

DETERMINANTS OF EFFECTIVE IMPLEMENTATION OF PUBLIC HEALTH CONSTRUCTION PROJECTS IN KENYA

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Abstract: Effective implementation of projects is not an easy task however there is a clear way to measure both the success and failure of a project and that is when it delivers on all agreed project objectives, be it scope, schedule, budget, quality or outcomes like goals to be achieved or strategic positions to be achieved. The purpose of the study was to examine the Determinants of Effective implementation of Public Health Construction projects in Nyamira County by focusing on four specific objectives: project leadership, budget allocation, project team competency and monitoring and evaluation. The study was guided specifically by the following four theories: the theory of budgeting, contingency theory, control theory and project management competency theory. The study used descriptive research design and the focus was on the 46 Public Health Construction projects within the 133 public Health facilities in Nyamira County. The unit of observation was Project managers, assistant project managers and the project supervisors of the 46 Public Health Construction Projects and the unit of analysis were the 46 public health construction projects in Nyamira County. The study adopted a census survey design with the respect of the unit of analysis which was the 46 Public Health Construction Projects in Nyamira County. A census was conducted since only 46 projects were studied and a census is applicable when the entire population is small. Data was collected through the use of semi structured questionnaires which were administered to the project manager's, assistant project managers and project supervisors who oversaw the activities of the 46 Public health Construction Projects. A pilot study was conducted to pretest the validity and reliability of data collection instruments. After data, had be collected it was prepared in readiness for analysis by editing, handling blank responses, coding, categorizing and keying into statistical package for social sciences (SPSS) computer software for analysis. SPSS software version 21.0 was used to produce frequencies, descriptive and inferential statistics were used to derive conclusions and generalizations regarding the population. A multiple regression model was used to show the relationship between the independent variables to the dependent variable. Data was presented using pie charts and tables to make it reader friendly. The study found that project leadership, budget allocation, project team competence and project monitoring and evaluation had a positive and significant effect on the effective implementation of Public Health Construction projects in Nyamira County. The study recommends that best tools for monitoring projects be identified, the monitoring process should also be improved from the current annual case and more so the reports are prepared after every monitoring and evaluation process. The project leaders and project teams should be competent and funds delays should be minimized at all costs to enhance effective implementation of Public Health Construction Projects.

Keywords: project leadership, budget allocation, project team competency and monitoring and evaluation.

I. INTRODUCTION

1.1 Background of the Study

Projects are activities or an undertaking that need to be accomplished by certain date, for a certain amount of money and within some expected level of performance. Important aspects of a project includes "inputs" in the form of men, money, materials, and plans and "outputs" in the form of activities, products or services (Asfandyar, 2012). Abuya, (2016) argues

that development projects in Kenya have become the principal mechanisms through which governments deliver public services. Understanding this strategic role is important because few politicians and citizens appreciate the role that development projects play in the delivery of essential public services.

Health construction projects include the improving of health facilities and installing of the latest patient safety technology and advanced medical equipment. KHSSP, 2012-2018 defines health construction infrastructure as all investments relating to physical infrastructure, medical equipment, communication and ICT. With establishment of Counties, the National level prioritize establishment of a minimum number of health facilities, based on the expected services as defined in the KEPH (KHSSP III).

Construction is a basic pillar for global competitiveness and foundational enabler to Kenya's Vision 2030. Kenya has experienced a construction boom during the last decade. According to Kenya National Bureau of Statistics (KNBS) construction sector in Kenya contributes 4.9 per cent of the Gross Domestic Product (GDP) (KNBS, Economic Survey Report, 2013). Infrastructure development accounted for 8.7 per cent of the total budget for Financial Year 13/14 of the total budget of KES1.6 Trillion (KNBS, Economic Survey Report, 2013).

1.1.1 Implementation of Public Health Construction Projects

Al-Kharashi and Skitmore (2009) identify leading causes of construction project delay in Saudi Arabia by conducting a questionnaire survey administered to contractors, consultants and clients. They conclude that the most two significant causes of project delay are lack of finance to complete the work by the client and delay in progress payments by the owner. Haseeb et al. (2011) conduct a research on the causes of delay in large construction projects in Pakistan, where the following factors are reported to be the most influential: natural disaster; financial and payment problems; improper planning; poor site management; insufficient experience; shortage of materials and equipment.

Doloi et al. (2012) report the factors affecting project delays in Indian construction projects by surveying construction professionals in India. After the factor analysis, the most influential factors of project delay were identified as follows: lack of commitment; inefficient site management; poor site coordination; improper planning; lack of clarity in project scope; lack of communication; and sub-standard contract. Based on the 5,424 scheduled activities, Lindhard and Wandahl (2014) investigated the principal causes of project delay in Denmark construction projects through the Last Planner System theory. The most frequent causes of project delay are found to be connecting work, change in work plans, workforce, external conditions, and material and construction design. Santoso and Soeng (2016) conducted a research on the causes and effects of delay in construction projects in Cambodia. Based on the importance index of the factors rated by the contractors, consultants and clients, the top ten factors found to be related to the contractor and project other than rain and flood factors were also time, cost and quality.

Pourrostam and Ismail, (2012) carried out a study in construction industry and found out that the process of construction in Iran is slow and delay as well as prolongation of contract time is considered as a common problem in the Iranian construction projects. The delay time depends on such factors as the governing conditions on contracts, the available funds, contractors' experience, consultants' experience, construction materials and the environmental conditions. Prolongation of contract duration seems to be an important problem in construction projects in the developing countries. In Iran, the majority of projects are completed with delay. The delays inflict major damages to both the employers and contractors. According to the study undertaken by Sambasivan and Soon (2007), the construction projects are delayed in Malaysia as a result of: 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, labor supply, equipment availability and failure, lack of communication between parties, and mistakes during the construction stage.

The problem of delays in the construction industry is a global phenomenon and studies carried out in Saudi Arabia found that only 30% of the construction projects were completed within the scheduled completion dates and that the average time overrun was between 10% and 30% and in Nigeria, the performance of the construction industry was found to experience time overruns such that 7 out of 10 projects surveyed were not completed on time (International Journal of Project Management, 2007).

Mohammed (2012) while carrying out a study on the causes of delay in Nigeria construction industry observes that delay is one of the major problems in the construction industry. These delays led to many negative effects such as disputes between clients and contractors, increased costs, loss of productivity and revenue, and termination of contract. Like most developing

countries, Nigeria construction industry has suffered many setbacks in terms of completion of the project at stipulated period within the predetermined sum. Majority of the construction project in Nigeria experience time and cost overrun which in turn lead to the abandonment of project. He observes that the factors influencing delay in the country are; improper planning, lack of an effective communication system, errors in design, shortage of supply like steel, concrete, slow decision making, financial issues, shortage of material, cash-flow problems during construction, increase in quantities, mismanagement by the contractor, notification of extra work, changes in site conditions, date of notice to proceed, subcontractors.

