of the main problems are identified	11(10.7)	4(3.9)	7(6.8)	16(15.5)	65(63.1)	4.1650	1.34381	103(100)
Immediate effects are identified	12(11.7)	5(4.9)	8(7.8)	13(12.6)	65(63.1)	4.1068	1.39967	103(100)
Long-term effects are identified	3(2.9)	2(1.9)	4(3.9)	12(11.7)	82(79.6)	4.6311	0.88551	103(100)
Cause-effect analysis exists	1(1.0)	2(1.9)	2(1.9)	15(14.6)	83(80.6)	4.7184	0.69193	103(100)
<b>Composite for Project Effects</b>						<b>4.44076</b>	<b>1.07473</b>	

The results in Table 4.32 show that 86(83.5%) of the respondents strongly agreed that proactive plans are done to mitigate effects; 4(3.9%) of the respondents agreed that proactive plans are done to mitigate effects; 5(4.9%) of the respondents neither agreed nor disagreed that proactive plans are done to mitigate effects; 3(2.9%) of the respondents disagreed that proactive plans are done to mitigate effects; 5(4.9%) of the respondents strongly disagreed that proactive plans are done to mitigate effects. Further, 65(63.1%) strongly agreed that effects of the main problems are identified; 16(15.5%) agreed that effects of the main problems are identified; 7(6.8%) neither agreed nor disagreed effects of the main problems are identified; 4(3.9%)

disagreed that effects of the main problems are identified; and 11(10.7%) strongly disagreed that effects of the main problems are identified.

The study results indicated that 65(63.1%) of the respondents strongly agreed that immediate effects are identified; 13(12.6%) of the respondents agreed that immediate effects are identified; 8(7.8%) of the respondents neither agreed nor disagreed that immediate effects are identified; 5(4.9%) of the respondents disagreed that immediate effects are identified; and 12(11.7%) of the respondents strongly disagreed that immediate effects are identified. Further, 82(79.6%) strongly agreed that long-term effects are identified; 12(11.7%) agreed that long-term effects are identified; 4(3.9%) neither agreed nor disagreed that long term effects are identified; 2(1.9%) disagreed that long-term effects are identified; and 3(2.9%) strongly disagreed long-term effects are identified. The research findings indicate that 83(80.6%) strongly agreed that cause effect analysis exists; 15(14.6%) agreed that cause-effect analysis exists; 2(1.9%) neither agreed nor disagreed that cause-effect analysis exists; 2(1.9%) disagreed that cause effect analysis exists; and 1(1.0%) strongly disagreed that cause effect analysis exists. The findings reveal that project effect parameter influences performance of community based projects since this is valuable in identifying the factors that may not be addressed by the planned intervention. In community based projects, it is very important to match project effects to project problems and root causes so as to achieve project performance.

The study results shows that majority of the respondents strongly agreed ( $M=4.58$ ,  $SDV=1.05$ ) that proactive plans are done to mitigate effects. They also agreed ( $M=4.17$ ,  $SD=1.34$ ) that effects of the main problems are identified. Respondents strongly agreed ( $M=4.11$ ,  $SDV=1.40$ ) that immediate effects are identified. The participants strongly agreed ( $M=4.63$ ,  $SDV=0.89$ ) that long-term effects are identified and they strongly agreed ( $M=4.71$ ,  $SDV=0.69$ ) cause-effect analysis exists. Overall, the surveyed employees agreed ( $M=4.44$ ,  $SDV=1.07$ ) project effect influences community based project performance. The results imply that project effects are very important in the performance of community based projects since without them projects cannot function properly.

#### **4.8.4 Overall Descriptive Analysis on Problem Tree Analysis**

The overall findings on the extent to which the application of problem tree analysis influences performance of community based projects are shown in Table 4.33. The following have been

considered under problem tree analysis: project problem identified, project root causes and project effects.

**Table 4.33: Means and Standard Deviations for Problem Tree Analysis**

<b>Components of problem tree analysis</b>	<b>n</b>	<b>Mean</b>	<b>SDV</b>
Project problems identified	103	4.70292	0.84284
Project root causes	103	4.44076	1.07473
Project effects	103	4.44076	1.07473
<b>Overall problem tree analysis</b>		<b>4.52815</b>	<b>0.99743</b>

The study results in Table 4.33 show that the overall mean for stakeholder analysis was 4.53 and the standard deviation was 1.00. The most dominant indicator was project problem identified (M=4.70, SDV=0.84); followed by both project root causes and project effects (M=4.44, SDV=1.07). This implies that project problems identified are important in performance of community base projects because without problems being identified, there is no need to undertake community based projects.

The study sought to find out from the employees what some of the challenges of implementing problem tree analysis were in the organization. Their key responses are as follows:

*“It may be difficult to understand all effects and causes of a problem right from the beginning, requires time to bring all relevant actors together and to discuss the problems of their water and sanitation system, decisions contained in the decision tree are based on expectations, and irrational expectations can lead to flaws and errors in the decision tree.”*

From the questionnaires some other key responses were, “Although the decision tree follows a natural course of events by tracing relationships between events, it may not be possible to plan for all contingencies that arise from a decision, and such oversights can lead to bad

decisions”. One employee in the health sector stated that “decision trees are prone to errors in classification, owing to differences in perceptions and the limitations of applying statistical tools”.

The problem analysis is the phase in which the negative aspects of a given situation are identified, establishing the cause and effect relationship between the observed problems. The problem analysis is of prime importance with regard to project planning, since it strongly influences the design of all possible intervention. The respondents were required to explain how problem tree analysis influences performance of community based projects. The key responses obtained from majority of the employees were:

*“Their project performance is enhanced through the use of problem tree analysis since problems can be broken down into manageable and definable chunks. This enables a clearer prioritization of factors and helps focus objectives, there is a better understanding of the problem and its often interconnected and even contradictory causes and it identifies the constituent issues and arguments, and can help establish who and what the political actors and processes are at each stage.”*

Another responses was that,

*“It provides an outline of the project plan, including the activities that need to be undertaken, the goal and the outcomes of the project and that process of analysis often helps build a shared sense of understanding, purpose and action”*

Project managers were also asked to rate the application of problem tree analysis in relation to performance of community based projects. The following are the key responses that were obtained from some of the project managers:

*“Project performance is enhanced through the use of problem tree analysis since problems can be broken down into manageable and definable chunks. This enables a clearer prioritization of factors and helps focus objectives, there is a better understanding of the problem and its often interconnected and even contradictory causes and it identifies the constituent issues and arguments, and*

*can help establish who and what the political actors and processes are at each stage.”*

*“ Problem tree analysis it provides an outline of the project plan, including the activities that need to be undertaken, the goal and the outcomes of the project and that process of analysis often helps build a shared sense of understanding, purpose and action”.*

Most project managers’ rating of the application of problem tree analysis in relation to performance of community based projects pointed to one major conclusion: That through its use, they were able to get a quick glance of how a range of complex issues contribute toward a problem and how this problem branches out into a set of consequences; and that decision trees are simple to use, easy to understand, and offer many advantages compared to other decision-making tools.

Further to the above one project manager stated that,

*“... use of problem tree analysis has a negative influence of the performance of community based projects in that the reliability of the information in the decision tree depends on feeding the precise internal and external information at the onset. Even a small change in input data can at times, cause large changes in the tree. Changing variables, excluding duplication information, or altering the sequence midway can lead to major changes and might possibly require redrawing the tree.”*

#### **4.8.5 Correlation Analysis**

Correlational analysis using Pearson’s Product Moment technique was done to determine the relationship between problem tree analysis and performance of community based projects. It was meant to identify the strength and direction of the association between the indicators of problem tree analysis and performance of community based projects. The results are summarized in Table 4.34.



**Table 4.34: Correlation Matrix for Problem Tree Analysis and Performance of Community Based Projects**

Pearson Correlation Matrix

	Performance of community based projects	of Application of Problem Tree Analysis
Performance of community based projects	1	-0.50*
Application of Problem Tree Analysis	-0.50*	1

\*Correlation significant at 0.05 level (2 tailed)

The correlation results in Table 4.34 depicts that the indicators, namely, project problems identified, project root causes and project effects all of which were transformed into the composite variable problem tree analysis had some level of inverse association with performance of community based projects. The Pearson moment of correlation coefficient of -0.50 meant that the problem tree analysis had a moderately high negative correlation with performance. This implied that the more the problem tree analysis is implored onto the project implementation the more the reduction in performance levels of the projects.

The third objective of the study was to examine how application of problem tree analysis influences performance of community based projects within Bungoma County. The independent variable in the study was problem tree analysis which had the following indicators: project identified problems, project root causes and project effects.

#### **4.8.6 Regression Analysis and Hypothesis Testing**

Regression analysis was used to establish the influence of application of Problem Tree Analysis on performance of community based projects. Hypothesis testing using p value was used because it gave the strength of the decision .The p values were used to measure the hypothesis of the study. According to (Mugenda & Mugenda, 2012) a significance level of 0.05 is preferred because it represented the results to be at 95% confidence level. The

regression analysis results were presented using the model summary, analysis of variance (ANOVA) and the beta coefficients Tables

The following hypothesis was tested using simple regression model to satisfy the requirements of the third objective.

**Hypothesis 3**

H<sub>0</sub>: Application of problem tree analysis does not have a significant influence on performance community based projects in Bungoma County.

H<sub>1</sub>: Application of problem tree analysis has a significant influence on performance of community based projects within Bungoma County.

The null hypothesis was tested using the following linear regression model:

$$Y = \beta_0 + \beta_3 X_3 + e_3$$

Where:

Y= Performance of Community Based Projects

$\beta_0$ =regression constant

X<sub>3</sub>= Problem Tree Analysis

e<sub>3</sub>= error term

The results are presented in Table 4.35.

**Table 4.35: Model Summary for Application of Problem Tree Analysis**

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
dimension 1	0.462	0.214	0.19	0.89752

a. Predictors: (Constant), Problem Analysis

Table 4.35 presents the regression model summary on application of problem tree analysis versus the performance of community based projects in Bungoma County. As presented in the Table, the coefficient of determination R square is 0.462 and R is 0.214 which is taken at 0.05-level of significance. The Coefficient of determination R indicates that 21.4% of the variations in performance of community based projects are explained by the application of problem tree analysis. This implies that there exists a significant relationship between application of problem tree analysis and performance of community based projects in Bungoma County.

**Table 4.36: Analysis of Variance (ANOVA) for Problem Tree Analysis**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.930	3	5.643	8.971	.000
	Residual	79.749	99	.806		
	Total	96.680	102			

a. Dependent Variable: Performance of community based projects

b. Predictors: (Constant), Application of Problem Tree Analysis

The analysis of variance (ANOVA) results as shown in Table 4.36 above confirms further that the model fit is appropriate for this data since the p-value of 0.00 is much less than 0.05. This implies therefore that the overall F (8.971) with  $p < 0.05$  indicates that we rejected the Null hypothesis and showed that there exists a significant relationship between the application of stakeholder analysis and performance of community based projects in Bungoma county.

**Table 4.37: Regression Coefficients: Problem Tree Analysis**

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
	(Constant)	3.22	0.534		6.033	0.000
1	Problem Tree Analysis	-0.452	-0.111	-0.439	-4.079	0.00

a. Dependent Variable: Performance of Community based projects

The results in Table 4.37 further indicated that the application of stakeholder analysis has a negative significant influence on performance of community based projects. The fitted regression model  $Y = 3.22 - 0.452X$ . This implies that for every unit increase in application of problem tree analysis the level of performance of community based projects decreases by 0.452. Even when application of problem tree analysis is not applied, the performance of community based projects would still be significant at 3.22 units. This indicates that there were still other factors driving performance such as logical framework, application of Gantt charts, stakeholder analysis and managers competencies among others.

The overall F-statistic was (8.971) with  $p = 0.000 < 0.05$ , suggesting that there was statistically significant relationship between application of problem tree analysis and performance of community based projects. Based on the results, the null hypothesis which stated that there is no significant relationship between application of problem tree analysis and performance of community based projects was rejected. It was concluded therefore that application of project tree analysis has a statistically significant influence on the performance of community based projects.

There are limited studies that address the interaction of problem identified, project root causes, project effects and performance of community based projects. In this section, the main findings for the third objective are linked to the previous studies that were reviewed under the literature

review. The following hypothesis is stated: Hypothesis H<sub>03</sub>: Application of problem tree analysis has no significant influence on performance community based projects within Bungoma County.

A study by Campbell *et al.* (2006) established that creating a problem tree should ideally be undertaken as a participatory group event using visual techniques, such as flipcharts in which identified stakeholders can write their individual problem statements. They further argue that a properly planned project address the real needs of the beneficiaries and is therefore based upon a correct and complete analysis of the existing situation. A study by Chikita (2009) concluded that the guiding principle in deciding whether community participation is possible and practical during project execution is the identification of root causes. The facts of root causes found in the preliminary stage are valuable in reaching a successful conclusion. A study by McCawley (2014) argues that this is very valuable as it identifies factors that may not be addressed by the planned intervention. He further argues that existing regulations may be a factor in the problem, but this may not be impacted upon by the planned intervention. This may result in the failure to achieve project objectives. A study by White and Fortune (2002) stated that this is often the first step in finding win-win solutions. They further found out that it identifies the constituent issues and arguments, and can help establish who and what the political actors and processes are at each stage, it can help establish whether further information; evidence or resources are required to make a strong case, or build a convincing solution; presents issues rather than apparent; future or past issues are dealt with and identified and the process of analysis often helps build a shared sense of understanding, purpose and action.

Hypothesis 3 was supported by data and hence there was a significant relationship between application of problem tree analysis and performance of community based projects. Considering the previous studies mentioned above, this study came out with new findings. The continued application of problem tree analysis has a negative influence on performance of community based projects.

#### **4.9 Gantt Chart and Performance of Community Based Projects**

The fourth objective of the study which sought to establish the extent to which utilization of Gantt charts influences performance of community based projects within Bungoma County.

The respondents were therefore asked to state their perceptions on project resources, work accomplished and time taken as discussed in subsequent sections.

#### 4.9.1 Project Resources and Performance of Community Based Projects

Project resources were measured by providing respondents with statements rated on a five-point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.38.

**Table 4.38: Project Resources and Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F(%)	F(%)	F(%)	F(%)	F(%)			F(%)
Resources needed for the project are sought before project commencement	3(2.9)	4(3.9)	6(5.8)	9(8.7)	81(78.6)	4.5631	0.97689	103(100)
Resources identified meet economic requirements of the project	2(1.9)	2(1.9)	4(3.9)	16(15.5)	79(76.7)	4.6311	0.81638	103(100)
Project schedules are present	13(12.6)	7(6.8)	5(4.9)	5(4.9)	73(70.9)	4.1456	1.47135	103(100)
Resource allowance is made on each activity	3(2.9)		4(3.9)	14(13.6)	80(77.7)	4.6117	0.88819	103(100)
Top management approve resource allocation	4(3.9)	2(1.9)	2(1.9)	15(14.6)	80(77.7)	4.6019	0.93242	103(100)
<b>Composite for Project Resources</b>						<b>4.51068</b>	<b>1.01704</b>	

The results in Table 4.38 show that 81(78.6%) of the respondents strongly agreed that resources needed for the project are sought before project commencement; 9(8.7%) of the respondents agreed that resources needed for the project are sought before project

commencement; 6(5.8%) of the respondents neither agreed nor disagreed that resources needed for the project are sought before project commencement; 4(3.9%) of the respondents disagreed that resources needed for the project are sought before project commencement and 3(2.9%) of the respondents strongly disagreed that resources needed for the project are sought before project commencement. Further, 79(76.7%) strongly agreed that resources identified meet economic requirements of the project; 16(15.5%) agreed that resources identified meet economic requirements of the project; 4(3.9%) neither agreed nor disagreed that resources identified meet economic requirements of the project; 2(1.9%) disagreed that resources identified meet economic requirements of the project; and 2(1.9%) strongly disagreed that resources identified meet economic requirements of the project.

