

# Determinants of Successful completion of Building Maintenance Projects in West lands Sub-County, Kenya

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**Abstract:** The Kenyan government has been providing free primary education since 2003. However, most of our primary schools were built up several decades ago, and the buildings exhibit numerous maintenance issues. The status of buildings in these institutions has been the subject of discussion by various stakeholders and the focus of various interventions, but about 14 years later the status seems not to have improved. This research project aimed at examining the determinants of successful completion of building maintenance projects: A case study of Westlands Sub-County. The research focused on Primary schools within Westlands Sub-County in Nairobi County. The target population was 20 Public Primary schools located within the sub-county. This comprised of 5 stakeholders per school thus head teacher, a member of the board of governors, a member of the parents' teacher association, pupils' representatives and the teacher in charge of maintenance in the school hence 100 respondents. Census survey was used since the population was not huge. The research was anchored on Project Management, Program and Control theories. Data were collected by use of semi-structured questionnaires. A pilot test was conducted to detect weakness in design and instrumentation and to provide proxy data for selection of a probability sample. The study generated qualitative and quantitative data due to the nature of the instrument. The researcher cleaned data after getting the questionnaires from the field. Data were merged and tabulated on tabulation sheets on SPSS version 23.0 (Statistical Package for Social Sciences) and Microsoft excel. Data were compared to establish any existing relationships or meaningful facts. Reporting of data was done through descriptive statistics including frequencies, means, standard deviation, and tables.

**Keywords:** Project, Maintenance, Project Planning.

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## 1. INTRODUCTION

Preventive maintenance refers to the systematic predetermined maintenance activities that are at or intended to reduce the probability of performance degradation of an item. It is any work that is carried out before failure has occurred to preserve the structure and related amenities at their present value. It is pre-active in the sense that these activities of maintenance are conducted before a defect occurs. Its cost is relatively lower than that of corrective maintenance or rehabilitation or renovation [10]. Corrective maintenance alludes to the activities that are carried out after a failure has occurred. The main objective is to restore an item to a state in which it can perform its required function effectively. It involves making repairs or fixing of completely broken down parts. This is a reactive process as it is executed following the occurrence of some defects. It is work necessary to bring a building to an acceptable standard often as recommended by a conservation plan [7].

Emergence maintenance is that which is necessary to immediately correct a defect to avoid serious consequences. It is referred to as day to day maintenance. It normally comes as a result of climatic, natural or man-made factors that are often unforeseen. Routine maintenance involves both corrective and preventive maintenance activities that are carried out more often in any one year. These activities can be undertaken on the daily, weekly or monthly basis. They include cleaning, polishing, oiling of tools and equipment, minor repairs and improvements [12]. The maintenance of the built environment

affects everyone continually. This is because we are ever in contact with our homes, offices, factories and other areas for aesthetic value, comfort and socio-economic welfare [8]. Socially, the condition of a building, its quality, and infrastructure reflects public pride or indifference. Dilapidated and unhealthy buildings in a decaying environment usually depreciate the quality of life and constitute to some extent an anti-social behavior. The conditions and quality of buildings are one of the most fundamental components of the quality of life. The vast majority of people spend most of their time in or next to a building of one kind or another, in a way making the built environment the 'natural' environment [13].

Educational institutions are of fundamental importance to the socio-economic development of a country. In Kenya, as in many other parts of the world, education is highly regarded among the citizens. With the great increase in population to about 40 million people and the execution of free primary school education, the demand for school education facilities has tremendously increased causing strain to the existing ones. These facilities therefore need well-thought management approaches. Maintenance is one of the core activities in facilities management. It is through proper maintenance standards that a building can achieve durability, the satisfaction of the occupants and finally minimize the costs on repair works [6].