Fugar and Adwoa (2010) observe that construction delay is a major problem facing the Ghanaian construction industry. He finds out that the major causes of delay are; delay in honoring certificates, underestimation of the cost of a project, underestimation of complexity of project, difficulty in accessing bank credit, poor supervision, underestimation of time for completion of projects by contractors, shortage of materials, poor professional management, fluctuation of prices/rising cost of materials and poor site management. The top three were financial, materials as well as scheduling and control.

El-Razek et al. (2008) evaluated the main causes of delays in Egypt. According to their study, the main causes included financial difficulties of contractors during construction, changes by employers or his agent and payment problems by employers. Even though the contractor was identified as the most significant factor in causing delays, it is worth noting that the factors relating to contractors are caused by employers. The reason is that awarding projects by means of tender is done by considering the lowest price in most cases which in turn leads to the selection of less experience and incompetence contractors. Lack of project funding is also directly associated with employer.

Muchungu, (2012) provides evidence that despite the high quality of training of consultants in the building industry in Kenya and regulation of the industry in major urban areas, construction projects do not always meet the key performance. This is manifested by myriad projects that have cost overrun, delayed completion period and poor quality resulting to collapse building in various parts of the country, high maintained costs, dissatisfied clients and even buildings which are not functional.

According to Kenya Vision 2030, one of the social pillars seeks to incorporate rehabilitation of county health facilities as a social pillar which will aim at offering integrated and comprehensive healthcare to the society which the government has embarked on development of health facilities in some parts of the country (Nabukaki & Omwenga. 2022). The effectiveness of most health projects is determined by both technical and managerial capacity of the human resources of the implementing agencies. In addition, appropriate supportive infrastructure is a necessity. The Centralized projects within the health ministry have been criticized for regional and provincial discrepancies in the health service distribution, disparities in resource allocations, and inequitable access to quality health services. Over the past decade, Kenya has committed to reforms to decentralize the country's health management system, to increase decision-making power for resource allocation and service delivery at the district and facility levels and to allow for greater community involvement in health projects management (Ndavi et al, 2009).

1.2 Statement of the Problem

Abuya, (2016) argues that development projects in Kenya have become the principal mechanisms through which governments deliver public services. In Kenya the government and investors are investing heavily on setting up chains of clinics, hospitals and expanding the current health facilities to serve a larger boarder segment of patients (KHS, 2016). Despite the efforts of both the government and investors there has been an increase in the number of incomplete and completely stalled public health construction projects others have being completed but the health facilities are not being used (Njau, & Omwenga,2019).

In Nyamira County a total number of 46 Public Health Construction Projects were listed as either incomplete or completed but with unused facilities (MHR, 2016). A report by the Ministry of Health indicated that a total of 20 (43.5%) of Public Health Construction projects in Nyamira County had stalled with respect to funding allocation but rated as almost in completion state. Others were 14 (30.4%) rated as medium stalled and 12 (26.1%) rated as low priority rate of completion status. Twenty nine percent (29%) of the Public Health Construction Projects in Nyamira had been completed but unused. This translated to an economic loss estimated to be Ksh 145 million per year in lost revenues if services were offered. The delay of project implementation affects every stakeholder in the economy. It delays the government source of revenue and lead to loss of government funds. Project delays prolong the investors' payback period and deny the citizens the much – needed health services (Ogari, 2012).

This study aims at bridging the existing gaps by examining the Determinants of Effective Implementation of Public Health Construction Projects in Nyamira by studying four variables; project leadership, budget allocation, project team competency and monitoring and evaluation.

1.3 Objectives of the Study

1.3.1 General Objective of the Study

The general objective of the study was to examine the Determinants of Effective Implementation of Public Health Construction Projects in Nyamira County, Kenya.

1.3.2 Specific Objectives of the Study

The specific objectives of the study were to;

1. To establish how project leadership determine the effective implementation of Public Health Construction Projects in Nyamira County, Kenya.
2. To explore the extent to which budget allocation determine the effective implementation of Public Health Construction projects in Nyamira County Kenya.
3. To determine the extent to which Project Team Competency influences the effective implementation of Public Health Construction Projects in Nyamira County Kenya.
4. To examine the influence of Monitoring and Evaluation on the effective implementation of Public Health Constructions projects in Nyamira County Kenya.

1.4 Research Questions

The study sought to answer the following;

1. How does project leadership determine the effective implementation of Public Health Construction Projects in Nyamira County, Kenya?
2. To what extent does budget allocation determine the effective implementation of Public Health Construction projects in Nyamira County, Kenya?
3. To what extent does Project Team Competency influence the effective implementation of Public Health construction projects in Nyamira County, Kenya?
4. How does Monitoring and Evaluation influence the effective implementation of Public Health Construction projects in Nyamira County, Kenya?

1.5 Justification of the Study

This study provides more insight on the Determinants of Effective Implementation of Public Health Construction Projects in Nyamira County, Kenya. The beneficiaries of this study will be; the government, Nyamira County, researchers and scholars and the construction industry.

1.6 Scope of the Study

The study focused on the Determinants of Effective Implementation of Public Health Construction Projects in Nyamira County, Kenya. These determinants are the project leadership, Budget allocation, Project Team Competency, and Monitoring and Evaluation. The study focused on the 46 Public Health Construction projects in the 133 health facilities in Nyamira County (Attached in appendix III). The study was carried out in Nyamira County; Kenya. The unit of observation was the project managers, project supervisors and the assistant project managers of the 46 Public Health Constructions Projects in Nyamira County. The unit of analysis was the 46 Public Health Construction Projects in Nyamira County.

2. LITERATURE REVIEW

2.1 Theoretical Framework

Bull (2009) notes that a theory is a set of constructs, prepositions and definitions of an organized view of phenomena by pointing the relationship among variables with the purpose of examining the phenomena. The theoretical foundation for this study is informed by the Theory of Budgeting, Contingency Theory, Control Theory and Project Management Competency Theory.