As shown from the study results 73(70.9%) of the respondents strongly agreed that project schedules are present; 5(4.9%) of the respondents agreed that project schedules are present; 5(4.9%) of the respondents neither agreed nor disagreed that project schedules are present; 7(6.8%) of the respondents disagreed that project schedules are present; and 13(12.6%) of the respondents strongly disagreed that project schedules are present. Further, 80(77.7%) strongly agreed that resources allowance is made on each activity; 14(13.6%) agreed that resources allowance is made on each activity; 4(3.9%) neither agreed nor disagreed that resources allowance is made on each activity; 2(1.9%) disagreed that resources allowance is made on each activity; and 3(2.9%) strongly disagreed that resources allowance is made on each activity. The research findings indicate that 80(77.7%) strongly agreed that top management approve resource allocation, 15(14.6%) agreed that top management approve resource allocation; 2(1.9%) neither agreed nor disagreed that top management approve resource allocation; 2(1.9%) disagreed that top management approve resource allocation; and 4(3.9%) strongly disagreed that top management approve resource allocation. The parameter that has the most influence in the performance of community based projects is project resources. Without the right resources community based projects cannot be initiated nor cannot progress just like any business.

The study results showed that majority of the respondents strongly agreed ( $M=4.56$ ,  $SDV=0.98$ ) that resources needed for the project are sought before project commencement. They also agreed ( $M=4.63$ ,  $SD=0.82$ ) that resources identified meet economic requirements of the project. Respondents strongly agreed ( $M=4.15$ ,  $SDV=1.47$ ) that project schedules are

present. The participants strongly agreed (M=4.61, SDV=0.89) that resource allowance is made on each activity and they strongly agreed (M=4.60, SDV=0.93) that top management approve resource allocation. Overall, the surveyed employees agreed (M=4.51, SDV=1.02) that project resources influences community based projects performance. The results imply that project resources are very important in the performance of community based projects since without the right resources the project cannot commence operations.

#### 4.9.2 Work Accomplished on Performance of Community Based Projects

Work accomplished was measured by providing respondents with statements rated on a five-point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.39.

Table 4.39: Work Accomplished and Performance of Community Based Projects

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F(%)	F(%)	F(%)	F(%)	F(%)			F(%)
Type of work accomplished within time is captured	1(1.0)	3(2.9)	7(6.8)	7(6.8)	85(82.5)	4.6699	0.80912	103(100)
Amount of work accomplished within time is recorded	4(3.9)	2(1.9)	5(4.9)	7(6.8)	85(82.5)	4.6214	0.96117	103(100)
Work accomplished after time is reviewed	1(1.0)	3(2.9)	1(1.0)	7(6.8)	91(83.3)	4.7864	0.69523	103(100)
Project matches skilled workers to appropriate jobs	2(1.9)	2(1.9)	3(2.9)	6(5.8)	90(87.4)	4.7476	0.77609	103(100)
Absenteeism of staff is high in the project	4(3.9)	1(1.0)	10(9.7)	8(7.8)	80(77.7)	4.5437	0.98793	103(100)
<b>Composite for Work Accomplished</b>						<b>4.6738</b>	<b>0.84591</b>	



The results in Table 4.39 show that 85(82.5%) of the respondents strongly agreed that type of work accomplished within time is captured; 7(6.8%) of the respondents agreed that type of work accomplished within time is captured; 7(6.8%) of the respondents neither agreed nor disagreed that type of work accomplished within time is captured; 3(2.9%) of the respondents disagreed that type of work accomplished within time is captured; and 1(1.0%) of the respondents strongly disagreed that type of work accomplished within time is captured. Further, 85(82.5%) strongly agreed that amount of work accomplished within time is recorded; 7(6.8%) agreed that amount of work accomplished within time is recorded; 5(4.9%) neither agreed nor disagreed that amount of work accomplished within time is recorded; 2(1.9%) disagreed that amount of work accomplished within time is recorded; and 4(3.9%) strongly disagreed that amount of work accomplished within time is recorded.

The study results indicates that 91(83.3%) of the respondents strongly agreed that work accomplished after time is reviewed; 7(6.8%) of the respondents agreed that work accomplished after time is reviewed; 1(1.0%) of the respondents neither agreed nor disagreed that work accomplished after time is reviewed; 3(2.9%) of the respondents disagreed that work accomplished after time is reviewed; and 1(1.0%) of the respondents strongly disagreed that work accomplished after time is reviewed. Further, 90(87.4%) strongly agreed that project matches skilled workers to appropriate jobs; 6(5.8%) agreed that project matches skilled workers to appropriate jobs; 3(2.9%) neither agreed nor disagreed that project matches skilled workers to appropriate jobs; 2(1.9%) disagreed that project matches skilled workers to appropriate jobs; and 2(1.9%) strongly disagreed that project matches skilled workers to appropriate jobs. The research findings indicate that 80(77.7%) strongly agreed that absenteeism of staff is high in the project; 8(7.8%) agreed that absenteeism of staff is high in the project; 10(9.7%) neither agreed nor disagreed that absenteeism of staff is high in the project; 1(1.0%) disagreed that absenteeism of staff is high in the project; and 4(3.9%) strongly disagreed that absenteeism of staff is high in the project. The parameter that has more influence in the performance of community based projects is that work accomplished must meet scheduled cost and time. In community based projects, it is very important to ensure work accomplished meets scheduled cost and time.

The study results shows that majority of the respondents strongly agreed ( $M=4.67$ ,  $SDV=0.81$ ) that type of work accomplished within time is captured. They also agreed ( $M=4.62$ ,  $SD=0.96$ )

that amount of work accomplished within time is recorded. Respondents strongly agreed (M=4.79, SDV=0.70) work accomplished after time is reviewed. The participants strongly agreed (M=4.75, SDV=0.78) that project matches skilled workers to appropriate jobs and they strongly agreed (M=4.54 SDV=0.99 that data collected is always analysed. Overall, the surveyed employees agreed (M=4.67, SDV=0.84) that work accomplished influences community based project performance. The results imply that work accomplished is very important in the performance of community based projects since less work is accomplished than planned for will influence how the project performs both in the short and long term.

### 4.9.3 Time Taken and Performance of Community Based Projects

Time taken for the project was measured by providing respondents with statements rated on a five-point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.40.

**Table 4.40: Time Taken and Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F(%)	F(%)	F(%)	F(%)	F(%)			F(%)
Amount of time taken to accomplish task is monitored	2(1.9)	2(1.9)	10(9.7)	10(9.7)	79(76.7)	4.5728	0.89225	103(100)
There is a lot of reworking in the project	2(1.9)	1(1.0)	3(2.9)	8(7.8)	89(86.4)	4.7573	0.73386	103(100)
Schedules which meet deadlines are identified	2(1.9)	2(1.9)	2(1.9)	11(10.7)	86(83.5)	4.7184	0.77228	103(100)
Timelines are identified	6(5.8)	2(1.9)	2(1.9)	11(10.7)	82(79.6)	4.5631	1.05412	103(100)
There are frequent project design changes	2(1.9)	0(0)	3(2.9)	9(8.7)	89(86.4)	4.7767	0.68502	103(100)
<b>Composite for Time Taken</b>						<b>4.6776</b>	<b>0.82756</b>	

The results in Table 4.40 show that 79(76.7%) of the respondents strongly agreed that the amount of time taken to accomplish task is monitored; 10(9.7%) of the respondents agreed that

amount of time taken to accomplish task is monitored; 10(9.7%) of the respondents neither agreed nor disagreed that amount of time taken to accomplish task is monitored; 2(1.9%) of the respondents disagreed that amount of time taken to accomplish task is monitored; and 2(1.9%) of the respondents strongly disagreed that amount of time taken to accomplish task is monitored. Further, 89(86.4%) strongly agreed that there is a lot of reworking in the project, 8(7.8%) agreed that there is a lot of reworking in the project, 3(2.9%) neither agreed nor disagreed that there is a lot of reworking in the project, 1(1.0%) disagreed that there is a lot of reworking in the project, and 2(1.9%) strongly disagreed that there is a lot of reworking in the project.

As shown from the results 86(83.5%) of the respondents strongly agreed that schedules which meet deadlines are identified; 11(10.7%) of the respondents agreed that schedules which meet deadlines are identified; 2(1.9%) of the respondents neither agreed nor disagreed that schedules which meet deadlines are identified; 2(1.9%) of the respondents disagreed that schedules which meet deadlines are identified; and 2(1.9%) of the respondents strongly disagreed that schedules which meet deadlines are identified. Further, 82(79.6%) strongly agreed that timelines are identified; 11(10.7%) agreed that timelines are identified; 2(1.9%) neither agreed nor disagreed that timelines are identified; 2(1.9%) disagreed that timelines are identified; and 6(5.8%) strongly disagreed that timelines are identified. The research findings indicate that 89(86.4%) strongly agreed that there are frequent project design changes; 9(8.7%) agreed there are frequent project design changes; 3(2.9%) neither agreed nor disagreed that there are frequent project design changes; 0(0%) disagreed that there are frequent project design changes; and 2(1.9%) strongly disagreed that there are frequent project design changes. The parameter that has the most influence in the performance of community based projects is that of time taken to undertake the project. In community based projects, it is very important to ensure that the project is undertaken within the scheduled time.

The study results showed that the respondents strongly agreed ( $M=4.57$ ,  $SDV=0.89$ ) amount of time taken to accomplish task is monitored. They also agreed ( $M=4.76$ ,  $SD=0.73$ ) that there is a lot of reworking in the project. Respondents strongly agreed ( $M=4.72$ ,  $SDV=0.77$ ) that schedules which meet deadlines are identified. The participants strongly agreed ( $M=4.56$ ,  $SDV=1.05$ ) that timelines are identified; and agreed ( $M=4.78$ ,  $SDV=0.69$ ) that there are frequent project design changes. Overall, the surveyed employees agreed ( $M=4.68$ ,

SDV=0.83) that time taken influences community based project performance. The results imply that time taken in a project is very important in the performance of community based projects since time is an important aspect in community based projects.

#### 4.9.4 Overall Descriptive Analysis on Gantt Chart

The overall findings on the extent to which utilization of Gantt charts influence performance of community based projects are shown in Table 4.41. The following have been considered under Gantt chart: project resources, project work accomplished and project time taken.

**Table 4.41: Means and Standard Deviations for Gantt Chart**

<b>Components of the use of Gantt Charts</b>	<b>N</b>	<b>Mean</b>	<b>SDV</b>
Project Resources	103	4.51068	1.01704
Project Work Accomplished	103	4.6738	0.84591
Project Time taken	103	4.6776	0.82756
<b>Overall use of Gantt Chart analysis</b>		<b>4.6207</b>	<b>0.89683</b>

The study results in Table 4.41 show that the overall mean for Gantt chart was 4.62 and the standard deviation was 0.90. The most dominant indicator was project time taken (M=4.68, SDV=0.83), followed by project work accomplished (M=4.67, SDV=0.85) and project resources (M=4.51, SDV=1.02). This implies that Gantt chart is very important in the performance of community based projects because road without proper planning in regard to resources, work accomplishment and time taken for activities project cannot succeed.

The study sought to establish from the employees who participated the challenges of implementing Gantt chart in the organization. Different feedback was given as follows:

One respondent's feedback was that,

*“Gantt charts are not perfect and all too often they become overly complex with too many dependencies and activities. This is a trap many new project managers fall into when they start using planning tools. It is much better to produce a clear and simple plan that shows the main work packages in summary, than a plan with so much detail the overall impression of project progress are lost.”*

One employee argued that the challenge with Gantt chart was that,

*“... it let the work package manager put together the day-to-day detail of the activities within a work package, while the project schedule concentrates on the interfaces between project teams.”*

Another employee corroborated that,

*“Gantt chart is not good at showing the relative priorities of individual tasks and the resources expended on a task.”*

Other employees argued that,

*“Tasks are prioritized completion within budget, schedule and after donor funding influence performance of community based projects on the amount of float not their importance to the project. For example, they can clearly show the elapsed time of a task but cannot so easily communicate how many people may be needed to complete that task. So if not backed up by other data they can give a misleading impression to stakeholders.”*

The study sought from the respondents to explain how Gantt chart influences performance of community based projects. The key responses from project managers in relation to this were:

*“Gantt charts influences the performance of community based projects because it allows to plan and analyzes more complex projects by giving the ability to plan and schedule tasks, allocate resources and develop a critical pathway for project completion. They also allow monitoring every stage of the project to ensure it is on track and also implement remedial action if necessary.”*

Another project manager number, was of the opinion that,

*“An essential concept behind project planning is that some activities are dependent on other activities being completed first”.*

Yet another project manager stated that,

*“Dependent activities need to be completed in a sequence, with each stage being more-or-less completed before the next activity can begin.”*

Another project manager briefly observed thus,

*“We can call dependent activities sequential or linear.”*

In a contrast to the above opinion, one project manager observed that,

*“Other activities are not dependent on completion of any other tasks. These may be done at any time before or after a particular stage is reached. These are nondependent or parallel tasks.”*

Results of interviews held with project managers of community based projects indicate that Gantt chart influences performance of community based projects to a great extent. The following is one of the key responses that was obtained from the project managers:

*“For community based organizations in particular the Gantt chart is a vital tool that can make or break a project and business undertaking. This might sound exaggerated, but while they are not a magic cure-all, they can assist in keeping a project on the right track. Gantt charts are an easy way to schedule tasks and track the progress of the project against deadline.”*

One project manager said that,

*“The project manager and the team members can easily see what needs to be done at what time and if there are any delays the chart can easily be altered to balance it. This is important to remember, a Gantt chart is not carved in stone.”*

Another said that,

*“Having a perfect chart does not guarantee a successful project execution on deadline, it is also crucial to compare the projected progress to the real progress and then update the chart accordingly”.*

#### 4.9.5 Correlation Analysis

Correlational analysis using Pearson's Product Moment technique was done to determine the relationship between Gantt chart and performance of community based projects. It was meant to identify the strength and direction of the association between the indicators of Gantt chart and performance of community based projects. The results are summarized in Table 4.42.

**Table 4.42: Gantt Chart Correlation Results**

	Performance of Community Based Projects	Application of Gantt Chart
Performance of Community Based Projects	1	0.637*
Application of Gantt Chart	0.637*	1

\*Correlation significant at 0.05 level (2 tailed)

The correlation results in Table 4.42 indicate that the indicators, namely, project resource and work accomplished which had been transformed into one composite variable for application of Gantt Chart had some level of association with performance of community based projects. Application of Gantt Chart had a Pearson correlation coefficient of 0.637 depicting a moderately strong level of association with performance of community based projects.

The fourth objective of the study was to establish the extent to which application of Gantt charts influences performance of community based projects within Bungoma County. The independent variable in the study was application of Gantt chart which had the following indicators: project resources, work accomplished and time taken.

#### 4.9.6 Regression Analysis and Hypothesis Testing

Regression analysis was used to establish the influence of application of Gantt Chart on performance of community based projects. Hypothesis testing using p value was used because it gave the strength of the decision. The p values were used to measure the hypothesis of the study. According to (Mugenda & Mugenda, 2012) a significance level of 0.05 is preferred

because it represented the results to be at 95% confidence level. The regression analysis results were presented using the model summary, analysis of variance (ANOVA) and the beta coefficients Tables

The following hypothesis was tested using simple regression model to satisfy the requirements of the fourth objective.

Hypothesis 4

H<sub>0</sub>: Application of Gantt charts does not have a significant influence on performance community based projects within Bungoma County.

The null hypothesis was tested using the following linear regression model:

$$Y = \beta_0 + \beta_4 X_4 + e_4$$

Where:

Y= Performance of Community Based Projects

$\beta_0$ =regression constant

X<sub>4</sub>= Gantt Charts

e<sub>4</sub>= error term

The results are presented in Table 4.43.

**Table 4.43: Model Summary for Application of Gantt Chart**

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
dimension 1	0.335	0.112	0.058		0.94475

a. Predictors: (Constant), Gantt Chart

Table 4.43 presents the regression model summary on application of Gantt chart versus the performance of community based projects in Bungoma County. As presented in the Table, the coefficient of determination R square is 0.335 and R is 0.112 which is taken at 0.05- level of significance. The Coefficient of determination R indicates that 11.2% of the variations in



performance of community based projects are explained by the application of Gantt chart. This implies that there exists a significant relationship between application of problem Gantt chart and performance of community based projects in Bungoma County.

**Table 4.44: Analysis of Variance (ANOVA) for Gantt Chart**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.317	3	2.772	4.177	.030
	Residual	88.363	99	.893		
	Total	96.680	102			

a. Dependent Variable: Performance of community based projects

b. Predictors: (Constant), Application of Gantt Chart

The analysis of variance (ANOVA) results as shown in Table 4.44 above confirms further that the model fit is appropriate for this data since the p-value of 0.03 is less than 0.05. This implies therefore that the overall F(8.177) with  $p < 0.05$  indicates that we reject the Null hypothesis and show that there exists a significant relationship between the application of Gantt Chart and performance of community based projects in Bungoma county.