Kenya did not have a single harmonized legislation that governs maintenance works in general until 2011 when the draft maintenance policy for the government of Kenya was formulated. The process of formulating the Building Maintenance Policy was inspired by the dilapidated state of the existing country's building stock and the new legislative regime particularly the Bill of Rights in the constitution of Kenya 2010. The policy was adopted on November 2015 with specific objectives being to establish legal and instructional framework for maintenance, to guide on efficient, effective, economic use of maintenance resources, to guide on establishment of integrated management of built environment, to guide on establishment of measurable and quantifiable maintenance standards, to enable compliance with constitutional, legal and policy requirements, to establish a maintenance information management framework and to create awareness on the importance of maintenance of buildings and related infrastructures [12].

## **2. EMPIRICAL REVIEW**

The required project management skills include communication and feedback systems, quality, safety, risk and conflict management system, supervisory skills, experience, coordination and leadership, organizational structures, control mechanisms of sub-contractors works and the overall management actions in planning, organizing, leading and controlling [4]. Lam also states that the management needs to be involved in the upfront planning efforts and effectiveness of communication, control system, management system and organizational culture. A study by [11] on Procurement: Past and Current Developments states that governments have organized procedures, resources, and systems to consistently employ and align all procurement strategies that are related to project objectives. Overall, enterprises employing these approaches in a consistent and integrated method outperformed peers in cost savings, expenditure under management, compliance, supplier integration and greater contribution to enterprise value.

In Procurement Planning and Accountability of Local Government Systems in Developing Countries, Evidence from Uganda', that procurement professionals can provide policy makers with valuable information in their planning. This encompasses includes pre-procurement cycle phases including needs assessments, procurement program authorization and appropriation on projects. This information is important in planning as a major source of feedback for procurement adjustment, improvement, and reform [11]. During project planning, sufficient attention for establishing goals and objectives lacks; yet these are vital elements of planning. A good project plan does not necessarily lead to a good project. However, a project plan built on a weak foundation can lead to a good idea resulting in a poor project [1]. Project planning involves the collection of baseline data, needs assessment, developing an action plan, implementation and evaluation. Target groups need to be well understood before goals, activities, and resources required are formulated.

To enhance the understanding of project management process, the following tools are applied: Project Management workbook and methodology and the Project Management Guide. A good project management methodology provides the project manager with very detailed instructions for the discipline of planning, organizing, controlling, reporting and managing project resources to ensure it is completed within projects goals and objectives. On the other hand, project management guide ensures the project and organization makes an informed contribution to the projects and can monitor implementation and outcomes. Stakeholders are uncertain about how the change process will progress and tend to pay little attention to the early and midterm changes that occur in the quest for longer-term goal. Anderson [1] postulates that clarity of the early steps needs to be undertaken towards the realization of the long-term outcome. The TOC process identifies the necessary and sufficient preconditions required to realize a certain long-term outcome. Backward mapping is applied to enable the planners to think from the long-term goals backward to the intermediate and later early term changes expected to cause the targeted change.

The common thread from the survey on why projects succeed includes, among others: clear goals, management support, control mechanism and communicating [9]. The proposed approach raises a major conflict issue with the role of the project manager as it is very hard for project managers to keep the pace of the project when kept under constant auditing.

A study on multi-project management found out how effective critical communications is to the success of strategic projects and, ultimately, organizational success. However, only one in four organizations can be described as highly-effective communicators as found out by the Pulse communications research. This research suggests that the majority of organizations have opportunities to identify problem areas and design a course to improve the effectiveness of their project communications. This research also quantifies just how much effective communications can lead to more successful projects, and just how much ineffective communications can cost an organization.