2.1.1 The Theory of Budgeting

In the Theory of Budgeting Hirst (1987) explains that an effective budgetary control solves an organization's need to plan and consider how to confront future potential risks and opportunities by establishing an efficient system of control, a detector of variances between organizational objectives and performance (Shields & Young, 1993). Budgets are considered to be the core element of an efficient control process and consequently vital part to the umbrella concept of an effective budgetary control. Budgets project future financial performance which enables evaluating the financial viability of a chosen strategy. In most organizations, this process is formalized by preparing annual budgets and monitoring performance against budgets. Budgets are therefore merely a collection of plans and forecasts (Silva and Jayamaha, 2012). Benchmarks for management and task controls are provided by comparing actual results with budgeted plans and to take corrective actions if necessary (Sharma, 2012). Budgets can further influence the behavior and decisions of employees by translating business objectives, and providing a benchmark against which to assess performance.

This theory supports the objective of the influence of Budget allocation by answering the research question: to what extent does budget allocation determine the effective implementation of Public Health Construction projects. The theory is essential to this study since having a budget allows the objectives of the project to be achieved and a standard of performance to be established which will be used to compare the planned budget and the actual budget to enable the project management team and project manager to know if there is any cost overruns or if they are working within the approved budget. Projects are implemented within an approved budget hence the theory of budgeting play a key role explain how to budget allocation determine the effective implementation of projects.

2.1.2 Contingency Theory

The contingency theory of leadership was proposed by the Austrian psychologist Fred Edward Fiedler in his landmark 1964. Contingency theories describe how situations influence leadership actions. The Hersey-Blanchard Situational Leadership Theory created by Hersey and Blanchard (2009) encourages leaders to choose a style based on the capability of their subordinates. If new subordinates need specific instructions, effective project managers tell them what to do, typically by providing comprehensive step-by-step procedures (Hersey & Blanchard, 2009).

When team members know how to accomplish a task, project managers tell subordinates what needs to be done but spend less time communicating how to do it. If the project team members don't require much direction, the project leader focuses on motivating the team to produce quality results. When a project team member can operate completely on his own, the project manager delegates authority to him/her (Fielder, 2004). Using this theory, project managers select a style that fits the current situation to work most productively. This theory support the objective of the influence of project leadership by explain how leadership styles affect the way the project manager manages the project teams.

2.1.3 Control Theory

Control theory, invented by Ouchi (1979) and Eisenhardt (1985) uses the notion of modes of control to describe all attempts to ensure that individuals in organizations act in a way that is consistent with organizational goals and objectives (Kirsch, 1997). The concept of control is based on the premise that the controller and the controlee have different interests. These different interests will be overcome by the controller's modes of control (Tiwana, 2009). Modes of control may distinguish between formal and informal mechanisms. Formal modes of control are defined as Behavior control and Outcome control. Behavior control consists of articulated roles and procedures and rewards based upon those rules. Outcome control is mechanisms for assigning rewards based on articulated goals and outcomes.

The informal modes of control are carried out by the control modes labeled as clan and self. Clan are the mechanisms of a group sharing common values, beliefs, problems, and these mechanisms work through activities as hiring & training of staff, socialization etc. The control mode of the self is about individually defined goals and can be carried through the mechanisms of individual empowerment, self-management, self-set goals, etc. (Kirsch, 1997). Based on this understanding, PM this research will use control theory to focus on modes of control in different phases of construction project implementation. This theory is linked to the objective of the influence of monitoring and evaluation on the effective implementation of public health construction project.

2.1.4 Project Management Competency Theory

McClelland & McBer in the 1980s established the competence theory. The authors defined competency as the underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation. Interest in project management competence stems from the very reasonable and widely held assumption that if people who manage and work on projects are competent, they will perform effectively and that this will lead to successful projects and successful organizations (Beer, 1990; Smith, 1976). Competence is generally accepted, however, as encompassing knowledge, skills, attitudes and behaviors that are causally related to superior job performance. Crawford (as cited in Njeri, & Omwenga, 2019), stated that professional competence in project management is attained by combination of knowledge acquired from training and its subsequent application and other skills developed in the course of work.

2.2 Conceptual Framework

A conceptual framework gives the research an overview of how various issues in the research work are conceived, and their relationships (Yin, 2013). In this study the dependent variable is the effective implementation of Public Health Construction projects while the independent variable is; project leadership, budget allocation, project team competency and monitoring and evaluation. The conceptual framework is showed in Figure 2.1

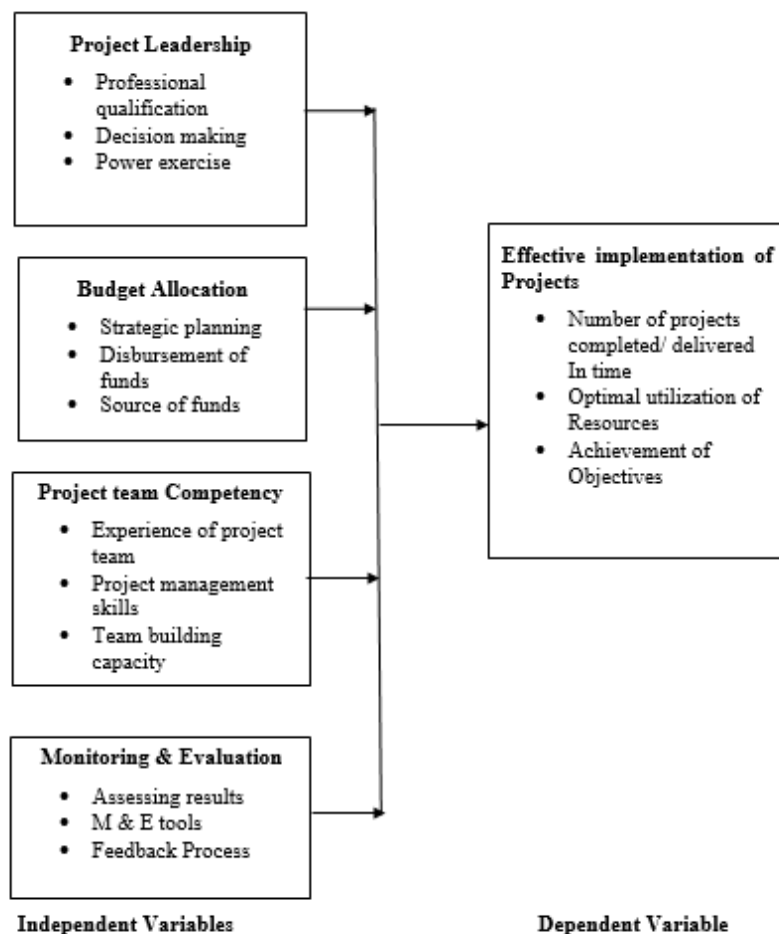


Figure 2.1 Conceptual Framework

Activate !