**Table 4.45: Regression Coefficients: Gantt Chart**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.371	0.15		9.143	0.000
	Gantt Chart	0.5	0.34	0.171	3.193	0.002

---

a. Dependent Variable: Performance of Community based projects

The results in Table 4.45 further indicated that the application of Gantt chart has a positive significant influence on performance of community based projects. The fitted regression model  $Y = 1.371 + 0.50X$ . This implies that for every unit increase in application of Gantt chart the level of performance of community based projects increases by 0.50. Even when application of problem tree analysis is not applied, the performance of community based projects would still be significant at 1.371 units. This indicates that there were still other factors driving performance such as logical framework, application of Problem Tree analysis, stakeholder analysis and managers competencies among others.

The overall F-statistic was (4.177) with  $p = 0.03 < 0.05$ , suggesting that there was a statistically significant relationship between application of Gantt chart and performance of community based projects. Based on the research findings, we reject the null hypothesis which stated that there is no significant relationship between the application of Gantt chart and performance of community based projects; and conclude that application of Gantt chart has a statistically significant influence on the performance of community based projects.

In this section, the main findings for the fourth objective are linked to the previous studies that were reviewed under the literature review. The following hypothesis was stated: Hypothesis  $H_0$ : Utilization of Gantt charts have no significant influence on performance community based projects within Bungoma County.

In their study Geraldi and Lechter (2012) argue that Gantt charts are a very useful tool for project management used to keep track of progress for each activity and how the costs are running. A study by Gcek (2008) argues that the horizontal axis spans the expected duration of the project, with dates written along the top in hours, days, weeks or whatever time frame is most appropriate. A study by Arain (2010) notes the importance of project management integration including project scope management, project time management, project cost management, project quality management, project human resources management, project communications management, project risk management and project procurement management. A study by Stare (2011) shows that a high level of project organizational culture and a high impact level of measured culture factors on project performance. An increasing level of project

manager authority in different organization types positively impacts on several cultural dimensions and also has a direct impact on the project's performance. A study by Booker (2007) established that achieving milestones are occasions for celebration, to pop the champagne. They help to boost the morale of personnel involved in making the project a success. If the Gantt chart is drawn up along with suitable milestones of work accomplished by using some special symbol such as brightly-coloured diamonds, and the chart is kept in some centrally visible place, it would motivate all the people to achieve them.

Hypothesis 4 was supported by data and hence there was a significant relationship between application of Gantt chart and performance of community based projects. It had been expected that application of Gantt chart would have a significant relationship with performance of community based projects since it guides how projects activities should be carried out. Considering the previous studies mentioned above, this study has come out with new findings.

#### **4.10 Combined Project Design Tools and Performance of Community Based Projects**

In this study a combination of logical framework, stakeholder analysis, problem tree analysis, and Gantt chart was referred to as project design tools. The joint influence of these tools on the performance of community based projects was tested using inferential statistics in this section as the fifth objective of the study.

##### **4.10.1 Correlational Analysis of Project Design Tools and Performance of Community Based Projects**

Correlational analysis using Pearson's Product Moment technique was done to determine the relationship between the combined project management tools and the performance of Community Based projects. This was meant to identify the strength and direction of the relationship between the independent variable and dependent variable. The results are presented in Table 4.46.

**Table 4.46: Correlation Matrix for Project Design Tools and Performance of Community Based Projects**

		Application of logical framework	Application of stakeholder analysis	Application of problem tree analysis	Application of Gantt charts
Performance of Community Based Projects	Pearson Correlation	0.115	-0.56*	0.5*	0.637*
	Sig. (2-tailed)	0	0	0	0
N		103	103	103	103

\*Correlation significant at 0.05 level (2 tailed)

\*\*Correlation significant at 0.01 level (2 tailed)

The correlation results in Table 4.46 revealed that the indicators, namely, application of logical framework, application of stakeholder analysis, application of problem tree analysis and application of Gantt charts had a moderately strong correlation with the performance of community based projects. The application of logical framework had a correlation coefficient of 0.115 depicting a weak relationship with performance of community based projects. This correlation coefficient of 0.115 was however not statistically significant at both 0.05 and 0.01 level of significance. The application of stakeholder analysis had a correlation coefficient of -0.56 depicting a moderately strong negative influence on performance of community based projects. The application of problem tree analysis had a correlation coefficient of 0.5 depicting a moderately strong positive influence on performance. This correlation statistics was significant at 5% level of significance. The application of Gantt chart had a correlation coefficient of 0.637 which depicted a strong positive statistically significant influence on performance of community based projects.

#### **4.10.2 Inferential Analysis of Project Design Tools on Performance of Community Based Projects.**

The fifth objective of the study was to examine extent of the combined influence of the application of project design tools on performance of community based projects within Bungoma County. Project design tools were a combination of independent variables in the study. Data was collected using a five-point Likert-type scale.

#### **4.10.3 Regression Analysis and Hypothesis Testing**

Regression analysis was used to establish the influence of application of the combined project design tools on performance of community based projects. Hypothesis testing using p value was used because it gave the strength of the decision .The p values were used to measure the hypothesis of the study. According to (Mugenda & Mugenda, 2012) a significance level of 0.05 is preferred because it represented the results to be at 95% confidence level. The regression analysis results were presented using the model summary, analysis of variance (ANOVA) and the beta coefficients Tables

The following hypothesis was tested using multiple regression model to satisfy the requirements of the fifth objective.

#### **Hypothesis 5**

H<sub>5</sub>: Combined applications of project design tools do not have a significant influence on performance of community based projects in Bungoma County.

The null hypothesis was tested using the following multiple regression model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y – Performance of Community Based Projects

X<sub>1</sub> = Logical framework

X<sub>2</sub> = Stakeholder Analysis

X<sub>3</sub> = Problem Tree Analysis      X<sub>4</sub> = Gantt Charts

While  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  are coefficient of each independent variable ( $i=1,2,3,4,5$ ) and  $\epsilon$  is the error term.

The results are presented in Table 4.47.

**Table 4.47: Model Summary for the Combined Project Design Tools**

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
dimension 1	0.302	0.208	0.201	0.86657

a. Predictors: (Constant), Logical framework, Stakeholder analysis, problem tree analysis Gantt Chart

Table 4.47 presents the regression model summary on application of combined project design tools versus the performance of community based projects in Bungoma County. As presented in the Table, the coefficient of determination R square is 0.302 and R is 0.208 which is taken at 0.05- level of significance. The Coefficient of determination R indicates that 20.8% of the variations in performance of community based projects are explained by the application of the combined project design tools. This implies that there exists a significant relationship between application of problem logical framework, stakeholder analysis, problem tree analysis and Gantt chart and performance of community based projects in Bungoma County.

**Table 4.48: Analysis of Variance (ANOVA) for the Combined Project Design Tools**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.087	4	5.772	7.822	.000
	Residual	73.592	98	.751		
	Total	96.680	102			

a. Dependent Variable: Performance of community based projects

b. Predictors: (Constant), Application of Logical Framework, Stakeholder Analysis, Problem Tree analysis and Gantt Chart

The analysis of variance (ANOVA) results as shown in Table 4.48 above confirms further that the model fit is appropriate for this data since the p-value of 0.000 is less than 0.05. This implies therefore that the overall F(7.822) with  $p < 0.05$  indicated that we rejected the Null hypothesis and show that there exists a significant relationship between the application of the combined project design tools and performance of community based projects in Bungoma county.

**Table 4.49: Regression Coefficients: Combined Project Design Tools on Performance of Community Based Projects**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.021	0.236		4.32	0.000
Application of logical framework	0.11	0.103	0.11	1.07	0.000
Application of stakeholder analysis	-0.064	0.111	-0.059	-5.076	0.002
Application of problem tree analysis	0.064	0.111	0.059	5.876	0.001
Application of Gantt charts	0.09	0.123	0.074	4.7831	0.0005

Dependent Variable: Performance of community based projects

The results in Table 4.49 further indicated that the application of the combined project design tools has a significant influence on performance of community based projects. The fitted regression model  $Y = 1.021 + 0.11X_1 + 0.064X_2 - 0.064X_3 + 0.09X_4$ . This implies that for every unit change by the combined project design tools, the level of performance of community based projects will increase by 0.11, 0.064, 0.09 and reduce by 0.064 with respect to logical framework, stakeholder analysis, Gantt chart and problem tree analysis respectively. Even when any the project design tools have not been applied, the performance of community based projects would still be significant at 1.021 units. This indicates that there were still other factors driving performance such as managers' competencies among others.

The overall F-statistic was (7.822) with  $p = 0.000 < 0.05$  suggesting that there was a statistically significant relationship between project design tools and the performance of community based projects. Based on the research findings, we reject the null hypothesis which stated that there is no significant relationship between project design tools and performance of community



based projects; and conclude that project design tools has a statistically significant influence on the performance of community based projects.

There are limited studies that address the interaction of logical framework, stakeholder analysis, problem tree analysis and Gantt chart and the performance of community based projects. In this section, the main findings for the fifth objective are linked to the previous studies that were reviewed under the literature review. The following hypothesis was stated: Hypothesis H<sub>05</sub>: Combined applications of project design tools have no significant influence on performance of community based projects within Bungoma County.

A study by Thamhain (2013) found out that the main variables related to the project teams that influence success, are the environment of the team and team performance as much as project design tools. A study by Tekleab (2009) reported that every project should evolve to meet a customer's expectations in all three categories. However, many forces intervene and attempt to push projects off course. It is therefore essential to manage the projects effectively through proper project design tools in the planning, scheduling and control as a project requires a heavy investment and is associated with risks and uncertainties. A study by Taborda (2010) found out that project management harnesses the competencies of various individuals, grouping them together and enabling them to achieve the objectives of the project and ensure its success.

Hypothesis was supported by data and hence there was a significant relationship between project design tools and the performance of community based projects. Considering the previous studies mentioned above, this study has come out with new findings.

#### **4.11 Project Manager`s Competencies and the Relationship Between Project Design Tools and Performance of Community Based Projects**

This was the sixth objective of the study which sought to establish the extent to which the project manager`s competencies influence the relationship between the application of project design tools and the performance of community based projects within Bungoma County. This focused on resource mobilization, team management and technical competencies. These are discussed in the subsequent themes.

#### 4.11.1 Resource Mobilization and Performance of Community Based Projects

Resource mobilization was measured by providing respondents with statements rated on a five-point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.50.

**Table 4.50: Resource Mobilization and Performance of Community Based Projects**

Statements	SD F(%)	D F(%)	NAD F(%)	A F(%)	SA F(%)	Mean	SDV	Total F(%)
Our resource mobilization skills support organizational sustainability	7(6.8)	1(1.0)	2(1.9)	9(8.7)	84(81.6)	4.5728	1.08105	103(100)
Our organization has sound financial management system	1(1.0)	1(1.0)	9(8.7)	16(15.5)	76(73.8)	4.6019	0.77130	103(100)
We depend on external funding	3(2.9)	1(1.0)	4(3.9)	6(5.8)	89(86.4)	4.7184	0.83334	103(100)
Staff are trained on funding proposal writing skills	2(1.9)	3(2.9)	2(1.9)	6(5.8)	90(87.4)	4.7379	0.80393	103(100)
Coordinated resource mobilization approach exists	1(1.0)	2(1.9)	2(1.9)	13(12.6)	85(82.5)	4.7379	0.68544	103(100)
<b>Composite for Resource Mobilization</b>						<b>4.67378</b>	<b>0.835012</b>	

The results in Table 4.50 show that 84(81.6%) of the respondents strongly agreed that their resource mobilization skills supports organizational sustainability; 9(9.7%) of the respondents agreed that their resource mobilization skills supports organizational sustainability; 2(1.9%) of the respondents neither agreed nor disagreed that their resource mobilization skills supports organizational sustainability; 1(1.0%) of the respondents disagreed that their resource mobilization skills supports organizational sustainability; and 7(6.8%) of the respondents strongly disagreed that their resource mobilization skills supports organizational sustainability. Further, 76(73.8%) strongly agreed that their organization has sound financial management

system; 16(15.5%) agreed that their organization has sound financial management system; 9(9.7%) neither agreed nor disagreed that their organization has sound financial management system; 1(1.0%) disagreed that their organization has sound financial management system; and 1(1.0%) strongly disagreed that their organization has sound financial management system.

The study results shows that 89(86.4%) of the respondents strongly agreed that they depend on external funding; 6(5.8%) of the respondents agreed that they depend on external funding; 4(3.9%) of the respondents neither agreed nor disagreed that they depend on external funding; 1(1.0%) of the respondents disagreed that they depend on external funding; and 3(2.9%) of the respondents strongly disagreed they depend on external funding. Further, 90(87.4%) strongly agreed that staff are trained on funding proposal writing skills; 6(5.8%) agreed that staff are trained on funding proposal writing skills; 2(1.9%) neither agreed nor disagreed that staff are trained on funding proposal writing skills; 3(2.9%) disagreed that staff are trained on funding proposal writing skills; and 2(1.9%) strongly disagreed that staff are trained on funding proposal writing skills. The research findings indicate that 85(82.5%) strongly agreed that a coordinated resource mobilization approach exists; 13(12.6%) agreed that a coordinated resource mobilization approach exists; 2(1.9%) neither agreed nor disagreed that a coordinated resource mobilization approach exists; 2(1.9%) disagreed that a coordinated resource mobilization approach exists; and 1(1.0%) strongly disagreed that a coordinated resource mobilization approach exists. The parameter that has the most influence in the performance of community based projects is resource mobilization. In community based projects, it is very important to mobilize enough funds to see a project through its life cycle.

The study results showed that the respondents strongly agreed ( $M=4.57$ ,  $SDV=1.08$ ) that their resource mobilization skills supports organizational sustainability. They also agreed ( $M=4.60$ ,  $SD=0.77$ ) that their organization has a sound financial management system. Respondents strongly agreed ( $M=4.72$ ,  $SDV=0.83$ ) that they depend on external funding. The participants strongly agreed ( $M=4.74$ ,  $SDV=0.80$ ) that staff are trained on funding proposal writing skills. They agreed ( $M=4.74$ ,  $SDV=0.69$ ) that a coordinated resource mobilization approach exists. Overall, the surveyed employees agreed ( $M=4.67$ ,  $SDV=0.84$ ) that resource mobilization influences community based projects performance. The results imply that resource mobilization is very important in the performance of community based projects since without the right amount of resource no project will commence operations.

#### 4.11.2 Team Management and Performance of Community Based Projects

Team management was measured by providing respondents with statements rated on a five-point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.51.

**Table 4.51: Team Management and Performance of Community Based Projects**

Statements	SD F(%)	D F(%)	NAD F(%)	A F(%)	SA F(%)	Mean	SDV	Total F(%)
Project manager has ability to coordinate a group of individuals	5(4.9)	2(1.9)	5(4.9)	9(8.7)	82(79.6)	4.5631	1.02584	103(100)
There are regular performance appraisals	3(2.9)	1(1.0)	1(1.0)	9(8.7)	89(86.4)	4.748	0.7886	103(100)
Our organization is focused on team-work	1(1.0)	2(1.9)	3(2.9)	8(7.8)	89(86.4)	4.7670	0.68890	103(100)
Project manager has adequate supervisory experience	3(2.9)	0(0)	6(5.8)	9(8.7)	85(82.5)	4.6796	0.83094	103(100)
Project manager has adequate team management experience	3(2.9)	1(1.0)	1(1.0)	5(4.9)	93(90.3)	4.7864	0.77524	103(100)
<b>Composite for Team Management</b>						<b>4.70882</b>	<b>0.821904</b>	

The results in Table 4.51 show that 82(79.6%) of the respondents strongly agreed that project manager has ability to coordinate a group of individuals; 9(8.7%) of the respondents agreed that project manager has ability to coordinate a group of individuals; 5(4.9%) of the respondents neither agreed nor disagreed that project manager has ability to coordinate a group of individuals; 2(1.9%) of the respondents disagreed that project manager has ability to coordinate a group of individuals; and 5(4.9%) of the respondents strongly disagreed that project manager has ability to coordinate a group of individuals. Further, 89(86.4%) strongly

agreed that there are regular performance appraisals; 8(8.7%) agreed that there are regular performance appraisals; 1(1.0%) neither agreed nor disagreed that there are regular performance appraisals; 1(1.0%) disagreed that there are regular performance appraisals; and 3(2.9%) strongly disagreed that there are regular performance appraisals.