### 3. CONCEPTUAL FRAMEWORK

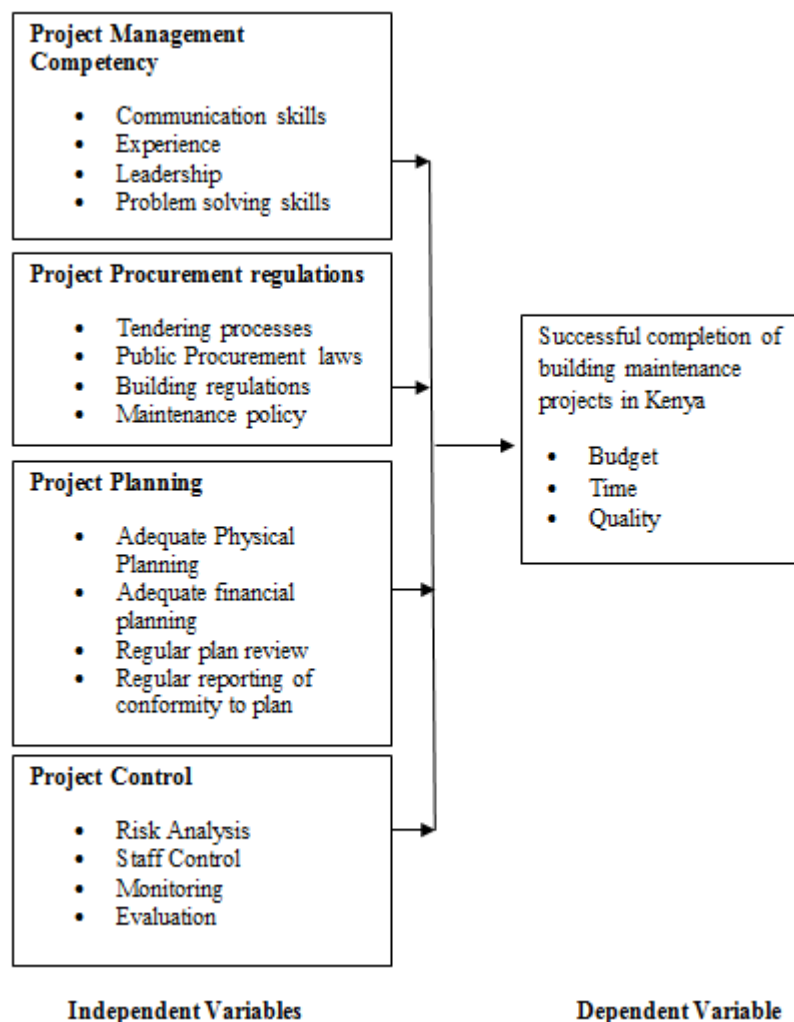


Figure 2.1: Conceptual Framework

### 4. SUMMARY AND CRITIQUE OF EXISTING LITERATURE

From the above studies, project implementation has been subjected to numerous investigations both from theoretical and empirical points of view. The reviewed literature so far indicates that there is a myriad of determinants of project implementation. It is the researcher's assumption that not all factors are important in all stages and that different factors play different roles at different stages of project implementation. The studies have however failed to isolate which determinants are critical at what stages of project implementation. Further, none of the studies have ranked the factors in their order of importance. There is no evidence that the most important determinants by mean ranking make a difference

in project implementation. Again, the literature has shown that some factors are interrelated, but no study has attempted to identify and quantify the interrelationships. These issues present a fertile avenue for future research as many project stakeholders continue to grapple with which areas to concentrate limited resources to improve the chance of delivering a successful project.

The view, however, cannot be valid for all types of projects such as in the telecommunication industry where a lot of projects involve technologies rather than heavy building and construction.

## **5. RESEARCH METHODOLOGY**

A descriptive survey aims at obtaining information from a representative selection of the population and from that sample the researcher can present the findings as being representative of the population as a whole. Against this background, the descriptive survey provides the current study with appropriate procedure for examining the determinants of successful completion of building maintenance projects in West Lands Sub-County. The population of this study comprised 20 out of the 28 public primary schools in Westlands Sub County. Each chosen school had five respondents including the head teacher, a member of the board of governors, a member of the parents' teacher association, pupils' representatives and the teacher in charge of maintenance in the school. The study used self-administered questionnaires and observation schedules. This study utilized both primary and secondary data. Questionnaires were used to collect primary data which was distributed to the staff. The researcher made personal-follow ups to ensure that the questionnaires are filled and collected. The researcher relied on the Likert-type scale and used Cronbach's Coefficient Alpha to evaluate internal consistency.