2.3 Empirical Review

Empirical research is a way of gaining knowledge by means of direct and indirect observation or experience. Empirical evidence (the record of one's direct observation or experiences) can be analyzed quantitatively or qualitatively. The study will give the empirical review of how project leadership, project team competency, budget allocation and monitoring and evaluation determine the effective implementation of public health construction projects.

2.3.1 Project Leadership and Implementation of Projects

Pak, (2015), conducted a study on Moderating Effect of Top Management Support on Relationship between Transformational Leadership and Project Success. The study covered a total of 125 project managers that were selected through systematic sampling technique by using mail survey method. SPSS version 22 was used to analyze the study data. The study concluded that project success can be enhanced through unfolding the relationships between project managers' transformational leadership and top management support. The study indicated that there is positive and significant relationship between project managers' transformational leadership behaviors (individually and collectively) and project success in Pakistan. This study focused on the Moderating Effect of Top Management Support on Relationship between Transformational Leadership and Project Success whereas the current study will focus on Determinants of Effective Implementation of Public Health Construction Projects.

Omolo (2015) conducted a study on Influence of Leadership on the implementation of project management in public funded projects. The study targeted 304 employees of all categories Kenya Pipeline Company that were selected using simple random sampling technique and a purposive sampling was used to select seven project managers within the company. The computer program SPSS version 17.0 was used to analyze the data. The study concluded that leadership influences project management. The study indicated that there a positive relationship between project leadership and implementation of projects. This study focused on the Influence of Leadership on the Implementation of project management in the public funded projects while the current study will focus on how project leadership determines the effective implementation of Public Health Construction Projects.

2.3.2 Budget Allocation and Implementation of Projects

Mwangi, and Ngugi, (2014) conducted a study on determinant of regulations on growth of electricity projects in Kenya. The study targeted 450 respondents while employing a simple random sampling technique in coming up with a sample size of 45 respondents. The study generated both qualitative and quantitative data where quantitative data was coded and entered into Statistical Packages for Social Scientists (SPSS Version 21) and analyzed using descriptive statistics. The study found out that dependence of capital from donors for electrification growth slowed project development hence affecting project performance. There exists a conceptual research gap between the above study and this study. The above study focused on the determinants of regulations on growth of electricity projects while the current study focuses on Determinants of Effective Implementation of Public Health Construction projects in Nyamira County, Kenya.

Shadrack, (2014) conducted a study on the Influence of Budgeting on Implementation of Development Plans in Public Secondary Schools in Uriri District, Migori County, Kenya. He found out that the majority of board of management (90%) stated that the budgeting competences influence implementation of school building construction. The competences include; budgeting skills, monitoring ability, evaluation skills, procurement knowledge, project identification and decision making abilities. They also agreed that the above skills are competences required of budgeting committee members. Majority of the board members stated that on top of the above, competences budgeting committee need to have the following competencies; leadership qualities, communication skills, budgeting reviews and coordination skills. While his study focused on the Influence of Budgeting on Implementation of Development Plans in Public Secondary Schools in Uriri District, Migori County, Kenya, this study focuses on Determinants of Effective Implementation of Public Health Construction Projects in Nyamira County, Kenya.

2.3.3 Project Team Competency and Implementation of Projects

Ling and Mau, (2014) conducted a study on the effect of competency and communication on project outcomes in cities in China. Using a structured questionnaire, data was collected through face- face, interviews and e- mails. The results show that competency of contractors has more significant correlations with project outcomes than the competency of consultants, suggesting that is far more important to engage competent contractors Previous management studies have investigated the impact of competency on performance. Dainty, (2004) have argued for a competency based performance model for construction project managers where managerial behavior input is appraised and nine performance indicators for PM competency are developed to comprise team building, leadership, decision-making, mutuality and approachability, honesty and integrity, communication, learning, understanding and application, self-efficacy, and maintenance of external relations. In the context of project management; it is assumed that if the project manager and the project team have all the required competence for the work then the project implementation will be successful. Fisher, (2010) did a study on project team

competency in relation to the implementation of projects and argues that skills on their own, including their applications, do not make an effective people project manager. Because behaviors drive outcomes, specific behaviors for each skill need to be applied to make these skills truly effective. It is the application of these skills that is the catalyst to being an effective people project manager. This study contributes to a better understanding of what practitioners consider makes an effective project manager by highlighting these behavioral competences.

Jerome, (2013) conducted a study on project management competency factor on built environment as his results of this study showed that there is a moderately consistent view of the competencies that should be demonstrated by effective project managers. However, there are a number of competencies that showed high levels of statistical deviation, indicating a wide range of disagreement about their importance to successful project management. These include: provide staffing to the project organization; handle the portfolio management processes; characterize corporate project processes; establish infrastructure for communication; handle the management of a programme.

2.3.4 Monitoring & Evaluation and Implementation of Projects

Mwangu, (2015) conducted a study on How Monitoring and Evaluation Affects the Outcome of Constituency Development Fund Projects in Kenya: A Case Study of Projects in Gatanga Constituency. A field survey was conducted using a sample of 45 respondents who were selected by stratified random sampling. The data were collected using structured questionnaires and analyzed using Statistical Package for Social Sciences (SPSS, Version 16.0). From the findings, 77.8% of the respondents agreed that monitoring and evaluation affects project success to a great extent, 17.8% to a moderate and 4.4% to a lesser extent. All the project supervisors and majority of the beneficiary clients rated this factor highly, similarly were the project contractors. The findings agree with the views of project management scholars on the role of monitoring and evaluation on project success. Mathis, et al, (2011) conducted a study on the Best Practices in Monitoring and Evaluation in the USAID Turkey. The USAID Turkey M&E plan utilized a variety of data sources, including national population based surveys; administrative, service and financial statistics; self-administered assessments for NGOs and questionnaires for the government of Turkey; and Quality Surveys that include facility checklists, client exit interviews and mystery client visits. The conclusions emerging from the USAID Turkey M&E experience are that M&E is a program asset, not a burden. Local ownership is fundamental to increased utilization and sustainability. Leadership continuation and commitment is requisite. This study has a conceptual gap since it focused on the best practices on M & E while the current study focuses on the determinants that of effective Public Health Construction projects implementation in Nyamira County. In addition, this study presents a contextual gap since it focused on Turkey economies. A research carried out by Ika et' al (2010) established that project success was insensitive to the level of project planning efforts but on the other hand ascertained that a significant correlation does exist between the use of monitoring and evaluation tools and project "profile," a success criterion which was an early pointer of project long-term impact. Once again Ika et' al (2010) accentuates that M&E is even more critical than planning in achievement of project success. Similarly one of the components of the project management methodology whose main aim is to achieve project success was monitoring project progress (Beatrice & Omwenga ,2017).