The study results indicated that 89(86.4%) of the respondents strongly agreed that their organization is focused on team work; 8(7.8%) of the respondents agreed that their organization is focused on team work; 3(2.9%) of the respondents neither agreed nor disagreed that their organization is focused on team work; 2(1.9%) of the respondents disagreed that their organization is focused on team work; and 1(1.0%) of the respondents strongly disagreed that their organization is focused on team work. Further, 85(82.5%) strongly agreed that project manager has adequate supervisory experience; 9(8.7%) agreed that project manager has adequate supervisory experience; 6(5.8%) neither agreed nor disagreed that project manager has adequate supervisory experience; 0(0%) disagreed that project manager has adequate supervisory experience; and 3(2.9%) strongly disagreed that project manager has adequate supervisory experience. The research findings indicate that 93(90.3%) strongly agreed that there are frequent project design changes; 5(4.9%) agreed that project manager has adequate team management experience; 1(1.0%) neither agreed nor disagreed that project manager has adequate team management experience; 1(1.0%) disagreed that project manager has adequate team management experience; and 3(2.9%) strongly disagreed that project manager has adequate team management experience. In community based projects, it is very important to ensure that team management is considered for projects.

The study results showed that the respondents strongly agreed ( $M=4.56$ ,  $SDV=1.02$ ) that the project manager has ability to coordinate a group of individuals. They also agreed ( $M=4.75$ ,  $SD=0.73$ ) that there are regular performance appraisal. Respondents strongly agreed ( $M=4.77$ ,  $SDV=0.79$ ) that their organization is focused on team work. The participants strongly agreed ( $M=4.68$ ,  $SDV=0.83$ ) that the project manager has adequate supervisory experience, agreed ( $M=4.79$ ,  $SDV=0.78$ ) that the project manager has adequate team management experience. Overall, the surveyed employees agreed ( $M=4.68$ ,  $SDV=0.83$ ) that team management influences community based project performance. The results imply that team management is very important in the performance of community based projects since a well-coordinated team is aware of the objectives and goals that the community based project seek to achieve.

### 4.11.3 Technical Competencies to Activities and Performance of Community Based Projects

Technical competencies was measured by providing respondents with statements rated on a five-point Likert scale ranging from Strongly Disagree (SD); Disagree (D); Neither Agree Nor Disagree (NAD); Agree (A) and Strongly Agree (SA) from which to choose. The findings are presented in Table 4.52.

**Table 4.52: Assigning of Technical Competencies and Performance of Community Based Projects**

Statements	SD	D	NAD	A	SA	Mean	SDV	Total
	F	F	F	F	F			F
	(%)	(%)	(%)	(%)	(%)			(%)
Project manager is registered with relevant professional bodies	4(3.9)	3 (2.9)	4(3.9)	10(9.7)	82(79.6)	4.5825	0.98543	103(100)
Project manager has project management capability	2(1.9)	1(1.0)	8(7.8)	4(3.9)	88(85.4)	4.6990	0.81451	103(100)
Result focus approach in management	1(1.0)	4(3.9)	4(3.9)	8(7.8)	86(83.5)	4.6893	0.80475	103(100)
Our organization has recurrent training of managers	1(1.0)	1(1.0)	2(1.9)	17(16.5)	82(79.6)	4.7282	0.64465	103(100)
Team development abilities	3(2.9)	7(6.8)	3(2.9)	9(8.7)	81(78.6)	4.5340	1.03673	103(100)
<b>Composite for Technical Competencies</b>						<b>4.6466</b>	<b>0.857214</b>	

The results in Table 4.52 show that 82(79.6%) of the respondents strongly agreed that the project manager is registered with relevant professional bodies; 10(9.7%) of the respondents agreed that the project manager is registered with relevant professional bodies; 4(3.9%) of the respondents neither agreed nor disagreed that the project manager is registered with relevant

professional bodies; 3(2.9%) of the respondents disagreed that the project manager is registered with relevant professional bodies; and 4(3.9%) of the respondents strongly disagreed that the project manager is registered with relevant professional bodies. Further, 88(85.4%) strongly agreed that the project manager has project management capability; 4(3.9%) agreed that the project manager has project management capability; 8(7.8%) neither agreed nor disagreed that the project manager has project management capability; 1(1.0%) disagreed that the project manager has project management capability; and 2(1.9%) strongly disagreed that the project manager has project management capability.

The study results shows that 86(83.5%) of the respondents strongly agreed that there is result focus approach in management; 8(7.8%) of the respondents agreed that there is result focus approach in management; 4(3.9%) of the respondents neither agreed nor disagreed that there is result focus approach in management; 4(3.9%) of the respondents disagreed that there is result focus approach in management; and 1(1.0%) of the respondents strongly disagreed that there is result focus approach in management. Further, 82(79.6%) strongly agreed that their organization has recurrent training of managers; 17(16.5%) agreed that their organization has recurrent training of managers; 2(1.9%) neither agreed nor disagreed that their organization has recurrent training of managers; 1(1.0%) disagreed that their organization has recurrent training of managers, and 1(1.0%) strongly disagreed that their organization has recurrent training of managers. The research findings indicate that 81(78.6%) strongly agreed that they have team development abilities; 9(8.7%) agreed there they have team development abilities; 3(2.9%) neither agreed nor disagreed that they have team development abilities; 7(6.8%) disagreed that they have team development abilities, and 3(2.9%) strongly disagreed that they have team development abilities. The study results state that technical competencies influence performance of community based projects. Staff with technical competencies are able to come up with the right resource allocation strategies that will be beneficial to the implementation of the project.

The study results showed that the respondents strongly agreed ( $M=4.58$ ,  $SDV=0.99$ ) that the project manager is registered with relevant professional bodies. They also agreed ( $M=4.70$ ,  $SD=0.81$ ) that the project manager has project management capability. Respondents strongly agreed ( $M=4.69$ ,  $SDV=0.80$ ) that there is result focus approach in management. The participants strongly agreed ( $M=4.73$ ,  $SDV=0.64$ ) that their organization has recurrent training

of managers; and they agreed (M=4.53 SDV=1.04 that they have team development abilities. Overall, the surveyed employees agreed (M=4.65, SDV=0.86) that technical competencies influence community based projects performance. The results imply that technical competencies are very important in the performance of community based projects because if the project manager does not have the right competencies the project might not be successfully implemented.

#### 4.11.4 Overall Descriptive Analysis on Manager`s Competencies

The overall findings on the extent to which manager`s competencies have influence on the performance of community based projects are shown in Table 4.53. The following were considered under project manager`s competencies: resource mobilization, team management and technical competencies.

**Table 4.53: Means and Standard Deviations for Management Competencies**

	<b>n</b>	<b>Mean</b>	<b>SDV</b>
<b>Components of manager`s competencies</b>			
Project Resource Mobilization	103	4.67378	0.835012
Project Team Management	103	4.70882	0.821904
Project Technical Competencies	103	4.6466	0.857214
<b>Overall manager`s competencies analysis</b>		<b>4.6764</b>	<b>0.83804</b>

The study results in Table 4.53 show that the overall mean for the project manager`s competencies was 4.68 and the standard deviation was 0.84. The most dominant indicator was choice of team management (M=4.71, SDV=0.82); followed by resource mobilization (M=4.67, SDV=0.84 and technical competencies (M=4.65, SDV=0.86). This implies that the project manager`s competencies are very important in the performance of community based



projects because the a manager`s competencies affect how the project allocates resources at its disposal, including human capital, finances and time.

The study wanted to establish from the respondents the challenges that affect the manager`s competencies in the organization. One key response from one employee on this was that:

*“If a manager is not keen he loses his competencies among the employees since he/she lack authority. Identification of critical competencies is difficult, alignment of competence development with project goals is weak, investment in competence management is deprioritized and competency management is treated as an HR process, rather than a business imperative.”*

The explanation given by one of the respondents in relation to how the manager`s competences influence performance of community based projects is as follows:

*“Competencies are the foundation and starting point of high-performance talent management, the quickest path to improving performance starts by knowing the target performance. Organizations that take the time to define the short list of competencies and expected proficiency level for each competency, by job role, essential for the achievement of project goals, have taken the first step toward giving employees and leaders the best shot at performance excellence.”*

Another respondent added that,

*“Competency assessment results inform leadership about current and future talent capability.”*

Another one was of the opinion that,

*“To be assessed as competent, the employee must demonstrate the ability and experience to perform a job`s specific tasks.”*

From a large percentage of responses, it can be deduced that rganizations are better prepared with development planning and, as a result, yield healthier talent pipelines regardless of business cycle or economic conditions.

One employee in the education secctor gave the following comprehensive observation,

*“Competency facilitates business-driven learning and development, eliminates non-value-add training, highlights strengths to be further developed, flags critical skill gaps for mitigation, and generates higher levels of employee and leader satisfaction with their overall experience with the organization.”*

Results of interviews held with project managers of community based projects indicate that, to a great extent, the manager`s competencies influence the relationship between project design tools and the performance of community based projects and this supports the quantitative data. For instance, one manager had the following view:

*“One of the most common issues facing business managers today is that they concentrate their management efforts on executing individual projects, but fail to understand the impact of these on the wider business. The result is a sub-optimal performance and lower returns for the business or project as a whole.”*

A number of project managers had a general view that the manager`s competencies influence relationship between project design tools and performance of community based projects since leadership influence on employees is maximized, one established authority, competencies have become a more prevalent method of identifying the requirements of supervisory, managerial, and leadership positions. According to one of them,

*“They provide a more general description of responsibilities associated across these positions and that competencies are underlying characteristics that lead to superior performance in an individual`s job, they include qualities, skills, attributes and traits that help people to be successful.”*

#### **4.11.5 Correlational Analysis**

Correlational analysis using Pearson`s Product Moment technique was done to determine the relationship between indicators of project manager`s competencies and the performance of community based projects. It was meant to identify the strength and direction of the association between project manager`s competencies and the performance of community based projects. The results are summarized in Table 4.54.

**Table 4.54: Gantt Chart Correlation Results**

	Performance Community Projects	of Based Managers Competencies	of
Performance of Community Based Projects	1	0.56*	
Application of Managers Competencies	0.56*	1	

\*Correlation significant at 0.05 level (2 tailed)

The correlation results in Table 4.54 indicate that the variable managers competency comprising of the indicators, namely, resource mobilization, team management and technical competencies had some level of association with performance of community based projects. Application of managers competency had a Pearson correlation coefficient of 0.56 depicting a moderately strong level of association with performance of community based projects.

The sixth objective of the study to was establish the extent to which the project manager`s competencies influence the relationship between application of project design tools and the performance of community based projects within Bungoma County. The indicators of project manager`s competencies were: resource mobilization, team management and technical competencies. Data was collected using a five point Likert-type scale.

#### **4.11.6 Regression Analysis and Hypothesis Testing**

Regression analysis was used to establish the influence of application of managers competencies on performance of community based projects. Hypothesis testing using p value was used because it gave the strength of the decision .The p values were used to measure the hypothesis of the study. According to (Mugenda & Mugenda, 2012) a significance level of 0.05 is preferred because it represented the results to be at 95% confidence level. The

regression analysis results were presented using the model summary, analysis of variance (ANOVA) and the beta coefficients Tables

The following hypothesis was tested using multiple regression model to satisfy the requirements of the sixth objective.

### **Hypothesis 6**

H<sub>0</sub>: Project manager`s competencies do not have a significant influence on the relationship between application of project design tools and performance of community based projects in Bungoma County.

The null hypothesis was tested using the following multiple regression model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_{14} + \beta_6 X_1 X_{14} + \beta_7 X_2 X_{14} + \beta_8 X_3 X_{14} + \beta_9 X_4 X_{14} + e$$

Where:

Y – Performance of Community Based Projects

a – Constant Term

b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>, b<sub>4</sub>, b<sub>5</sub>, b<sub>6</sub>, b<sub>7</sub>, b<sub>8</sub>, b<sub>9</sub> – Regression Coefficients

β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub>, β<sub>4</sub>, β<sub>5</sub>, β<sub>6</sub>, β<sub>7</sub>, β<sub>8</sub>, β<sub>9</sub>

X<sub>1</sub> – Logical framework

X<sub>2</sub> – Stakeholder Analysis

X<sub>3</sub> – Problem Tree Analysis

X<sub>4</sub> – Gantt Charts

X<sub>14</sub> – Manager`s Competencies

e – Error Term

In testing this hypothesis, the moderating influence was computed using hierarchical regression method as advocated by Holmbeck (1997). This involved testing the influence of the independent variable (financial resources management, procurement of labour, acquisition of materials, and management of plant and equipment) on the dependent variable in step one and introducing the moderator (project scheduling) in step two. Moderation is assumed to take

place if the influence of the interaction between the independent variable and moderator on dependent variable is significant. Ayiro (2012) argues that a moderator is a qualitative or quantitative variable that affects the direction and/or strength of the relationship between an independent variable and a dependent variable. According to Holmbeck (1997), a moderator variable is one that affects the relationship between two variables, so that the nature of the impact of the predictor on the criterion varies according to the level or value of the moderator.

**Step 1: Influence of Project Design Tools on Performance of Community Based Projects**

In Step 1, project design tools were regressed on performance of community based projects. The results are presented in Table 4.55.

**Table 4.55: Model Summary for the Combined Project Design Tools without Managers competencies**

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
dimension 1	0.302	0.208	0.201	0.86657

a. Predictors: (Constant), Logical framework, Stakeholder analysis, problem tree analysis Gantt Chart

Table 4.55 presents the regression model summary on application of combined project design tools without the moderating variable versus the performance of community based projects in Bungoma County. As presented in the Table, the coefficient of determination R square is 0.302 and R is 0.208 which is taken at 0.05- level of significance. The Coefficient of determination R indicates that 20.8% of the variations in performance of community based projects are explained by the application of the combined project design tools. This implies that there exists a significant relationship between application of problem logical framework, stakeholder analysis, problem tree analysis and Gantt Chart and performance of community based projects in Bungoma County.

**Table 4.56: Analysis of Variance (ANOVA) for the Combined Project Design Tools**

Model	Sum of Squares	df	Mean Square	F	Sig.
-------	----------------	----	-------------	---	------

1	Regression	23.087	4	5.772	7.822	.000
	Residual	73.592	98	.751		
	Total	96.680	102			

a. Dependent Variable: Performance of community based projects

b. Predictors: (Constant), Application of Logical Framework, Stakeholder Analysis, Problem Tree analysis and Gantt Chart

The analysis of variance (ANOVA) results as shown in Table 4.56 above confirms further that the model fit is appropriate for this data since the p-value of 0.000 is less than 0.05. This implies therefore that the overall F(7.822) with  $p < 0.05$  indicated that we rejected the Null hypothesis and show that there exists a significant relationship between the application of the combined project design tools and performance of community based projects in Bungoma county.

**Table 4.57: Regression Coefficients: Project Design Tools without the moderating variable on Performance of Community Based Projects**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.021	0.236		4.32	0.000
Application of logical framework	0.11	0.103	0.11	1.07	0.000
Application of stakeholder analysis	-0.064	0.111	-0.059	-5.076	0.002
Application of problem tree analysis	0.064	0.111	0.059	5.876	0.001
Application of Gantt charts	0.09	0.123	0.074	4.7831	0.0005

Dependent Variable: Performance of community based projects

The results in Table 4.57 further indicated that the application of the combined project design tools has a significant influence on performance of community based projects. The fitted regression model  $Y = 1.021 + 0.11X_1 - 0.064X_2 + 0.064X_3 + 0.09X_4$ . This implies that for every unit change by the combined project design tools, the level of performance of community based projects will increase by 0.11, 0.064, 0.09 and reduce by 0.064 with respect to logical framework, problem tree analysis, Gantt chart and stakeholder analysis respectively. Even when any the project design tools have not been applied, the performance of community based projects would still be significant at 1.021 units. This indicates that there were still other factors driving performance such as managers' competencies among others.

## Step 2: Influence of Project Design Tools and Manager`s Competencies on Performance of Community Based Projects

In Step 2, the influence of the moderator (manager`s competencies) was introduced on the relationship between project design tools and performance of community based projects. The results are presented in Table 4.58.

**Table 4.58: Model Summary: Combined tools with Managers Competencies**

Model		R	R Square	Adjusted R Square	Std. Error of the Estimate
dimension	1	.302 <sup>a</sup>	0.208	0.201	0.86657
	2	.442 <sup>b</sup>	0.358	0.354	0.82354

b. Predictors: (Constant), Managers competencies, Application of problem tree analysis, Application of stakeholder analysis, Application of Gantt charts, Application of logical framework

Table 4.58 presents the regression model summary on application of combined project design tools infused with managers competencies versus the performance of community based projects in Bungoma County. As presented in the Table, the coefficient of determination R square is 0.442 and R is 0.358 which is taken at 0.05- level of significance. The Coefficient of determination R indicates that 35.8% of the variations in performance of community based projects are explained by the application of the combined project design tools. This implies that there exists a significant relationship between application of problem logical framework, stakeholder analysis, problem tree analysis, Gantt Chart and managers competencies with performance of community based projects in Bungoma County.



