

## **The Influence of Project Management Skills on Implementation of Physical Projects in Secondary Schools**

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### **Abstract**

*The ever increasing enrolment in primary schools due to the free primary education coupled with the one hundred percent transition policy has led to pressure on school resources in secondary schools. This study aimed at establishing the influence of project management skills on Implementation of physical infrastructure in secondary schools: a case of West Pokot and TransNzoia Counties, Kenya. The study adopted the critical chain project management theory. This study employed a descriptive survey design. The design was suitable for this study on the grounds that the study sought to collect information from the respondent on their opinions. The target population comprised of the principals, board of management members, County and Sub-County Directors of Education. Questionnaires and interview schedules were used in data collection. The validity and reliability of the tools was done by consulting the experts. The quantitative data collected was coded to translate questions responses into specific categories and analyzed using the Statistical Package for Social Sciences (SPSS), analyzed, tabulated and presented by using descriptive statistics. Qualitative data gathered was organized thematically and analyzed alongside the corresponding data from the questionnaires. The findings indicated that school head were given training support by the Ministry of Education (MoE). The study recommends that there is need for more capacity building in the school management teams.*

**Key Terms:** *Project Management Skills, Implementation of Physical Projects, secondary schools*

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### **I. Introduction**

Globally, a number of studies have been accomplished that look into the completion rates of projects in various sectors, including Education. In Virginia USA, local school divisions as well as school boards are responsible for developing of the Educational and architectural program specifications and determining the number as well as types of classroom spaces needed for a school construction project (Virginia Department of Education, 2010).

In the USA, individual states enhance funding of school infrastructure in various ways. In Virginia State for instance, the law gives the local school divisions the responsibility for controlling, erecting, furnishing, equipping and maintaining necessary school buildings. These school divisions do not have taxing power or ability to issue debt, so it is the related government that must provide school construction financing. The options available are to use current local revenues to fund all or a portion of the projects or borrow funds, via a direct bank loan. The cost, funding availability and school consideration associated with most school construction major renovation projects will ultimately determine the preferred financial solution. Borrowing for construction purposes can be done through direct local government borrowing in which it borrows below market rates and is administered by the department of education (Michael, 2015).

In Africa, project failures generate a cycle of rising expectations and unfulfilled promises. A lot of time, effort and resources are invested to put more innovation into practice. This shows the need to relook at projects performance with a view of identifying the right success measures for appropriate application. Amponsah (2012), and Matta and Ashkenas (2003) noted that the problem to project failure lies with the traditional approach that shifts the project teams' focus away from the end result toward developing recommendations, new technologies, and partial solutions.

In Malawi, a significant number of the educational projects administered under the Education Sector Strategic Plan (ESSP) have been plagued by delays, and other project management and delivery problems. The mitigation measures put in place to prevent poor project performance do not seem to have the desired effect (Chirwa, Samwinga&Chakantu 2011). Faulty project management and execution are everywhere round the world; incomplete government buildings due to lack of funds, new schools without desks or teacher, hospitals and health centres without drugs, (Mulkeen, 2010).

The Kenya government infrastructural policy which is geared to achieve Universal Primary Education (UPE) has to have infrastructural developments to accommodate the increased enrolment in schools. The Kenya Education Sector Report, 2013/2014 to 2015/2016 period noted that, the sector priority areas of expenditure will include construction and improvement of infrastructure in learning institutions at all levels. This is an indication of how infrastructural projects are of importance to the Education sector in the country.

There is an observation by Kyambalesa (2010) that great pressure has been put on the existing school infrastructure due to the strategy initiated and introduced in 2003 regarding setting off any levies at primary level, making basic Education free in Kenya. The rapid enrolments in schools resulted to overcrowding in the available few resources in schools and poor conditions generally that are not learner-friendly in school environments.

## **THEORETICAL FRAMEWORK**

The study was based on the critical chain project management theory. The theory as proposed by Eliyahu M. Goldratt (1997) differs from other conventional methods derived from the critical path. These methods put emphasis on order and rigid scheduling of project tasks. Critical chain project management (CCPM) is a method of setting up projects that emphasizes on the resources essential in the execution of project tasks. It puts emphasis on the material and human resources needed to implement the projects. It applies the Theory of Constraints to the implementation of projects. The goal is to boost the completion rates of projects. In the management of projects, the critical chain refers to the order of progression of constraints that prevent the project from being completed in a shorter time (Stratton, 2009).