2.4 Critique of Existing Literature

Barret, (2007) conducted a study on challenges affecting devolution in the public sector and found out that centralized system of government suffers informational disadvantages that negatively impact its capacity to provide an effective and balanced distribution of services. This occurs predominantly where the distribution of resource endowments within nations is heterogeneous. Additionally, where the needs, constraints and aspirations vary across communities the central government is limited in its knowledge on the specific intricacies of each region. His study focused on challenges affecting devolution in the public sector thus presenting a conceptual gap(Beatrice & Omwenga ,2017).. The Current study will focus on the determinants of effective implementation of Public Health Construction Projects. Rebeccah, (2014) conducted a study on The Effect of Budgetary Control on Effectiveness of Non-Governmental Organizations in Kenya. Her research determined the effects of budgetary controls on performance of NGOs using correlations and regression methods, established the relationship and also concluded that there is a low positive relationship between budgetary controls and Performance. This means that budgetary controls might not be the only reason for high Performance; many other factors may affect the performance. Hence this study will focus on the Determinants of effective implementation of Public Health Construction projects (Kipruto, Omwenga & Iravo, , 2016).

2.5 Research Gaps

Kairu, (2014) conducted a study on Factors Affecting Effective Implementation of Constituency Development Fund Projects in Machakos Town Constituency, Machakos County in Kenya. This study presents a contextual gap since it focuses on Machakos County. There is also a conceptual gap since the study looked at the factors affecting effective implementation of constituency development fund projects whereas the current study will focus on the Determinants of Effective Implementation of Public Health Construction Projects in Murang'a County, Kenya. Mygon (2015) conducted a study on the Determinants of implementation of construction projects funded by constituency development funds: a case of public secondary schools kikuyu sub-county, Kiambu county Kenya. Gichuhi (2015) carried out on challenges of strategy implementation in Murang'a county government in Kenya. These studies did not focus on the Determinants of Effective Implementation of Public Health Construction Projects in Nyamira County, Kenya. As evidenced from the studies above, there exist research gaps and therefore this study is conducted so as to bridge the existing gap.

3. RESEARCH METHODOLOGY

3.1 Research Design

This study adopted a cross sectional research designed to depict the participants in an accurate way, cross sectional research design is all about describing people who take part in the study both qualitative and quantitative research approach (Orodho, 2004) The design was appropriate for this study since it allowed the researcher to describe record, analyze and record and report the conditions of the Public Health Construction projects as they were.

3.2 Target Population

The target population for the study was 46 Public health constructions projects in Nyamira County. The unit of analysis was the 46 Public Health Construction projects from the 46 Public Health construction projects the study targeted the project managers, assistant project managers and project supervisors from each project since they were actively involved in the implementation of the projects. Therefore, the target population was 138 (3*46). Hence the units of observation were the project managers, assistant project managers and project supervisors.

3.3 Sample Size and Sampling Technique

The study adopted a census survey design with the respect of the unit analysis which was the Public Health Construction Projects in Nyamira County. This therefore ruled out the application of a sampling technique. The study used census since the population of 46 public health construction projects was small and the study aimed at reaching all the project managers, assistant project managers and project supervisors of the Public Health Construction projects since there were the ones who were responsible for overseeing the implementation of the projects.

3.3.1 Sampling Framework

According to the Ministry of Health (2016) there are 46 public health construction projects within the 133 public health facilities in Nyamira County. From the targeted population of 46 public health construction projects the researcher targeted the project managers, assistant project managers and project supervisors of the public health construction projects. Hence the total number of respondents was 138.

3.4 Data Collection Instruments

The study relied on both primary and secondary data. Primary data was collected by use of semi- structured questionnaire. Questionnaires was used since according to Cooper and Schindler (2011), they are effective data collection instruments that allow respondents to give much of their opinions in regard to the research problem. Secondary data was collected through published scholarly articles, journals, newspapers, books and other relevant literature. The information collected were for the basis of the study to examine the Determinants of Effective Implementation of Public Health Construction Projects in Nyamira County, Kenya.

3.5 Pilot Testing

The purpose of the pilot test was to refine the questionnaire so that respondents would no problems in answering the questions and there was no problems in recording the data. In addition, it enabled obtain some assessment of the question's validity and the likely reliability of the data that was collected. Preliminary analysis using the pilot test data can be

undertaken to ensure that the data collected will enable the investigative questions to be answered (Saunders, Lewis and Thornhill 2012). A measure is considered reliable if a person's score on the same test given twice is similar. According to Mugenda (2012), a pretest sample ranges from 1% to 10% depending on the sample size hence 10% of the pretest sample was used. Therefore 14 questionnaires were piloted by issuing them to respondents who were not included in the final study sample.

3.6 Data Analysis and Presentation

Data analysis is a practice in which raw data is ordered and organized so that useful information can be extracted from it (Gall, Gall & Borg, 2007). Descriptive statistics such as, mean and frequencies were used to perform data analysis. After data, had been collected through questionnaires, it was prepared in readiness for analysis by editing, handling blank responses, coding, categorizing and keying into statistical package for social sciences (SPSS) computer software for analysis. The particular descriptive statistics were frequencies, mean scores and standard deviation. The particular inferential statistics were regression and correlation analysis.

The analysis of variance (ANOVA) were checked to reveal the overall model significance. In particular, the calculated f statistic was compared with the tabulated f statistic. A critical p value of 0.05 was used to determine whether the overall model was significant or not. A multiple regression model was used to show the relationship between the independent variables to the dependent variable as follows;

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

Where;

Y = Effective Implementation of Public Health Construction Projects

X₁ = Project Leadership

X₂ = Budget allocation

X₃ = Project Team competence

X₄ = Project Monitoring and evaluation

In the model, β_0 = the constant term while the coefficient $\beta_{ii} = 1 \dots 4$ were used to measure the sensitivity of the dependent variable (Y) to unit change in the predictor variables X₁, X₂, X₃ and X₄. The error (Σ) term captured the unexplained variations in the model. Data were presented using pie charts and tables which are reader friendly and are easy to interpret.

4. RESEARCH FINDINGS AND DISCUSSION

4.1 Response Rate

The number of questionnaires that were administered was 138. A total of 121 questionnaires were properly filled and returned as shown in Table 4.1. Table 4.1 presents an overall successful response rate of 87.68%.