**Table 4.59: Analysis of Variance (ANOVA) for the Combined Project Design Tools and Managers Competencies**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.087	5	5.672	8.832	.000
	Residual	72.592	97	.651		
	Total	96.680	102			

a. Dependent Variable: Performance of community based projects

b. Predictors: (Constant), Managers Competencies , Application of Logical Framework, Stakeholder Analysis, Problem Tree analysis and Gantt Chart

The analysis of variance (ANOVA) results as shown in Table 4.59 above confirms further that the model fit is appropriate for this data since the p-value of 0.000 is less than 0.05. This implies therefore that the overall F(8.832) with  $p < 0.05$  indicated that we rejected the Null hypothesis and show that there exists a significant relationship between the application of the combined project design tools including managers competency and performance of community based projects in Bungoma county.

**Table 4.60: Regression Coefficients: Moderating Influence of Project Managers**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.021	0.236		4.32	0
Application of logical framework	0.11	0.103	0.11	1.07	0
Application of stakeholder analysis	0.064	0.111	0.059	5.076	0.002
Application of problem tree analysis	-0.064	0.111	-0.059	-5.876	0.001
Application of Gantt charts	0.09	0.123	0.074	4.7831	0.005
2 (Constant)	1.362	0.184		7.894	0.000
Application of logical framework	0.024	0.023	0.108	6.045	0.000
Application of stakeholder analysis	0.024	0.023	0.097	6.015	0.000
Application of problem tree analysis	-0.142	0.099	-0.151	-7.434	0.000
Application of Gantt charts	0.05	0.034	0.171	6.466	0.000
Manager's competencies	0.018	0.025	0.078	-0.713	0.000

Dependent Variable: Performance of community based projects

The results in Table 4.60 further indicated that the introduction of managers' competency makes the application of the combined project design tools to have a significant influence on performance of community based projects. The fitted regression model  $Y = 1.362 + 0.024X_1 + 0.024X_2 - 0.142X_3 + 0.05X_4 + 0.018X_5$ . This implies that for every unit change by the combined project design tools and managers competencies, the level of performance of community based projects will increase by 0.024, 0.024, 0.05, 0.018 and reduce by 0.024 with respect to logical framework, stakeholder analysis, Gantt chart, managers competencies and problem tree analysis respectively. Even when any the project design tools have not been applied, the performance of community based projects would still be significant at 1.362 units.

This indicates that there were still other factors that could be driving performance not enumerated under this study.

The results in Table 4.60 further indicated that in Model 1 project design tools explained 20.8% of the variation in the performance of community based projects. The F value was statistically significant  $F(7.822)$ ,  $p=0.000<0.05$  that project design tools influence the performance of community based projects.

In Step 2, the influence of the moderator (project manager`s competencies) was introduced on the relationship between project design tools and performance of community based projects. The results as presented in Table 4.60 indicated that the introduction of a moderator (project manager`s competencies) and interaction term in Model 2 increased the value of R squared to 0.358. This implies that project design tools and manager`s competencies explain 35.8% variation in the performance of community based projects. This is a better model fit than when the moderating variable was never introduced.

Thus, from the results, it can be deduced that project manager`s competencies has a statistically significant moderating influence on the performance of Community Based Projects. These results suggest that the level of managers` competencies acted as a moderator in the relationship between application of project management tools and performance of Community Based Projects. Based on the research findings, we reject the null hypothesis that the strength of the relationship between project design tools and performance of community based projects does not depend on manager`s competencies. We conclude that the strength of the relationship between project design tools and performance of community based projects depends on the level of the manager`s competencies.

There are limited studies that address the interaction of project manager`s competencies, , project design tools and performance of community based projects. In this section, the main findings for the sixth objective are linked to the previous studies that were reviewed under the literature review. The following hypothesis was stated: Hypothesis H<sub>06</sub>: Project manager`s competencies have no significant influence on the relationship between application of project design tools and performance of community based projects within Bungoma County.

Adeyemo (2012) in his work established that project management has sometimes been called the accidental profession because many project managers take on their first project

management duties without benefit of formal training. Ammeter (2012) noted that most training in project management still resides within corporate training, consulting, and professional organizations entirely outside higher education. A study by Abdul-Azeez et al. (2009) indicated that team management is an essential strategy needed to aid business performance; it is also an important tool which helps in improving business performance and productivity that can lead to business prosperity. Furthermore, the study revealed that individualism is a major hindrance to organization productivity. Kuen (2011) and McKay (2016 both) found out that theoretical skill set framework of technical, leadership, managerial and administrative skills, has been proposed and summarized with clear definitions grounded in recent management and leadership literature and with a rationale of how they contribute to project management success that this thesis fleshes out.

Hypothesis H<sub>06</sub> was supported by data and hence the strength of the relationship between the application of project design tools and the performance of community based projects depended on the project manager`s competencies. Considering the previous studies mentioned above, this study has come out with new findings.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents a summary of findings, discussions, conclusions and contribution of the study to the body of knowledge. This chapter also captures information on the recommendations of the study as well as limitation to the study. Suggestions for further research are also highlighted.

#### 5.2 Summary of Findings

The purpose of this study was to establish application of project design tools, managers' competencies and performance of community based projects in Bungoma County Kenya. Six specific objectives were developed and addressed through testing six hypotheses. The population of the study included project managers and other employees of the community based projects. Data was collected from the respondents using questionnaires and interview guides.

Hypotheses were tested using simple, multiple and hierarchical regressions. Simple linear regression was employed to determine the influence of each independent variable, namely, logical framework, stakeholder analysis, problem tree analysis, and Gantt chart on performance of community based projects which was the dependent variable of the study. Multiple and hierarchical regression were performed to determine whether project managers' competencies had a moderating influence on the relationship between project design tools and performance of community based projects.

##### 5.2.1 The Influence of Logical Framework on Performance of Community Based Projects

The first objective of the study was to establish the influence of the application on performance of community based projects in Bungoma County. The null hypothesis tested pointed out that there is no significant relationship between the application of logical framework and performance of community based projects. The research findings were  $R^2=0.015$ ,  $F=0.494$ ,  $p=0.688>0.05$ . The null hypothesis was not rejected and it was concluded that the application of logical framework has no statistically significant influence on the performance of community based projects in Bungoma County, Kenya.

Under the sub-theme of project out, the research findings show that the respondents strongly agreed that their organization achieves project tangible plans on time; that their organization considers important cultural events; that they have tracking processes and that actual output is always measured against planned output. The results found also indicated that the respondents have status reports that pertain to planning. Under the sub-theme of project activities, the research findings show that the respondents strongly agreed that project activities are completed in time; that some activities in the schedule are not properly sequenced; that some activities were left out of schedule; that a work breakdown structure was prepared to identify all activities; and that unrealistic durations are assigned to activities. Under the sub-theme of project objectives, the research findings show that the respondents strongly agreed that project objectives were achieved on time; that time required to achieve project objectives was measured; that their projects consider number of beneficiaries; that information needs were provided; and that a budget was drawn to achieve objectives.

### **5.2.2 The Influence of Stakeholder Analysis on Performance of Community Based Projects**

The second objective of the study was to assess the extent to which the application of stakeholder analysis influences performance of community based projects in Bungoma County. The null hypothesis for testing in this case was that there is no significant relationship between application of stakeholder analysis and performance of community based projects. The research findings were  $R^2=0.332$ ,  $F=4.095$ ,  $p=0.004<0.05$ . The null hypothesis was rejected and it was concluded that that the application of stakeholder analysis had a statistically significant influence on the performance of community based projects.

Under the sub-theme of project outcomes, the research findings show that the respondents strongly agreed that project outcomes are achieved on time; that funding influences project outcomes; that stakeholders slow down decision making and that there are many stakeholder initiated variations in the project. Findings also indicated that stakeholders influences project success. Under the sub-theme of stakeholder inclusion, the research findings show that that various stakeholders were included in the project; that local culture events are held; that their organization utilizes stakeholder expertise; that stakeholder provide project feedback; and that stakeholders grant project acceptance. In terms of stakeholder capability; the research findings

show that stakeholders were identified based on individual performance capabilities; that they review project requirements with stakeholders and that stakeholders played a role in uncovering project risks that stakeholders provide input on project goals from external perspectives. Stakeholders were also formed to provide oversight role in the projects.

### **5.2.3 The Influence of Problem Tree Analysis on Performance of Community Based Projects**

The third objective of the study was to examine how application of problem tree analysis influences performance of community based projects in Bungoma County. The null hypothesis tested was that there is no significant relationship between application of problem tree analysis and performances of community based projects. The research findings were  $R^2=0.214$ ,  $F=8.971$ ,  $p=0.000<0.05$ . The null hypothesis was rejected and it was concluded that application of project tree analysis has statistically significant influence on the performance of community based projects.

Under the sub-theme of project identified problem, the research findings show that the respondents strongly agreed that constraint to the problems were identified; that the main problem was always selected among other community problems and that consensus building was done when identifying the right problem. Also the organization identified the right schedules for problems identified; and that identified problems were well defined. Under the sub-theme of project root causes, the research findings show that that factors contributing to the problem were always analysed; that culture misalignments were identified; that causes of main problem were identified; that problem was always defined; and that data collected was always analyzed. Under the sub-theme of project effect, the research findings showed that the respondents strongly agreed that proactive plans were done to mitigate effects; that effects of the main problems were identified; that immediate effects were identified. The findings also demonstrated that long-term effects were identified; that cause-effect analysis existed.

### **5.2.4 The Influence of Gantt Chart and Equipment on Performance of Community Based Projects**

The fourth objective of the study was to establish the extent to which application of Gantt charts influenced performance of community based projects in Bungoma County. The null hypothesis tested was that there is no significant relationship between application of Gantt

chart and performance of community based projects in Bungoma County, Kenya. The research findings were  $R^2=0.112$ ,  $F=4.177$ ,  $p=0.03>0.05$ . The null hypothesis was rejected and it was concluded that application of Gantt chart and has a statistically significant influence on the performance of community based projects.

In terms of project resources, the research established that respondents strongly agreed that resources needed for the project were sought before project commencement. Also, resources identified met economic requirements of the project; project schedules were present; and resources allowance was made on each activity. Additionally, top management approve resource allocation. Under the sub-theme of work accomplished, the research findings show that type of work accomplished within time was captured; amount of work accomplished within time was recorded and work accomplished after time was reviewed. Findings also pointed out that that project matched skilled workers to appropriate jobs; and that absenteeism of staff was high in the project. Under the sub-theme of time taken; the research findings showed that the respondents strongly agreed that amount of time taken to accomplish task was monitored; that there was a lot of reworking in the project; that schedules which meet deadlines were identified as well as the timelines. Also frequent project design changes were identified as part of the findings.

#### **5.2.5 The Influence of Combined Project Design Tools on Performance of Community Based Projects**

The fifth objective of the study was to examine the extent of combined influence of the application of project design tools on the performance of community based projects in Bungoma County. The null hypothesis showed that there was no significant relationship between combined project design tools and performance of community based projects was tested. The research findings were that  $R^2=0.208$  and (7.822) with  $p= 0.000<0.05$ . The null hypothesis was rejected and it was concluded that project design tools had a statistically significant influence on the performance of community based projects.

#### **5.2.6 The Influence of Project Managers' Competencies on the Relationship Between Project Design Tools and Performance of Community Based Projects**

The sixth objective of the study was to establish the extent to which the project managers' competencies influence the relationship between the application of project design tools and the



performance of community based projects in Bungoma County. The null hypothesis for testing was that the strength of the relationship between application of project design tools and performance of community based projects does not depend on the project managers' competencies. The research findings were that  $R^2=0.358$ ,  $R^2\Delta=-0.150$ ,  $F(8.832)$  and  $p=0.000<0.05$ . The null hypothesis was rejected, and it was concluded that the strength of the relationship between project design tools and performance of community based projects depends on the managers' competencies.

Under the sub-theme of resource mobilization, the research findings show that the respondents strongly agreed that their resource mobilization skills support organizational sustainability. Their organization had a sound financial management system; that they depended on external funding and that staff were trained on funding proposal writing skills; and that coordinated resource mobilization approach existed in these projects. Under the sub-theme of team management, the research findings showed that the respondents strongly agreed that project managers had the ability to coordinate a group of individuals that there were regular performance appraisals; that their organization is focused on team work, that project manager has adequate supervisory experience; and that there are frequent project design changes. Under the sub-theme of technical competence, the research findings showed that the respondents strongly agreed that project manager was registered with relevant professional bodies; that project manager had project management capability and that there were result focus approach in management. Other findings were that their organizations had recurrent training of managers; and that they had team development abilities.

### **5.3 Conclusions**

The conclusions for the study were made in the context of the findings. The conclusions were made in line with the objectives and hypotheses. The first research objective was to establish how the application of logical framework influences performance of community based projects in Bungoma County. The indicators for logical framework were project output, activities and project objectives. The most dominant indicator was project activities followed by project output and project objectives. The results indicate that project output had no statistically significant influence on the performance of community based projects. Project activities had no statistically significant influence on the performance of community based projects. Project

objectives had no statistically significant influence on the performance of community based projects. Overall, the application of logical framework had no statistically significant influence on the performance of community based projects.

The second research objective was to assess the extent to which application of stakeholder analysis influences the performance of community based projects in Bungoma County. The indicators for stakeholder analysis were project outcome, stakeholder inclusion and stakeholder capability. The most dominant indicator was stakeholder inclusion, followed by project outcomes and stakeholder capability. The results indicate that project outcomes had no statistically significant influence on the performance of community based projects. Stakeholder inclusion had a statistically significant influence on the performance of community based projects. Stakeholder capability had no statistically significant influence on the performance of community based projects. Overall, the application of stakeholder analysis had a statistically significant influence on the performance of community based projects.

The third research objective was to examine how the application of problem tree analysis influences the performance of community based projects in Bungoma County. The indicators for the application of problem tree analysis were identified problems, root causes and effects. The most dominant indicator was project problem identified, followed by project root causes and project effects. The results indicate that problems identified had a statistically significant influence on the performance of community based projects. Testing for project root causes had no statistically significant influence on the performance of community based projects. Project problem effects had no statistically significant influence on the performance of community based projects. Overall, the application of project tree analysis had a statistically significant influence on the performance of community based projects.

The fourth research objective was to establish the extent to which application of Gantt charts influences the performance of community based projects in Bungoma County. The indicators for Gantt chart were project resources, work accomplished and time taken. The most dominant indicator was project time taken followed by project work accomplished and project resources. The results indicate that project resources had no statistically significant influence on the performance of community based projects. Work accomplished had no statistically significant influence on the performance of community based projects. Time taken had statistically

significant influence on the performance of community based projects. Overall, application of Gantt chart had a statistically significant influence on the performance of community based projects.

The fifth research objective was to examine extent of combined influence of application of project design tools on the performance of community based projects in Bungoma County. The null hypothesis was rejected. It was concluded that project design tools had a statistically significant influence on the performance of community based projects.

The sixth research objective was to establish the extent to which the project manager`s competencies influence the relationship between the application of project design tools and performance of community based projects in Bungoma County. The indicators for project manager`s competencies were resource mobilization, team management and technical competence. The most dominant indicator was choice of team management followed by resource mobilization and technical competencies. Thus, from the results, it can be concluded that project managers` competencies had a statistically significant moderating influence on performance of Community Based projects. These results suggest that the strength of the relationship between project design tools and performance of community based projects depends on manager`s competencies.

#### **5.4 Contribution of the Study to the Body of Knowledge**

The contribution of the study to the body of knowledge is summarized in Table 5.1.