## **6. RESULTS AND DISCUSSION**

### **Response rate:**

The response rate regarding the study was measured at 69.3% whereby 52 respondents out of 75 turned up. The questions asked were answered correctly thus providing a four-item response rate for each variable.

### **Project Management Competency:**

From the results, the respondents agreed that good leadership and coordination skills by project leaders led to project management competence (mean=3.885). In addition, respondents agreed that good supervisory skills by project leaders led to project management competence (mean=4.192), among other factors that led to project management competence were: Good communication skills of the project leader which respondents were neutral (3.654), the presence of an experienced member to lead the team which was agreed on (3.692) and that the presence of well-qualified personnel with adequate academic and professional qualifications was agreed on (mean=4.19). This implies that project management competence is a determinant of successful completion of Building Maintenance projects. This finding concurs with [5] who asserted that project management competencies include: communication and feedback systems, quality, safety, risk and conflict management system, organizational structures, control mechanisms of sub-contractors works and the overall managerial actions in planning, organizing, leading and controlling. He also stated that the management needs to be involved in the upfront planning efforts and effectiveness of communication, control system, management system and organizational culture.

### **Project Procurement and regulations:**

Findings indicates that the respondents agreed that direct tendering is more efficient than open sourcing in completion of specialised works during building maintenance projects (mean=4.077), It is important to pre-qualify professionals who offer specialised services during building maintenance projects (mean=3.750) and that the national building maintenance policy directly influences maintenance of buildings in Kenya (mean=4.058). Also, respondents strongly agreed that it is important to align building maintenance projects with the existing legislation (mean=4.211). This implies that project procurement and regulation is a determinant of successful completion of Building Maintenance projects. This Furthermore, the Procurement Manager works closely with Project Manager. Furthermore, these findings concur with [5] who noted that tendering also enables organizations to be able to identify reliable suppliers who can meet the products or services required according to the specifications. This enables the organization to get all resources required in project implementation in less possible time, therefore, minimizing project delays.

### **Project Planning:**

Based on the study, majority of the respondents strongly agreed that it is critical to define roles and responsibilities of officers (mean= 4.289), A clear definition of what maintenance work needs to be done before starting on a project (mean=4.500), and that the project team should carry out a regular review of the building maintenance project (mean= 3.692) respectively. Also, respondents agreed that it is important to ensure sufficient fund for the project is determined in advance (mean= 4.077) as respondents strongly agreed that before commencement, there should be effective determination of the period for the project to be completed.

### **Project Control:**

From the study, majority of the respondents agreed that the presence of a dedicated staff control team is a project control measure (mean= 4.019), Setting of clear goals for the project teams is a project control measure (mean=4.192), and that evaluating valuation project risks to mitigate occurrence of risks (mean= 4.019) respectively. Also, respondents agreed that communicating the purpose of the building maintenance project clearly (mean= 3.692) as respondents agreed that Controlling project stakeholder involvement. This finding concurs with [2] who notes that controlling is not just simply setting a target and believing that the intended result will be achieved automatically. [2] Puts it that project control needs human talent, space for movement, alternative interpretations, and action of those who are subjected to controls rather than boundaries and control instruments.

## **7. CONCLUSION**

Project procurement regulations have to be followed to the later. The bidding organization demonstrates its ability in handling the assignments in the tender and their costing of each of them. The main criteria used in the selection of the winning bid involves identifying who among the bidders can supply the required products or services according to the specifications and at the lowest cost. However, it is not always that the least bidder gets the job, in some circumstances, other factors are considered such as reliability, and also previous assignments were done are used as an influence [3]. Project Planning is usually an on-going process during a project. Benchmarking is combined or aligned with risk analysis and other planning activities. It is considered that a carefully created plan is the foundation on which project success is built. Also, performances are reviewed periodically to optimize procedures at the execution of future projects so that the repeated mistakes can be reduced to a minimum level and project control can be more obtained in the future. Project objectives in project planning are first defined; then the strategies to achieve them are formulated and presented as project plans and these are used in evaluating the achievement of the objectives.

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