Table 4.1 Response Rate

Response	Frequency	Percent
Returned	121	87.68%
Unreturned	17	12.32%
Total	138	100.00%

4.2 Pilot Test Results

4.2.1 Reliability Testing

This was done by subjecting the fourteen (14) questionnaires to respondents that were randomly selected. All the variables were reliable since their Cronbach alpha was above 0.7 which was in agreement with Kothari (2011) who indicated that coefficient of 0.7 is commonly accepted rule of thumb that indicates acceptable reliability and 0.8 or higher indicate good reliability. The Table 4.2 presents the reliability results.

Table 4.2: Reliability

Variable	No of Items	Respondents	α =Alpha	Comment
Project Leadership	4	14	0.741	Reliable
Budget Allocation	5	14	0.803	Reliable
Team Competency	5	14	0.747	Reliable
Monitoring and Evaluation	3	14	0.855	Reliable
Effective Implementation	9	10	0.716	Reliable

4.3 Study Variables

4.3.1 Project Leadership

The respondents were asked to indicate their level of agreement on various statements relating to the influence of leadership on effective implementation of public health construction projects using the scale of 1- 5 where Strongly agree -5, Agree -4, Don't know -3, Disagree -2, Strongly disagree -1. Descriptive statistics were obtained through running the statements of each objective using descriptive custom Table and presenting them in percentages. According to the findings majority of the respondents who represented 49.6% of the respondents agreed that it was required of a leader with professional qualities to lead in the implementation of construction projects, 29.8% strongly agreed, 9.9% were neutral, and 6.6% disagreed while only 4.1% strongly disagreed. In general, 71.0% agreed with the statement that for proper implementation of projects, all decisions were to be carried out by project leaders. Results also indicated that 66.9% % agreed that for successful implementation of projects there must be a use of excessive power, while 79.3% of the respondents agreed that there was need to use previous experience in decision making. The average mean of the responses was 3.83 which mean that majority of the respondents agreed with most of the statements on project leadership. The standard deviation was 1.12 imply that the results were however uniform as it measures the difference from the mean

The findings of the study are in agreement with those of Ogunlana, (2008) that conducted a study and found out that the leadership capabilities of project managers can greatly influence the project outcomes. If the project manager is experienced, knowledgeable and well conversant with the overall project situation, there is a high likelihood of successful completion of the project. The results were as shown in table 4.3.

Table 4.3 Project Leadership

Statements	Strongly disagree	Disagree	Don't know	Agree	Strongly agree	Mean	Std. Dev
It is required of a leader with professional qualities to lead in the implementation of construction projects	4.1%	6.6%	9.9%	49.6%	29.8%	3.94	1.02
For proper implementation of projects, all decisions should be carried out by project leaders.	4.1%	10.7%	14.0%	35.5%	35.5%	3.88	1.14
For successful implementation of projects there must be use of excessive power	10.7%	5.0%	17.4%	38.8%	28.1%	3.69	1.24
There is need to use Previous experience in decision making	6.6%	9.1%	5.0%	56.2%	23.1%	3.80	1.10
Average						3.83	1.12

4.3.2 Budget Allocation

The second objective of the study was to explore the extent to which budget allocation determine the effective implementation of Public Health Construction projects in Nyamira County Kenya.

The respondents were asked to indicate the extent delay had been experienced in the funds disbursed. According to results in Table 4.5, majority of the respondents in 2016 who represented 39.7% indicated that funds disbursement had delayed for 6 to 10 months, 31.4% indicated that it had delayed for over 10 months. In 2015, 40.5% indicated that funds disbursement had delayed for between 6 and 10 months, 39.7% indicated that it had delayed for over 10 years. 42.1% in 2014 indicated

that funds disbursement had delayed for between 6 and 10 months, 40.5% indicated that it had been delayed for over 10 months. 49.6% indicated a delay of 6-10 months while 29.8% indicated a delay of 29.7%. In 2012, 39% indicated funds disbursement delay of over 10 months as 31.4% indicated a delay of between 6 and 10 months in the same year.

The average mean of the responses was 3.94 showing a mean fund disbursement delay of between 6 and 10 months. The findings are in consistence with Ondari, (2013) who conducted a study and found out that government procedures for disbursement of funds are bureaucratic and thus most projects once approved by the parliament wait longer period before actual release of funds. The standard deviation was 1.11 implying that the results were however not uniform as it measures the difference from the mean. The analysis is on Table 4.4

Table 4.4 Funds Disbursement Delays

Year	None	1-3 Months	3-6 Months	6-10 Months	Over 10 Months	Mean	Std. Dev
2016	4.1%	15.7%	9.1%	39.7%	31.4%	3.79	1.17
2015	4.1%	4.1%	11.6%	40.5%	39.7%	4.07	1.03
2014	4.1%	5.0%	8.3%	42.1%	40.5%	4.10	1.03
2013	4.1%	6.6%	9.9%	49.6%	29.8%	3.94	1.02
2012	6.6%	17.4%	5.0%	31.4%	39.7%	3.80	1.31
Average						3.94	1.11

Financial Sources of Funds

4.3.3 Project Team Competency

The third objective of the study was to establish the extent to which project team competency determine the effective implementation of Public Health Construction projects in Nyamira County Kenya.

Project Team Experience

Respondents were asked to indicate the extent to which project team experience influenced the effective implementation of public health construction projects. According to the findings 42% of the respondents indicated that team experience influenced the effective implementation of public health construction projects by a large extent, 27% indicated influence of a very large extent, 18% indicated a moderate extent influence, 9% indicated small extent influence, while 4% indicated that team experience did not at all influenced the effective implementation of public health construction projects. These findings are in agreement with Gundecha, (2012) who states that project management experience, project value, project manager's experience, experience of contractor, project size, and competence of project team members and technical capability of project management are the most important success factors for construction projects.

Budget Allocated for Team Building Capacity

According to results in Table 4.7, majority of the respondents in 2016 who represented 49.6% indicated that the budgeted amount for team building was between ksh 2.5 and 5 million, 29.8% indicated a budget of over ksh 5 million. In 2015, 35% indicated a budget of ksh2.5-5 million and another ksh 35.5% indicated over ksh 5 million budget. 38.8% in 2014 indicated a budget of between ksh 2.5 and 5 million, 28.1% indicated a budget of over ksh 5 million. 56.2% indicated a budget between ksh 2.5and 5 million in 2013. In 2012, 36% indicated a budget of over ksh5 million while 32.2% indicated a budget of ksh 2.5 and 5 million. The average mean of the responses was 3.82 showing a mean team building budget of between ksh 2.5 and 5 million. The standard deviation was 1.15 implying that the results were however not uniform as it measures the difference from the mean.