**Table 5.1: Contribution to Knowledge**

<b>Objective</b>	<b>Contribution to Knowledge</b>
1. To establish how application of logical framework influences performance of community based projects in Bungoma County.	The study has empirically proved that application of logical framework has no influence on the performance of community based projects
2. To assess the extent to which application of stakeholder analysis influences performance of	

<b>Objective</b>	<b>Contribution to Knowledge</b>
community based projects in Bungoma County.	The study has empirically proved that the application of Stakeholder analysis had a significant influence on the performance of community based projects.
3. To examine how application of problem tree analysis influences performance of community based projects in Bungoma County.	The study has empirically proved that the application of project tree analysis had statistically significant influence on the performance of community based projects.
4. To establish the extent to which application of Gantt charts influence performance of community based projects in Bungoma County.	The study has empirically proved that the application of Gantt chart had no influence on the performance of community based projects.
5. To examine extent of combined influence of application of project design tools on performance of community based projects in Bungoma County.	5. The study has empirically proved that the Project manager`s competencies has an influence on the performance of community based projects and that the Combined project design tools have an influence on the performance of community based projects
6. To establish extent to which the project manager`s competencies influence the relationship between application of project design tools and performance of community based projects in Bungoma County.	6. The study has empirically proved that the Project manager`s competencies has a moderating influence on performance of Community Based projects.  Further that the strength of the relationship between project design tools and performance of community based projects depends on manager`s competencies.

## **5.5 Recommendations for Policy and Practice**

The recommendations made in the study are based on the research results, analysis, interpretation and discussion.

### **5.5.1 Recommendations for Policy**

The following are recommendations for policy:

1. This study revealed that application of stakeholder analysis had an influence on the performance of community based projects. Since community stakeholders are important in the success of community based projects, there is need to ensure that among the team members of the projects are the community members
2. This study also found out that time taken has an influence on the performance of community based projects. Time management is an essential aspect in project management. Therefore, an organization dealing in community based projects needs to come up with strategies to minimize time and enhance activity success in order to avoid delays to project implementation.
3. Application of log frame had an influence on the performance of community based projects. Therefore this should be a consideration for organizations seeking congruence with the organizations' strategic plans of the various projects. Therefore, organizations need to support and invest in the application of logical framework matrix from time to time. In addition organizations need to frequently try out new ideas and seek out new ways of doing things based on technical advancements and on the logical framework matrix.
4. Given that the application of problem tree analysis had an influence on the performance of community based projects, it is the organization's quest to ensure that there is a proper definition of the project framework. Those in charge must involve the relevant stakeholders in developing the problem analysis tree. This is because participation ensures efficiency as people form a pool of resources to meet common goals. Problem tree analysis is not only a critical performance determinant but effectiveness is also increased by giving stakeholders a right in planning for and designing the project. Therefore, those in charge of a community project need a properly planned project in

addressing the real needs of the beneficiaries and it should therefore be based upon correct and complete analysis of the existing situation. The existing situation should be interpreted according to the views, needs, interests and activities of the parties concerned.

### **5.5.2 Recommendations for Practice**

The following are recommendations for practice:

1. This study revealed that there was a statistically significant relationship between stakeholder inclusion and performance of community based projects. It is recommended that organizations operating community based projects need to work on inclusion systems so as to enhance their relationship with the community and performance.
2. This study also found out that there was a statistically significant relationship between project manager`s competencies and performance of community based projects. It is recommended that organizations operating projects should have clear human resource policies that deal with resource management in order to enhance the performance of community based projects.
3. The study results established that the application of log frame, stakeholder analysis, problem tree analysis and Gantt charts influence the performance of community based projects. The implication of this is that effective use of project design tools is one of the key aspects of project performance. Owing to the fact that project management is a challenging task with many complex responsibilities and relevantly project design tools and techniques, project managers should choose a project management tool that best suits their management style. No one tool addresses all project management needs. Organizations dealing in project management can employ the findings of this study in areas of project design and management.

### **5.6 Suggestions for Further Research**

1. This study was limited to Bungoma County and it can be replicated in other counties within Kenya. A possible title could be: Application of Project Design Tools,

Managers` Competencies and Performance of Community Based Projects in Nairobi County, Kenya.

2. This study dealt with community based projects in Bungoma County, Kenya. In future studies, national or international projects may be considered. A possible title could be: Application of Project Design Tools, Managers` Competencies and Performance of International Projects in Kenya.
3. The moderating variable in this study was project managers` competencies. Other moderating variables such as community culture and attitude can also be considered in future research. A possible title could be: Application of Project Design Tools, Community Culture and Attitude and Performance of Community Based Projects in Nairobi County, Kenya.

## REFERENCES

- Abdul-Azeez, A. (2009). Appraisal of the impact of team management on business performance: A case of Metro Mass Transit (Ghana) Limited. *Academy of Management Review* 25(2), 10-13
- Abegunde, A. (2014). Rethinking Polarization of Raw-Material Inputs to region Centres: A Panacea to Rural Economic Development. (A. e. (eds), Ed.) *Environment and Behavior*.
- Ackermann, F. &. (2011). Strategic Management of Stakeholders: Theory and Practice. *Long range planning*, 44 (3), 179-196.
- Adeyemo, K. (2012). Factors influencing project success: the impact of human resource management . *International Journal of Project Management*., 22(1), 1-11.
- Adler, P. S.-W. (January 2002). Social Capital: Prospects for a New Concept. . *The Academy of Management Review*, 27(1), 17.
- Agumena, D. (2013). Projects and principles of management Forum for environmental in Ethiopia. doi:www.ffe-ethiopia-org/pdf/ethiopia- environmental review
- Al-Kharashi, A. &. (2009). Causes of delays in Saudi Arabian public sector construction projects. *Construction Management and Economics*. 27(1), 3-23.
- Ammeter, A. P. (2012). Leadership, team building, and team member characteristics in high performance project teams. *Engineering Management Journal*., 14(4), 3-10.
- Anderson, P. (2010). Characteristics of community. Retrieved Accessed on 21.07.2015, from <http://www.psawa.com>
- Arain, F. M. ( 2010). S.A.. Contractors' Views of the Potential Causes of Inconsistencies between Design and Construction in Saudi Arabia. *Journal of Performance of Constructed Facilities*, 20(1), 74-83.
- Austin, J. &. (2004). Theories and Practice of Organization Development". *Handbook of Psychology*, 12(7), 309–33.
- Bakewell, O. &. Garbutt (2005). The Use and Abuse of the Logical Framework Approach. *The International NGO Training and Research Centre (INTRAC)*. Retrieved from <http://www.intrac.org/data/files/resources/518>
- Bank., W. (2009). *Innovative Finance for Development Solutions*. [www.tinyurl.com/798h85e](http://www.tinyurl.com/798h85e).



- Bennett, N. J. (2015). Community-based scenario planning: a process for vulnerability analysis and adaptation planning to social-ecological change in coastal communities. *Environment, Development and Sustainability*, 18, 1–29.
- Blair, R. J. (1995). A cognitive developmental approach to morality: Investigating the psychopath. *Cognition*, 57(1), 1-29.
- Blood, A. (2013, 13 –16th May). Stakeholders Engagement: Reclaiming the Balance when Economics Dominate, IAIAConference Proceeding of “Impact Assessment: The Next Generation. 33rd Annual Meeting of the International Association for Impact Assessment. Calg.
- Booker, G. (2007). Earned Value and the Drucker Challenge. Retrieved from <http://www.projectsatwork.com/content/Articles/234573.cfm>
- Botchway, K. (2011). Paradox of Empowerment: Reflections on a Case Study from Northern Ghana. *World Development*, 29, 135-153.
- Brandon, D. (2010). *Project Management for Modern Information Systems*. Christian .
- Brooks, J. K. (2013). Assessing community-based conservation projects: a systematic review and multilevel analysis of attitudinal, behavioral, ecological, and economic outcomes. *Environmental Evidence Brothers University USA*, 2 (1), 56-73.
- Burcky, U. (2011). *Trends in In-country Aid Fragmentation and Donor Proliferation, An Analysis of Changes in Aid Allocation Patterns between 2005 and 2009, Report on behalf of the OECD Task Team on Division of Labour and Complementarity*. OECD, 10.
- Burke, R. (2013). *Fundamentals of Project Management: Tools and Techniques*. Burke Publishing.
- Businge. (2010). *The impact of donor aided projects through NGOs on the social and economic welfare of the rural poor. ‘what do the donors want?’: case study of Kabarole Research and Resource Centre*. University of Ghana, Ghana.
- Carbone R., & Gholston, F. (2004). Formal training of project managers and Managers competency. *Academy of Management Review* 22(1), 21-25
- Carl, B. (2015). *The impact of donor aided projects through NGOs*. University of Ghana, Ghana.
- Campbell, K. G. (2006). *The Problem Tree. Analysis of the causes and effects of problems*. Accessed: 10.08.2010.

- Chandes, J. &. (2010). “Investigating Humanitarian Logistics Issues; from operations management to Strategic action” *Journal of Manufacturing technology management*. 21(3), 320-40.
- Cheung, S. S. (2004). PPMS: a Web-based construction Project Performance Monitoring System. *Automation in Construction*. 13 (6), 361– 376.
- Chikati, J. (2009). *Participatory Project Identification and Planning, A Regional Partnership for Resource Development publication*. Signal Press Ltd, IFDM Gardens off Ngong Road Nairobi.
- Chimwazo, A. (2005). Analysis of factors influencing project cost overruns in Botswana. *Construction Management and Economics*, 18(1), 77-89.
- Chinyio, B. &. (2010 ). *Construction Stakeholder Management*. Oxford: John Wiley & Sons.
- Chizimba, M. (2013). The sustainability of donor funded projects in Malawi. *Mediterranean Journal of Social Science*, 9(4), 705-714.
- Cicmil, S. (1999). Implementing organizational change projects: impediments and gaps. *Journal on Strategic Change*, 8 (2), 119-129.
- Clark, H. &. (2012). *Theory of Change Basics: A Primer on Theory of Change* . New York: Actknowledge.
- Cohen, D. (2008). *Lending to the Poorest Countries: A New Counter-cyclical Lending Instrument*.
- Collis, J. &. (2014). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students 4th edition*. Palgrave Macmillan.
- Corbett, C. &. (2003). The natural drift: what happened to operations research? *Operations Research Journal*, 41(4), 625-640.
- Creswell, J. (2013). “*Research design: Qualitative, quantitative and mixed method approaches*” (2nd ed.). California: Sage.
- Delmas, M. &. (2008). Organizational responses to environmental demands: opening the black box. *Strategic Management Journal*, 29(10), 1027-1055.
- Donaldson, T. (2005). L. E. The Stakeholder Theory of the Corporation: Concepts, Evidence and Implications. *Academy of Management Review*, 20 (1), 65 – 91.
- Dongier, P. V. (2003). Community driven development. World Bank Poverty Reduction Strategy Paper.

- Duggal, J. (2011). *Rethinking the Triple Constraint. Let's think critically about...* Eid, M. Integrating Sustainable Development into Project management.
- Ekung, S. B. (2013). Analysis of Stakeholders Impacting Project Outcomes in Conflict Zones. *Australian Journal of Building Economic and Property Management in review*, 2 (23), 30-58.
- Fakoya, G. A. (2001). Contributions of Local Associations in Community Development Projects in Ondo State Nigeria" *Journal of. Agriculture and Social Research .*, 1 (2), 50-61.
- Field, A. P. (2009). *Discovering statistics using SPSS* (2nd Edition ed.). Sage Publications.
- Filippov, S. &. (2010). Innovation project management: A research agenda *Journal Innovative Sustainability*. 1(1), 1-15.
- Fleming, Q. (2005). *Earned Value Project Management* (3rd ed ed.). Project Management Institute.
- Freeman, R. (1984). *Strategic Management: A Stakeholder Approach*. Pitman Press: Boston, MA.
- Funnell, S. &. (2011). *Purposeful Program Theory: Effective Use of Theories of Change and Logic Models*. San Francisco: CA: Jossey Bass.
- Furrer, M.A., Thomas, H., and Goussevskaia, K. G. (2009), *Dynamic capabilities: Understanding strategic change in organizations*. New York: John Wiley.
- Garlappi, L. T. (2005). *Default risk and stock returns*. Unpublished paper.
- Gcek, S. (2008). *Life beyond Gantt chart*. Retrieved from <http://pmkarma.blogspot.ca/2008/10/life-beyond-gantt-charts.html>
- Geraldi, J. &. Lechter (2012 ). Gantt charts revisited: A critical analysis of its roots and implications to the management of projects today". *International Journal of Managing Projects in Business*, 5 (4), 578–594.
- GFOA. (2006). Government Finance Officers Association. Retrieved from [www.gfoaz.org/newsletters/gfoaz\\_news/2006/1106/frontpage.cfm](http://www.gfoaz.org/newsletters/gfoaz_news/2006/1106/frontpage.cfm)
- Ghosh, P. (2013). *What are the Advantages and Disadvantages of Gantt Charts?* Retrieved from <http://www.shareyouressays.com/116916/what-are-the-advantages-and-disadvantagesof-gantt-charts>
- Gilgen, W. (2012). Resource Networking and Social Health activities in Northern Tanzania: *Academy of Management Review* 27(2), 5-11

- Girishankar, N. (2009). *Innovating Development Finance: From Financing Sources to Financial Solutions*, World Bank. Retrieved from [www.tinyurl.com/7calvjx](http://www.tinyurl.com/7calvjx)
- Gray, C. F. (2008). *Project Management: The managerial process*. New York: McGraw Hill.
- Grove, N. (2008). Beyond the Log frame: A new tool for examining health and peace building initiatives. *Development in practice*, 18(1), 66-81.
- Gupta, S. (2013). Turning Planning Art into Science. *Industrial Management Magazine*. September 2013.
- Hair, J. F. (2010). *Multivariate data analysis* (5th Edition ed.). United Kingdom: Prentice-Hall.
- Hill, T. (2015 ). *Operations management*. New York, NY: Palgrave MacMillan.
- Jackson, S. (2013). Interrogating the theory of change: evaluating impact investing where it matters most. *Journal of Sustainable Finance & Investment*, 3(2), 95-110.
- James, C. (2011). *Theory of Change Review. A report commissioned by Comic Relief*. London.
- Jentoft, S. &. (1995). User participation in fisheries management: lessons drawn from international experiences. *Marine Policy*, 19(34), 227–246.
- Jones, P. J. (2005). Building partnership capacity for the collaborative management of marine protected areas in the UK: a preliminary analysis. *Journal of Environmental Management*, 77(12), 227–243.
- Jupiter, S. D. (2014). Principles for integrated island management in the tropical Pacific. *Pacific Conservation Biology*, 20(6), 193–20.
- Kalsaas, B. T. (2012). The planner system style of planning: its basis in learning theory. *Journal of Engineering, Project, and Production Management*, 2(2), 88-100.
- Keerti, B. (2013). The logical frame work approach [keerti@avavird.org](mailto:keerti@avavird.org).
- Kelly, K. &. Van, V. (2015). Evaluating participation processes in community development. *Evaluation and Program Planning* , 18(8), 371-38.
- Kerzner, H. ( 2009). *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*. John Wiley & Sons,.
- Kerzner, H. (2015). *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*. New Jersey: John Wiley and Sons.
- Kester, W. C. (1992). Industrial groups as systems of contractual governance. *Oxford review of economic policy*, 8(8), 24-44.

- Kikwasi, T., & Chirunga, W. (2012). Causes and effects of delays and disruptions in Tanzanian construction industry. *African Journal of Management*, 213-225
- Khosrow, P. (2010). Influence of information technology application on project resource management: An application of Gantt chart in projects. *Journal of Engineering, Project, and Production Management*, 2(2), 88-100
- Kolavalli, S. & Kerr (2002 ). Scaling up participatory watershed development in India. *Development & Change Journal*, 33 (12), 213-235.
- Kosaroglu, G. (2008). New product development projects and project manager skill sets: A case of the Australian Telecommunications service provider (Telco) industry. *Academy of Management Review* 27(2), 21-25
- Kuen, M. (2012) Critical factors influencing the project success amongst manufacturing companies in Malaysia. *Journal of Engineering, Project, and Production Management*, 2(3), 85-101
- Kumar, S. (2002). *Methods for Community Participation: A Complete Guide for Practitioners*. New Delhi India : Vistar Publications.
- Kumaraswamy, M. C. (2002). Compressing construction durations: lessons learned from Hong Kong building projects. *Int. J.Proj. Manage*, 20(1), 23-35.
- Larson EW, G. D. (2009). Significance of project management structure on development success . *IEEE Trans EngManage* , 36.
- (2009). *Leading Group on Innovative Financing for Development Globalizing. The Case for Financial Levies, Report of the Committee of Experts to the Taskforce on International Financial Transactions and Development*. Retrieved from [www.tinyurl.com/7cxcssd](http://www.tinyurl.com/7cxcssd)
- Leuzzi, N. (2013). *Logical framework approach to development in Ghana*. Retrieved from . [www.mendeley.com/profiles/luca-leuzzi](http://www.mendeley.com/profiles/luca-leuzzi). Accessed February 2014.
- Lewis, J. P. (2017). *Fundamentals of Project Management*. 3rd ed, New York: AMACOM. .
- Lincoln, Y. &. (2005). Paradigms and perspectives in contention. In N. D. Lincoln, *Handbook of Qualitative Research* (2nd ed., pp. 163-188). Thousand Oaks, CA: Sage.
- LING, F. Y. (2004). How project managers can better control the performance of design-build projects. *International Journal of Project Management*, 22, 477-488.
- Livdan, D. H. (2005). *A neoclassical model of financially constrained stock returns*. Unpublished manuscript.