## **II. Literature Review**

Provision of relevant skills such as training in procurement would ensure adherence to procurement procedures (Wambui, 2013) hence a realization of a proper implementation of public procurement regulations. Lack of training can lead to malpractices in implementation of public procurement regulations in public secondary schools.

Polit& Beck, (2019) asserted that the managers of the projects needs to have a politically prepared plan strategy in order to conform and suit important sponsors, stakeholders and other donors to curb down any possible project derailment. They argued that in case of any challenges, project managers bear top responsibility of providing better solution and ensure effectiveness with the project team (Apolot, Alinaitwe&Tindiwensi, 2010).

The top management support is normally in the form of providing sufficient resources for the effective completion and success of the project, sharing responsibilities with project team, communicating with project team authorities and responsibilities and supporting the project team in times of crisis or at unexpected situations. Ashaye (2010) proposed that many project managers of successful projects stressed the importance of investigating the underlying processes, apart from proper and detailed planning and allocating appropriate human and financial resources. Githenya and Ngugi (2014) in their studies concluded that a good project implementation is ideal in any organisation. Project managers should be given the responsibility and task of driving success in the implementation process. The scope of the project should be defined and the necessary control measures be put in operation to ensure the set target is achieved.

Adek R.T, (2016) in her studies on determinants of successful project implementation of infrastructure projects in devolved units noted that, management support for any project implementation is the key to its success. The extend and the degree of managerial skills in project implementation in terms of resource allocation and utilization gives confidence or doubt to the society as this dictates the success or failure of the project (Lohr,2009).

Alga (2010) observed that project managers with strong managerial skills, leadership and passion influences success in the organization. The successful project manager should have the following skills and competences; flexibility and adaptability, preference for significant initiative and leadership confidence pursue, verbal thereby, forcefulness, effectiveness able to balance technical solutions with time, cost, and human factors poise, enthusiasm, imagination, well organized and disciplined and willing to devote most of his or her time.

The production of a project plan, or schedule, is a key part of the development of any project (Burke, 2011). The schedule sets out the key stages to be completed during the project, with their starting and finishing dates, and the resources that need to be allocated. Progress can be monitored against each stage and completion readily reported on.

According to Kerzner, (2011) to succeed in project implementation, managers needs to be trained in the various stages of project management such as planning, resource mobilizing, monitoring and control so as to be able to effectively manage the projects. Planning underpins the efforts of a management team that does not shy away from the challenges of change and proactively seeks to find better ways of doing things (International Project Management Association, 2016). Project managers should be equipped with relevant technical knowledge and skills to carry out their responsibilities with ease. This is very important in project management

fields (Murch, 2001). Nyaga, (2014) while concurring with Kerzner, observed that project monitoring and evaluation is a continuous process. At this stage, attention should be taken to ensure successful completion of the project timely as planned.

Managers need to support and engage in effective learning processes. The routine “act, find out what works, reflect and retain desirable behaviors”, needs to permeate all levels of organizations at both individual and group level. This does not mean learning for the sake of learning or permanently engaging in one experiment or the other. Follow the simple routine experiment, learn, reflect, do more of what works (Maylor, 2016). Experimentation, reflection and learning will assume greater importance as the future becomes more complex and unpredictable. In brief, the challenge is to strike the right balance between learning and control, change and stability, thought and action.

Chamoun, (2011) opines that in project management, managers impose control over possibility of risk occurrence and provide solutions given adequate capabilities of planning and the required resources. Poor project management skills may result in wastage of resources, time, and distortion in quality of the final product or even total project failure. Nyaga (2014) observed that the amount of time and effort devoted to project planning, management and implementation influences its failure or success. The more effort and time applied, the higher the probability that the project will meet the set target.