Table 4.5 Team Building Capacity

Year	Less than ksh 500,000	ksh 500,000- 1000,000	Ksh 1 - 2.5 million	Ksh 2.5-5 million	Over ksh 5 Million	Mean	Std. Dev
2016	4.1%	6.6%	9.9%	49.6%	29.8%	3.94	1.02
2015	4.1%	10.7%	14.0%	35.5%	35.5%	3.88	1.14
2014	10.7%	5.0%	17.4%	38.8%	28.1%	3.69	1.24
2013	6.6%	9.1%	5.0%	56.2%	23.1%	3.80	1.10
2012	8.3%	10.7%	12.4%	32.2%	36.4%	3.78	1.28
Average						3.82	1.15

4.3.4 Monitoring and Evaluation

The fourth objective of the study was to establish the extent to which monitoring and evaluation determine the effective implementation of Public Health Construction projects in Nyamira County Kenya.

Budget Allocated for Monitoring and Evaluation

The respondents were requested to indicate the budget allocated for project monitoring and evaluation of project implementation activities for the years in table 4.9. According to the results in Table 4.9, respondents in 2016 who represented 39.7% indicated that the budgeted amount for monitoring and evaluation was between ksh 2.5 and 5 million, 43.8% indicated a budget of over ksh 5 million. In 2015, 34.7% indicated a budget of ksh2.5-5 million and another ksh 46.3% indicated over ksh 5 million budgets. 42.1% in 2014 indicated a budget of between ksh 2.5 and 5 million, 29.8% indicated a budget of over ksh 5 million. 49.6% indicated a budget between ksh 2.5 and 5 million in 2013. In 2012, 35.5% indicated a budget of over ksh5 million while another 35.5% indicated a budget of ksh 2.5 and 5 million.

The average mean of the responses was 3.98 showing a mean budget of monitoring and evaluation of between ksh 2.5 and 5 million. The standard deviation was 1.06 implying that the results were however not uniform as it measures the difference from the mean.

Table 4.6 Budget Allocated for Monitoring and Evaluation

Year	Less than ksh 500,000	ksh 500,000-1000,000	500,000-1 million	Ksh 1- 2.5 million	ksh2.5-5 million	Over ksh 5 Million	Mean	Std. Dev
2016	4.1%	4.1%	8.3%	39.7%	43.8%	4.15	1.02	
2015	4.1%	4.1%	10.7%	34.7%	46.3%	4.15	1.05	
2014	4.1%	9.1%	17.4%	42.1%	27.3%	3.79	1.07	
2013	4.1%	6.6%	9.9%	49.6%	29.8%	3.94	1.02	
2012	4.1%	10.7%	14.0%	35.5%	35.5%	3.88	1.14	
Average						3.98	1.06	

4.3.5 Effective Implementation of Public Health Construction Projects

Number of Projects Completed on Time from 2012-2016

The respondents were also asked to indicate the number of health construction projects that were carried out from year 2012 to 2016 and completed on time. According to results in Table 4.19, respondents in 2016 who represented 56.2% indicated that 3 projects had been carried out and completed on time, 23.1 indicated 4 projects had been completed on time. In 2015, 43.8% indicated over four projects had been completed on time while 39.7 indicated 3 projects had been completed on time. In 2014 59.7% indicated over four projects had been completed on time while 17.4% indicated that no project had been completed on time. 35.5% indicated over four projects had been completed on time while 33.1 indicated that three projects had been completed in 2013. In 2012, 43.8% indicated that over 4 projects had been completed on time while 39.7% indicated that three projects had been completed.

The average mean of the responses was 3.95 showing a mean completion of three projects. The standard deviation was 1.19 implying that the results were however not uniform as it measures the difference from the mean. The analysis is on Table 4.7

Table 4.7 Constructed and Completed Projects

Year	None	One	Two	Three	Four and Over	Mean	Std. Dev
2016	6.6%	9.1%	5.0%	56.2%	23.1%	3.80	1.10
2015	4.1%	4.1%	8.3%	39.7%	43.8%	4.15	1.02
2014	17.4%	4.1%	8.3%	11.6%	58.7%	3.90	1.55
2013	8.3%	11.6%	11.6%	33.1%	35.5%	3.76	1.28
2012	4.1%	4.1%	8.3%	39.7%	43.8%	4.15	1.02
Average						3.95	1.19

4.4 Correlation Analysis

Table 4.8: Correlation Analysis

		Project Implementation	Project Leadership	Budget Allocation	Team competency	M & E
Project Implementation	Pearson Correlation	1				
	Sig. (2-tailed)					
Project Leadership	Pearson Correlation	0.068**	1			
	Sig. (2-tailed)	0.004				
Budget Allocation	Pearson Correlation	.280**	0.017	1		
	Sig. (2-tailed)	0.002	0.504			
Team competency	Pearson Correlation	.746**	0.009	0.119	1	
	Sig. (2-tailed)	0.000	0.205	0.194		
M & E	Pearson Correlation	.911**	-.187*	0.012	.654**	1
	Sig. (2-tailed)	0.000	0.040	0.463	0.000	

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

4.5 Regression Analysis

A multiple regression model was fitted to determine whether independent variables notably, X1 is Project Monitoring and Evaluation, X2 is Budget Allocation, X3 is Project Team Competency, X4 is Project Leadership simultaneously affected the dependents variable Y which was Effective Implementation of Public Health Construction Projects. The results were presented in table 4.13.

Model Summary

Project leadership, budget allocation, project team competency and monitoring and evaluation were found to be satisfactory variables in the effective implementation of public health construction projects. This was supported by the coefficient of determination also known as the R-square of 0.933. This means that project leadership, budget allocation, project team competency and monitoring and evaluation explain 93.3% of the variations in the dependent variable which is the effective implementation of public health construction projects. These results further mean that the model applied to link the relationship of the variables was satisfactory.

Analysis of Variance (ANOVA)

The results indicate that the model was statistically significant. Further, the results imply that the independent variables, project leadership, budget allocation, project team competency and monitoring and evaluation were good predictor of effective implementation of public health construction projects. This was supported by an F statistic of 405.814 which was greater than f critical of 7.4 and the reported $p=0.000$ which was less than the conventional probability of 0.05 significance level.