- Lockett, C.E., Thompson, S., and Morgenstern, S. G. (2009), *Dynamic capabilities: Understanding strategic change in organizations*. New York: John Wiley.
- Long, N. O. (2014). Large construction projects in developing countries: a case study from Vietnam. *International Journal of Project Management*, 22(8), 553–561.
- Loosemore, M. (2010). *Crisis Management in Construction Projects*. Virginia: ASCE Press.
- M. Motiar Rahman, M. K. (2002). Risk management trends in the construction industry: moving towards joint risk management"., *Engineering, Construction and Architectural Management*,, 9 ( 2), 131-151. doi:<https://doi.org/10.1108/eb021210>
- Magano, E. (2008). *A community development project management model in a deprived community in Moretele*,. Mpumalanga, South Africa.
- Mansuri, G. (2004). Community-Based and –Driven Development: A Critical Review. *The World Bank Research Observer*, 19(1), 1-39. Retrieved from <http://dx.doi.org/10.1039/wbro/lkh012>
- Mathenge, J. L. (2014). Community participation in water sector governance in Kenya: A performance based appraisal of community water management systems in Ngaciuma-Kinyaritha Catchment, Tana Basin, Mount Kenya Region. *International Journal of Innovative Research & Development*, 3 (5), 783- 792.
- McCabe, A. C. (2016). Community Engagement: Towards Community as Governance. Paper presented at the Governments and Communities in Partnership Conference, Melbourne, Australia.
- McCawley, P. (2014). “Problem Tree Analysis: a centenary appreciation by project managers. *European Journal of Operational Research*, 13(9), 231-236
- McConville, J. (2007). Adapting life cycle thinking tools to evaluate project sustainability in international water and sanitation development work. *Environmental Engineering Science*, 24(7), 937-948.
- McKay, K. (2016). The human factor in planning and scheduling, in *Handbook of Production Scheduling* J.W. Herrmann,ed., Springer, New York.
- McKinney, J. G. (2012). Ethical Attitudes in Small Businesses and Large Corporations: Theory and Empirical Findings from a Tracking Study Spanning Three Decades. *Journal of small Business Management*, 44(2), 167-183.
- MDF. (2005). *MDF Tool: Problem Tree Analysis*. Ede: MDF Training and Consultancy.[Accessed: 10.08.2010].

- Milika, W. (2011). Guide to the logical framework approach republic of Serbia. Retrieved from [www.naturaltherapypage.com](http://www.naturaltherapypage.com) Accessed February 2014
- Mkutu, A. (2011). The role of community based organizations in the development of rural a case study of community based organizations in Kiogoro division, Kisii county. St. Paul's University, Kenya.
- Mugenda, O. M., & Mugenda, A. G. (2012). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: Acts press.
- Mulwa, F. (2008). *Participatory Monitoring and Evaluation of Community projects*. Paulines Publications Africa, Nairobi, Kenya .
- Mulwa, F. (2010). *Demystifying participatory. Community development beginning from the people: ending at the people*.
- Musundi (2015). The influence of resource mobilization strategies on Total War against AIDS, Youth Projects in Turbo Sub-County. *Unpublished Master's thesis Egerton University Kenya*
- Muthomi, N. (2015). Influence of Project Management Practices on Implementation of Donor Funded Education Projects in Kajiado County, Kenya. University of Nairobi.
- Mwaura, M. &. (2014). Factors affecting performance of community-based organizations projects in Kisii County Kenya. . *International Journal of Social Sciences Management and Entrepreneurship*, 1(12), 51- 67.
- Navon, R. (2005). Automated project performance control of construction projects. *Journal on Automation in Construction*, 14 (12), 467– 476.
- Newcombe, R. (2003). From Client to Project Stakeholders: a Stakeholder Mapping Approach, Nottingham UK, . *Association of Researchers in Construction Management Journal*, 9 (34), 43-52.
- Nyandemo, S. &. (2010). Project management from design to implementation approach guide for successful project management Richard Designer and prints, Nairobi, Kenya.
- Odindo, M. (2009). *Capacity Needs of Community Based orgaisatin in Kenya to apply for Global Fund Grants*. Cologne.
- OECD. (2011). Busan Partnership for Effective Development Cooperation, Fourth High Level Forum on Aid Effectiveness, Busan, Republic of Korea, 29 November—1 December 2011.
- Ogunlana, Y. H. (2013). Modelling the dynamic performance of a construction organization. *Construction Management and Economics*, 21(2), 127-136.

- Okumu, C. (2012). Determinants of sustainability of women self help groups in Mombasa Island, Mombasa County, Kenya: University of Nairobi, Kenya.
- Onukwube, H. I. (2010). The Influence of Motivation on Job Performance of Construction Professionals in Construction Companies in Nigeria, . Construction, Building and Real Estate Research Conference of the Royal Institution of Chartered Surveyors, held at Dauphine Universite, Paris. (2- 3 September, 2010).
- Ooko, T. (2013). The impact of teamwork on the achievement of targets in organizations in Kenya: a case of SOS children’s villages, Eldoret. Unpublished Master’s thesis Moi University Kenya
- Patel, B. M. (2008). *Project Management: Strategic financial planning, evaluation and control*. New Delhi: Vikas Publishing House PVT Ltd.
- Paul, M. (2005). *Principles of project monitoring and evaluation* . www.plantsscience. Pauline Publications Africa daughters of St Paul 00100 Nairobi G.P.O Kenya. Retrieved from www.plantsscience. Ucdavis-edu/-.../publical. Accessed February 2001
- Pearce, J. A., and Robinson, R. B. (2007), *Strategic Management: Formulation, Implementation, and Control*. McGraw – Hill Irwin. New York.
- Philip, R., Anton, B. B., Cox, D., Smits, S., Sullivan, C. A., Niekerk, K., . . . Pule, R. &. (2008). : Local Government and Integrated Water Resources Management (IWRM) Part III: Engaging in IWRM – Practical Steps and Tools for Local Governments Freiburg: ICLEI European Secretariat GmbH. Retrieved from [Accessed: 17.04.2012].
- Pinto, J. K. (2018). Critical success factors across the project life cycle: definitions and measurement techniques. *Project Management Journal*, 19(3), 67–75.
- Price, S. (2011). *Social Analysis and Community Participation*. Processes.
- Probst, G. D. (2010). *Kompetenz-Management. Wie Individuen und Organisationen Kompetenz entwickeln*. Wiesbaden: Gabler.
- Rao, K. (2001). *Project Management and Control*. New Delhi: Sultan Chad & Sons.
- Reed, M. S. (2008). Stakeholder participation for environmental management: a literature review. *Biological Conservation*, 141(45), 2417–2431.
- Richard, F. H. (2011). Sub-Saharan Africa and the health MDGs: the need to move beyond the “quick impact” model. *Reproductive Health Matters*.
- Richards, C. C. (2004). Practical approaches to participation SERG Policy Brief No. 1. Macauley Land Use Research Institute, Aberdeen, Scotland.



- Rickards, T. C. (2001). Development of a self-report instrument for exploring team factor, leadership and performance relationships . *British Journal of Management*, 243-250.
- SAD. (2008). Performance of Projects of Standard Design Models. *Supervision Administrative, Annual Performance Review*, 3, 2-189.
- Sambasivan, M., & Soon, Y.W. (2007). Causes and effects of delays in Malaysian construction industry. *British Journal of Management*, 223-235.
- Silverman, D. (2008). *Interpreting qualitative data* (3rd Ed ed.). London: Sage.
- Smyth, H. (2010). Construction industry performance improvement programmes: the UK case of demonstration projects in the ‘Continuous Improvement’ programme. *Construction Management and Economics*, 28(3), 255-270.
- Stein, D. (2012). *Understanding Theory of Change in International Development*. London: The Justice and Security Research Programme, London School of Economics.
- Taborda, C. G. (2010). Leadership, teamwork, and empowerment: Future management trends. *Cost Engineering*, 42(10), 41-44.
- Tekleab, S. B. (2009) the relationship between team size and team performance in management teams: a case of firms in Norway and Denmark. *Academy of Management Review* 27(1), 9-13
- Thake, S. (2014). Sustainable Futures: Investing in Community-Based Organisations. [online] Accessed 31 March, 2019. *New Economics Foundation*.
- Thamhain, R. (2013). Influence of project design teams on performance of projects. *Journal of Project, and Production Management*, 3(2), 82-86
- Stare D. (2012). The “real” success factors on projects. ( 2012). *International Journal of Project Management* 20, 185–190.
- Thi & Swierczek (2007). The effect of human resource competencies on project performance in Vietnamese infrastructure projects. *Journal of Project, and Production Management*, 2(1), 88-92
- Thiry, M. D. (2013). Recent Developments in Projects-Based Organizations. *International Journal of Project Management*, 14(12), 779-786.
- Thomas, G. ( 2014). *Education and theory : strangers in paradigms*. Maidenhead. Open Univ. Press.
- Tinnirello, P. C. (2000). *Revival: Project Management*.

- Tufte, E. R. (2013). *Envisioning information*. & Graphics Press.
- Turetsky, H. &. (2001). An Empirical investigation of Firm Longevity: Molde of the Ex Ante Predictors of Financial Distress. In. *Review of Quantitative Finance and Accounting*,, 16 (12), 323-343.
- UNDP. (2009). *Capacity Development: A UNDP Primer*. Retrieved from [www.tinyurl.com/6q4njsq](http://www.tinyurl.com/6q4njsq)
- UNDP. (2010). *Achieving Debt Sustainability and the MDGs in Small Island Developing States, Discussion Paper, October*. Retrieved from [www.tinyurl.com/7nneb5h](http://www.tinyurl.com/7nneb5h)
- United Nations. *2011 Innovative mechanisms of financing for development, Report of the Secretary General, 1 September*.
- United Nations. (2009). *Report of the Secretary General, Progress Report on innovative sources of development finance, 29 July*.
- Vogel, I. (2012). Review of the Use of ‘Theory of Change’ in International Development. UK Department of International Development.DFID.London.
- White, D. & Walker (2012). ‘Current practice in project management – an empirical study. *International Journal of Project Management*, 1-11.
- Williamson, O. E. (1985). *The economic institutions of capitalism*. Simon and Schuster.
- Wilson, J. (2003). “Gantt charts: a centenary appreciation. *European Journal of Operational Research*, 14(9), 430-437.
- Wilson, J. (2010). *Essentials of Business Research: A Guide to Doing Your Research Project*. SAGE Publications.
- Wirth, N. a. (1992). *The Design of an Operating System and Compiler*. Project Oberon.
- Zachariah, S. &. (2008). Analysis of Community Participation in Project Managed by Non-Governmental Organization: A case of World Vision in central Tanzania.

## APPENDICES

### APPENDIX I: LETTER TO THE RESPONDENTS

WASIKE W. WALUBENGO

P.O BOX 2099-00200

NAIROBI

0722451803

wasikewwalubengo@gmail.com

Dear Respondent

RE: REQUEST TO RESPOND TO THE STUDY QUESTIONNAIRE

I am a student at the University of Nairobi pursuing a Doctor of Philosophy degree in Project Planning and Management. As part of this course requirement, I am required to undertake a research. In this regard my title of study is; **Application of Project Design Tools, Managers` Competencies and Performance of Community Based Projects in Bungoma County Kenya.**

Your organization has been randomly selected to be part of this study. I therefore kindly request for your assistance and cooperation in responding to the questions herein.

The Information given will treated with utmost confidentiality and would only be used for academic purposes.

Looking forward to your cooperation and response.

Yours faithfully,

**WASIKE W. WALUBENGO**

**Ph.D Candidate –UON**

**APPENDIX II: QUESTIONNAIRE FOR OTHER PROJECT EMPLOYEES**

This questionnaire aims to collect data from employees of community based projects in Bungoma county,with the goal of examining “the application of project design tools, managers` competencies and performance of community based projects in Bungoma county Kenya”. This is purely an academic research for my doctoral studies in Project Planning and Management at the University of Nairobi. The results will hence not be traceable to you or any individual person. I therefore urge you to freely answer the questions as honestly as possible. Kindly follow the instructions given at the beginning of each section.

**SECTION A: DEMOGRAPHIC PROFILE OF RESPONDENTS**

Please fill in the information below by ticking appropriately.

1. Please tick the appropriate sector of your project

- Education [ ]
- Agriculture [ ]
- Health [ ]
- Culture and social services [ ]
- Trade [ ]
- Forestry and natural resources [ ]
- Other (Specify).....

2. Please indicate your gender.

- Male [ ]
- Female [ ]

3. What is your age bracket?

Below 26 years. [ ]

26-30 years. [ ]

31-35 years [ ]

36-40 years [ ]

41-45 years [ ]

46-50 years [ ]

51-above year [ ]

4. What is your highest level of education?

Secondary school [ ]

Certificate [ ]

Diploma [ ]

Bachelor's degree [ ]

Masters [ ]

PhD [ ]

Other (specify .....

5. Experience in the organization (tick)

Less than one year [ ]

1 – 4 years [ ]

5 – 9 years [ ]

10 – 14 years [ ]

Above 15 years [ ]

**SECTION B: THE APPLICATION OF PROJECT DESIGN TOOLS AND MANAGERS’ COMPETENCIES ON PERFORMANCE OF COMMUNITY BASED PROJECTS**

The following statements relate to the application of project design tools on performance of community based projects. Kindly indicate the extent to which each of the statement match project design tools traits in your organization

**1. Performance**

a) The following statements relate to performance characteristics of organizations. Kindly indicate the extent to which each of the statement match performance traits in your organization where 1-strongly disagree, 2-disagree, 3-neither agree nor disagree, 4-agree and 5- strongly agree. Please (√) as appropriate.

	<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Completion within budget</b>						
a	Our organization focuses on the amount of budget spent on project	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

b	Tasks are completed within budget	1	2	3	4	5
c	Team members participate in budget making process	1	2	3	4	5
d	Approved budgets guide expenditure on project activities	1	2	3	4	5
e	Minimum project variations	1	2	3	4	5
<b>Project completion within schedule</b>						
a	Project delivery timelines are observed	1	2	3	4	5
b	We experienced project delays	1	2	3	4	5
c	Scheduled tasks are undertaken	1	2	3	4	5
d	Creation of detailed schedule is done prior to project commencement	1	2	3	4	5
e	Creation of detailed forecasts is done at the start of project activities	1	2	3	4	5
<b>Project continuity after donor fund</b>						
a	Financial sustainability is achieved	1	2	3	4	5
b	Organization sustainability is achieved	1	2	3	4	5
c	Project stalled for lack of funding	1	2	3	4	5
d	Project continued after donor funding	1	2	3	4	5
e	Beneficiary feedback are considered in our organization	1	2	3	4	5

b) What are the challenges you face at the work place in relation to achieving project performance?.....  
.....  
.....

c) Kindly explain how completion within budget, completion within schedule and project continuity after donor funding influence performance of community based projects

.....

.....

.....

.....

.....

**2. Logical framework**

a) The following statements relate to logical framework characteristics of organizations. Kindly indicate the extent to which each of the statement match logical framework traits in your organization where 1-strongly disagree, 2-disagree, 3-neither agree nor disagree, 4-agree and 5- strongly agree. Please (√) as appropriate

	<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Output</b>						
a	Our organization achieves project tangible plans on time	1	2	3	4	5
b	Our organization considers important cultural events	1	2	3	4	5
c	We have tracking processes	1	2	3	4	5
d	Actual output is always measured against planed output	1	2	3	4	5
e	We have status reports that pertain to planning	1	2	3	4	5
<b>Activities</b>						
a	project activities are completed on time	1	2	3	4	5
b	Some activities in the schedule are not properly sequenced	1	2	3	4	5



c	Some activities were left out of schedules	1	2	3	4	5
d	A work breakdown structure was prepared to identify all activities	1	2	3	4	5
e	Unrealistic durations are assigned to activities	1	2	3	4	5
<b>Project Objectives</b>						
a	Project objectives are achieved on time	1	2	3	4	5
b	Time required to achieve project objectives is measured	1	2	3	4	5
c	Our projects consider number of beneficiaries	1	2	3	4	5
d	Information needs are provided	1	2	3	4	5
e	Budget is done to achieve objectives	1	2	3	4	5

b) What are the challenges of implementing logical framework in your organization?