Beta Coefficients

The results shows that project leadership had a positive and significant effect on effective implementation of public health construction projects ($r=0.061$, $p=0.003$). Budget allocation and had a positively and significantly effect on effective implementation of public health construction projects ($r=0.182$, $p=0.000$). Project team competence had a positively and significantly effect on effective implementation of public health construction projects ($r=0.179$, $p=0.000$). Project monitoring and evaluation had a positive and significant effect on effective implementation of public health construction projects ($r=0.537$, $p=0.000$).

The specific model was;

$$Y = 0.160 + 0.537 X_1 + 0.182 X_2 + 0.179 X_3 + 0.061 X_4$$

Where; Y is Effective Implementation of Public Health Construction Project

X1 is Project Monitoring and Evaluation.

X2 is Budget Allocation

X3 is Project Team Competency

X4 is Project Leadership

The equation above reveals that holding project leadership, budget allocation, project team competency and monitoring and evaluation, effective implementation of public health construction projects would be at 0.160

Table 4.9: Regression Model (Overall)

Model Summary

Indicator	Coefficient
R	0.966
R Square	0.933
Adjusted R Square	0.931
Standard Error	0.1067847

ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	18.510	4	4.627	405.814	0.000
Residual	1.323	116	.011		
Total	19.833	120			

Beta Coefficients

	B	Std. Error	Beta	t	Sig.
(Constant)	0.160	0.134		1.199	0.023
Project Leadership	0.061	0.020	0.074	2.993	0.003
Budget Allocation	0.182	0.018	0.245	10.118	0.000
Team Competency	0.179	0.030	0.197	6.063	0.000
M & E	0.537	0.022	0.793	24.097	0.000

5. SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of Major Findings

This section provides a summary of the findings from the analysis. This is done in line with the objectives of the study. These objectives were; to establish how project leadership determine the effective implementation of Public Health Construction Projects in Nyamira County, to explore the extent to which budget allocation determine the effective implementation of Public Health Construction projects in Nyamira County, to determine the extent to which Project Team Competency influences the effective implementation of Public Health Construction Projects in Nyamira County and to examine the influence of Monitoring and Evaluation on the effective implementation of Public Health Constructions projects in Nyamira.

5.1.1 Project Leadership

Majority of the respondents indicated that it is required of a leader with professional qualities to lead in the implementation of construction projects, there is need to use Previous experience in decision making, for proper implementation of projects, all decisions should be carried out by project leaders and that for effective implementation of projects there must be use of excessive power. Further, the study found out that that leadership is an essential requirement in implementation of effective public health construction projects.

5.1.2 Budget Allocation

The study established that mid and long term financial plans guided the effective implementation of public health construction projects. Majority of the respondents indicated that there was delay in fund disbursement and the main source of funds was the national government. From the findings it was established that budget allocation influenced the effective implementation of public health construction projects by over 80%.

5.1.3 Project Team competency

The study findings revealed that project team experience influences the effective implementation of public health construction projects to a great extent and funds were allocated for team building capacity activities. The results of the study shows that project team competency and effective implementation of public health construction projects had a positive and significant relationship. This finding implies that an improvement in project team competency lead to a better improvement in effective implementation of Public Health Construction projects.

5.1.4 Monitoring & Evaluation

The study sought to establish the extent to which monitoring and evaluation influences the effective implementation of Public Health Construction projects in Nyamira County Kenya. The study found out that monitoring and evaluation of project progress was done annually and project progress was the most assessed project aspect. Majority of the respondents stated that the monitoring tools used were performance indicators and logical framework. The study found out that Project Monitoring and Evaluation and effective implementation of public health construction projects had a positive and significant relationship. This implies that an improvement in project monitoring and evaluation leads to a better improvement in effective implementation of Public Health Construction projects.

5.2 Conclusion of the Study

The main purpose of this study was to examine the Determinants of effective implementation of Public Health Construction projects in Nyamira County, Kenya. Based on the findings above the study concluded that project leadership, budget allocation, team competence and project monitoring and evaluation influence effective implementation of Public Health Construction projects in Nyamira County.

The study established a positive correlation between project leadership and project implementation. The study concludes that project leadership is positively related to the effective implementation of Public Health Construction projects in Nyamira County. Leadership is therefore a needed necessity to ensure projects are effectively constructed.

The study established that there is a positive correlation between budget allocation and project implementation. It can be concluded that there is a positive relationship between budget allocations and the effective implementation of Public Health Construction projects in Nyamira County. The study concludes that budget allocation should be adequate to ensure effective project implementation. Budgetary control measures should be well set and also minimizing delays in budget funds disbursement is critical.

The study found out that there was a positive correlation between project team competence and project implementation. It can be concluded that there is a positive relationship between team project competence and the implementation of public health construction projects in Nyamira County. The management should ensure team building activities are productive and predetermined objectives are established and met.

The study established that there was a positive relationship between project monitoring and evaluation and the effective implementation of Public Health Construction projects in Nyamira County. There should be; clear goals, management support, control mechanism and communicating for proper Project monitoring and evaluation to function well. Monitoring and evaluation should be done on a regular basis than the reported annual case in the study. This will ensure variance are noted and reported early for corrections.

5.3 Recommendations of the Study

The study recommends that a competent project leader be given the responsibility to oversee the implementation of public health construction projects to ensure projects are effectively implemented. Since these health projects have an important role to play in development of a country, the best leadership standards should be put in place to ensure effective project implementation, only competent leaders can do this. The selection of project leaders should be done on merit to ensure only qualified project leaders are given the responsibility to oversee the implementation of projects.

The study noted delays in budgetary allocation disbursement and therefore recommends that for a smooth construction process to be carried out this challenge should be minimized at all cost. The study identified that the main source of funds was the national government hence the study recommends that other sources of funds be identified to avoid rely so much on the national government.

The study recommends that predesigned objectives are essential to ensure outcomes are met by the project team. Team building budget should be designed with necessary outcome. Project construction team should be highly competent to engage highly on reputable projects to bring about good project outcomes.

Lastly, this study recommends that best tools for monitoring projects be identified, the monitoring process should also be improved from the current annual case and more so the reports are prepared after every process. The reports should focus on the stage at which the predetermined outcome has been achieved.

5.4 Areas for Further Research

Further studies can be done in other counties for the purpose of making a comparison of the findings with those of the current study. Other variables apart from project leadership, budget allocation, and project team competency and monitoring and evaluation can also be studied since these variables only explained 93.3% of the changes in effective implementation of public health construction projects. This implies that remaining 6.7% of the changes in effective implementation of Public Health Construction projects can be explain by other variables not covered in this study. The study recommends that a study should be done on challenges facing implementation of public health construction projects in Kenya.

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