.....

.....

.....

c) Kindly explain how application of logical framework influence performance of community based projects

.....

.....

.....

**3. Stakeholder Analysis**

a) The following statements relate to stakeholder analysis characteristics of organizations. Kindly indicate the extent to which each of the statement match stakeholder analysis traits in your organization where 1-strongly disagree, 2-disagree, 3-neither agree nor disagree, 4-agree and 5- strongly agree. Please (√) as appropriate

	<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Project Outcomes</b>						
a	project outcomes are achieved on time	1	2	3	4	5
b	Funding influences project outcome	1	2	3	4	5
c	Stakeholders slow down decision making	1	2	3	4	5
d	There are many stakeholders initiated variations in the project	1	2	3	4	5
e	Stakeholders influence project success	1	2	3	4	5
<b>Inclusion</b>						
a	Various stakeholders included in the project	1	2	3	4	5
b	Local culture events are held	1	2	3	4	5
c	Our organization utilises stakeholder expertise	1	2	3	4	5
d	Stakeholders provide project feedback	1	2	3	4	5
e	Stakeholders grant project acceptance	1	2	3	4	5
<b>Capability</b>						
a	Stakeholders are identified based on individual performance capabilities	1	2	3	4	5
b	We review project requirements with stakeholders	1	2	3	4	5
c	Stakeholders play a role in uncovering project risks	1	2	3	4	5
d	Stakeholders Provide input on project goals from external perspectives.	1	2	3	4	5
e	Stakeholders Provide oversight role in the project	1	2	3	4	5

b) What are the challenges of implementing stakeholder analysis in your organization?

.....

.....

.....

c) Kindly explain how application of stakeholder analysis influence performance of community based projects

.....

.....

.....

**4. Problem Tree Analysis**

a) The following statements relate to problem tree analysis characteristics of organizations. Kindly indicate the extent to which each of the statement match problem tree analysis traits in your organization where 1-strongly disagree, 2-disagree, 3-neither agree nor disagree, 4-agree and 5- strongly agree. Please (√) as appropriate

	<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Identified Problems</b>						
a	Constraints to the problems are identified	1	2	3	4	5
b	The main problem is always selected among other community problems	1	2	3	4	5
c	Consensus building is done when identifying the right problem	1	2	3	4	5
d	Our organization identifies the right schedules for problems identified	1	2	3	4	5
e	Identified problems are well defined	1	2	3	4	5

<b>Root Causes</b>						
a	Factors contributing to the problem are always analyzed	1	2	3	4	5
b	Culture misalignments are identified	1	2	3	4	5
c	Causes of the main problem are identified	1	2	3	4	5
d	Problem is always defined	1	2	3	4	5
e	Data collected is always analysed	1	2	3	4	5
<b>Effects</b>						
a	Proactive plans are done to mitigate effects	1	2	3	4	5
b	Effects of the main problems are identified	1	2	3	4	5
c	Immediate effects are identified	1	2	3	4	5
d	Long term effects are identified	1	2	3	4	5
e	Cause effect analysis exist	1	2	3	4	5

b) What are the challenges of implementing problem tree analysis in your organization?

.....

.....

.....

c) Kindly explain how application of problem tree analysis influence performance of community based projects

.....

.....

.....

## 5. Gantt Charts

a) The following statements relate to Gantt chart characteristics of organizations. Kindly indicate the extent to which each of the statement matches Gantt chart traits in your organization where 1-strongly disagree, 2-disagree, 3-neither agree nor disagree, 4-agree and 5- strongly agree. Please (√) as appropriate

	<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Resources</b>						
a	Resources needed for the project are sought before project commencement	1	2	3	4	5
b	Resources identified meet economic requirements of the project	1	2	3	4	5
c	Project schedules are present	1	2	3	4	5
d	Resources allowance is made on each activity	1	2	3	4	5
e	Top management approve resource allocation	1	2	3	4	5
<b>Work accomplished</b>						
a	Type of work accomplished within time is captured	1	2	3	4	5
b	Amount of work accomplished within time is recorded	1	2	3	4	5
c	Work accomplished after time is reviewed	1	2	3	4	5
d	Project matches skilled workers to appropriate jobs	1	2	3	4	5
e	Absenteeism of staff is high in the project	1	2	3	4	5
<b>Time taken</b>						

a	Amount of time taken to accomplish tasks is monitored	1	2	3	4	5
b	There is a lot of reworking in the project	1	2	3	4	5
c	Schedules which meet deadline are identified	1	2	3	4	5
d	Timelines are identified	1	2	3	4	5
e	There are frequent project design changes	1	2	3	4	5

b) What are the challenges of implementing Gantt chart in your organization?

.....

c) Kindly explain how application of Gantt chart in project design influences performance of community based projects

.....

## 6. Managers Competencies

a) The following statements relate to managers' competencies characteristics of organizations. Kindly indicate the extent to which each of the statement matches managers' competencies traits in your organization where 1-strongly disagree, 2-disagree, 3-neither agree nor disagree, 4-agree and 5- strongly agree. Please (√) as appropriate

	Statement	1	2	3	4	5
<b>Resource mobilisation</b>						
a	Our resource mobilisation skills support organizational sustainability	1	2	3	4	5
b	Our organization has sound financial management system	1	2	3	4	5
c	We depend on external funding	1	2	3	4	5
d	Staff are trained on funding proposal writing skills	1	2	3	4	5

e	Coordinated resource mobilization approach exist	1	2	3	4	5
<b>Team Management</b>						
a	Project manager has ability to coordinate a group of individuals	1	2	3	4	5
b	Project manager has adequate team management experience	1	2	3	4	5
c	There are regular performance appraisals	1	2	3	4	5
d	Our organization is focused on teamwork	1	2	3	4	5
e	Project manager has adequate supervisory experience	1	2	3	4	5
<b>Technical competence</b>						
a	Project manager is registered with relevant professional bodies	1	2	3	4	5
b	project manager has project management capability	1	2	3	4	5
c	Result focus approach in management	1	2	3	4	5
d	Our organization has recurrent training of managers	1	2	3	4	5
e	Team development abilities	1	2	3	4	5

b) What are the challenges affecting manager's competencies in your organization?

.....

c) Kindly explain how manager's competences influence performance of community based projects

.....

END OF THE QUESTIONNAIRE

Thank You for Participating in the Research

## **APPENDIX III: INTERVIEW GUIDE FOR PROJECT MANAGERS**

### **Introduction**

The purpose of this interview guide is to collect information on the ‘ **application of project design tools, managers` competencies and performance of community based projects in Bungoma County**’. The information collected will be used for academic purposes only and it is expected that the findings from this study will make significant contribution towards enhancing performance of community based projects in Bungoma County.

### **SECTION A: Demographic information**

1. What the project sector?
2. What is your gender?
3. What is your age bracket?
4. What is your highest level of education?
5. What is your level of experience in the organization?

### **SECTION B: Specific Information on study variables**

1. How would you rate the performance of community based projects in Bungoma County?
2. How would you rate the satisfaction of project beneficiaries in relation to performance of community based projects in Bungoma County since 2015?
3. How would you rate the application of logical framework in relation to performance of community based projects in Bungoma County?
4. To what extent does the application of stakeholder analysis influence performance of community based projects in Bungoma County?
5. How would you rate the application of problem tree analysis in relation to performance of community based projects in Bungoma County?



6. To what extent does the application of Gantt charts influence performance of community based projects in Bungoma County?
7. Does project manager`s competencies influence the relationship between application of project design tools and performance of community based projects in Bungoma County? If yes please elaborate
8. What are your comments and recommendations regarding performance of community based projects in Bungoma County?
9. Any other comment on this topic

**Thank you for taking your time to participate**


## APPENDIX IV : RESEARCH PERMIT


**THIS IS TO CERTIFY THAT:**  
**MR. WASIKE WILBERFORCE**  
**WALUBENGO**  
of **UNIVERSITY OF NAIROBI** , 0-200  
Nairobi, has been permitted to conduct  
research in **Bungoma County**

**Permit No : NACOSTI/P/18/50278/20944**  
**Date Of Issue : 29th January, 2018**  
**Fee Received : Ksh 2000**

on the topic: **APPLICATION OF PROJECT**  
**DESIGN TOOLS, MANAGERS`**  
**COMPETENCIES AND PERFORMANCE OF**  
**COMMUNITY BASED PROJECTS IN**  
**BUNGOMA COUNTY KENYA**


for the period ending:  
**29th January, 2019**

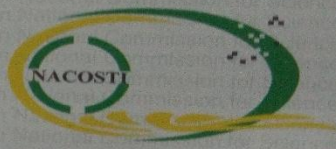
  
.....  
**Applicant's**  
**Signature**

  
.....  
**G.P. Kalerwa**  
**Director General**  
**National Commission for Science,**  
**Technology & Innovation**

**CONDITIONS**

1. The License is valid for the proposed research, research site specified period.
2. Both the Licensee and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This License does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this License including its cancellation without prior notice.

  
**REPUBLIC OF KENYA**

  
**National Commission for Science,**  
**Technology and Innovation**

**RESEARCH CLEARANCE**  
**PERMIT**

**Serial No.A 17290**  
**CONDITIONS: see back page**

**APPENDIX V: RESEARCH AUTHORIZATION LETTER**



**NATIONAL COMMISSION FOR SCIENCE,  
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,  
2241349, 3310571, 2219420  
Fax: +254-20-318245, 318249  
Email: dg@nacosti.go.ke  
Website : www.nacosti.go.ke  
When replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No. **NACOSTI/P/18/50278/20944**

Date **29<sup>th</sup> January, 2018**

Wasike Wilberforce Walubengo  
University of Nairobi  
P.O. Box 30197-00100  
**NAIROBI.**

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on "*Application of project design tools, managers competencies and performance of community based projects in Bungoma County, Kenya,*" I am pleased to inform you that you have been authorized to undertake research in **Bungoma County** for the period ending **29<sup>th</sup> January, 2019.**

You are advised to report to **the County Commissioner and the County Director of Education, Bungoma County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a **copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

*GP Kalerwa*  
GODFREY P. KALERWA MSc., MBA, MKIM  
FOR: DIRECTOR-GENERAL/CEO



Copy to:

The County Commissioner  
Bungoma County.



19/2/2018

The County Director of Education  
Bungoma County.

*National Commission for Science, Technology and Innovation is ISO9001:2008 Certified*

**APPENDIX VI: RESEARCH AUTHORIZATION LETTER FROM THE  
MINISTRY**

REPUBLIC OF KENYA



THE PRESIDENCY  
MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Telephone: 055- 30326  
FAX: 055-30326  
E-mail: ccbungoma@yahoo.com  
When replying please Quote

Office of the County Commissioner  
P.O. Box 550 - 50200

BUNGOMA

28<sup>th</sup> February, 2018

REF:ADM.15/13/VOL.11/ 50

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION

The bearer of this letter Mr. Wasike Wilberforce Walubengo a student of Nairobi University has sought authority to carry out a research on, "Application of project design tools, managers competencies and performance of community based projects in Bungoma County, Kenya," for the period ending on 29<sup>th</sup> January, 2019.

Authority is hereby granted for the specific period and any assistance accorded to him in this pursuit would be highly appreciated

A handwritten signature in black ink, appearing to read 'Fy.', written over a faint circular stamp.



Fidelis L. Babu  
For County Commissioner  
BUNGOMA COUNTY

## APPENDIX VII: AUTHORIZATION LETTER



REPUBLIC OF KENYA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY  
State Department of Education – Bungoma County

When Replying please quote  
e-mail: [bungomacde@gmail.com](mailto:bungomacde@gmail.com)

County Director of Education  
P.O. Box 1620-50200  
BUNGOMA

Ref No: BCE/DE/19/VOL.1/122

Date: 20<sup>th</sup> February, 2018

**TO WHOM IT MAY CONCERN**

**RE: AUTHORITY TO CARRY OUT RESEARCH – WASIKE WILBERFORCE  
WALUBENGO - REF: NACOSTI/P/18/50278/20944**

The bearer of this letter Wasike Wilberforce Walubengo is a student of University of Nairobi. He has been authorized to carry out research on *“Application of project design tools, managers competencies and performance of community based projects in Bungoma County, Kenya”* for the period ending 29<sup>th</sup> January, 2019.

Kindly accord him the necessary assistance.



JACOB ONYIEGO  
COUNTY DIRECTOR OF EDUCATION  
BUNGOMA COUNTY

For: COUNTY DIRECTOR OF EDUCATION  
BUNGOMA  
P. O. Box 1620,  
BUNGOMA - 50200

**APPENDIX VIII: LETTER FROM THE UNIVERSITY**



**UNIVERSITY OF NAIROBI**  
**OPEN, DISTANCE & e-LEARNING CAMPUS**  
**SCHOOL OF OPEN AND DISTANCE LEARNING**  
**DEPARTMENT OF OPEN LEARNING**  
**NAIROBI LEARNING CENTRE**

Your Ref:

Main Campus  
Gandhi Wing, Ground Floor  
P.O. Box 30197  
NAIROBI

Our Ref:

Telephone: 318262 Ext. 120

10<sup>th</sup> January, 2018

REF: UON/ODEL/SODI/NLC/108

**TO WHOM IT MAY CONCERN**


RE: WASIKE WILBERFORCE WALUBENGO -REG NO - 1.83/50531/2016

This is to confirm that the above named is a student at the University of Nairobi, Open Distance and e learning (ODEL) Campus, School of Open and Distance learning, Department of Open learning pursuing Doctor of Philosophy in Project Planning and Management and specializing in Planning, Design and Implementation.

He has Successfully completed his coursework and his Research Thesis titled "Application of project design tools, managers' competencies and performance of community based projects in Bungoma County Kenya."

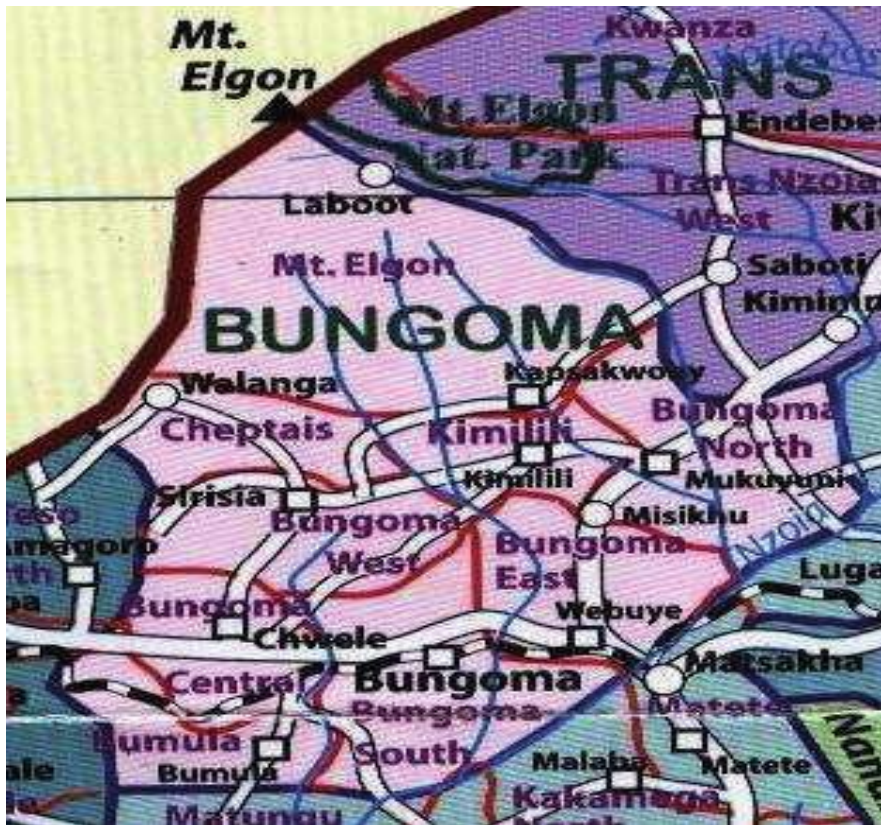
He has successfully defended his proposal and he is currently going for data collection.

Any assistance accorded to him will be highly appreciated.

  
DR. ANGELINE MUIWA  
COORDINATOR  
NAIROBI REGION



APPENDIX V: SKETCH MAP FOR BUNGOMA COUNTY



Source: ([www.bungoma.go.ke](http://www.bungoma.go.ke)).