### **III. Methodology**

According to (Bryman and Bell, 2015) a research design is a strategy for data collection and analysis to generate answers to the research problem. It is the glue that binds the elements of research together. This study employed a descriptive survey design. The design was suitable for this study on the grounds that the study sought to collect information from the respondents on their opinions and beliefs. The target population was a cross section of education stakeholders within the learning institutions who assisted the researcher to understand the study problem. The study population comprised of 479 respondents drawn from the two counties. A sample is a small proportion of a population selected for observation and analysis (Best and Kahn, 2011). The sampling procedure is the process of selecting the sample or the subset from which the study was done (Kothari and Gaurav, 2014). The study adopted cluster sampling technique. The clusters in this study comprised of Principals, Board of Management, and Sub-County Directors of Education and County Directors of Education. The sample size arrived at was calculated using Taro Yamane’s formula (Yamane 1967). The sample size therefore was 218 respondents which was distributed as follows: the principals Sub County and County Directors of Education will be purposively selected, hence a total of 63, 7 and 2 were selected respectively. The remaining respondents from the total sample of 218 being 146 board of management members were shared between the seven Sub Counties in the two counties, the schools in were randomly. Data was collected using the questionnaires while the secondary was collected from the literature review sources. The questionnaires were self-administered by the researcher and her assistants upon getting university authority to collect data. After being granted permission by the authorities of various institutions, questionnaires were personally administered by the researcher and the assistants after arrangements with area sub chiefs. Quantitative data gathered from closed ended questions was post-coded, entered and analyzed using the Statistical Package for Social Sciences (SPSS version 22.0); tabulated and presented using descriptive statistics. To integrate qualitative data gathered from open ended questions, tallying of similar responses of each item was done. Results of data gathered from closed ended and open items was presented in frequency tables, percentages, means, tabulations and graphs and explanation of the findings made based on themes.

### **IV. Findings**

#### **Project management skills on implementation of infrastructure projects**

The first objective sought to establish the extent to which project management skills amongst the school principals influenced the implementation of infrastructure projects in the secondary schools in the two counties. Five key areas in project management skills were considered: ability of school heads to offer leadership, ability of school head to communicate with all stakeholders, ability of school heads to carry out project planning, ability of the school heads to control and appraise the project activities to ensure they are compatible with the project plans and ability of school heads to carry out project monitoring and evaluation. The respondents were required to use a five point Likert scale where; 1 = strongly agree, 2 = agree, 3 = uncertain, 4 = disagree, and 5 = strongly disagree, in answering the questions. The responses were recorded and analyzed in table 6.

**Project management skills on implementation of infrastructure projects**

Statement	Trans Nzoia county				
	1(%)	2(%)	3(%)	4(%)	5(%)
Principals' ability to offer leadership	29.70	33.66	24.75	6.94	4.95
Principals' ability to communicate with stakeholders.	21.78	44.56	15.84	9.90	7.92
Principals' ability to carry out project planning.	33.66	38.61	18.81	8.91	0.99
Principals' ability to control and appraise the project activities	27.73	36.63	2.97	22.77	10.89
Principals' ability to carry out project monitoring and evaluation	21.78	35.64	13.86	19.80	8.92
Statement	West Pokot County				
Principals' ability to offer leadership.	24.94	31.40	8.00	28.70	6.96
Principals' ability to communicate with stakeholders	12.84	46.40	8.93	10.05	21.78
Principals' ability to carry out project planning.	32.56	9.91	1.09	38.60	18.82
Principals' ability to control and appraise the project activities	36.63	27.73	1.90	21.77	12.96
Principals' ability to carry out project monitoring and evaluation	34.70	24.88	9.92	20.64	14.81

Table 6 indicated that majority of the respondents in Trans Nzoia county 33.66% agreed that Principals' had the ability to offer leadership, 29.70% strongly agreed to the same. However, 6.94% and 4.596% respectively, disagreed and strongly disagreed to the fact that principals had the ability to provide leadership in schools in trans Nzoia county. Comparatively, 31.40% of the respondents in West Pokot County agreed to the same while 24.94% strongly agreeing to the same. 28.70% and 6.965 respectively disagreed and strongly disagreed respectively to the idea of principals providing leadership in infrastructural development in their schools. Cumulatively and comparatively, majority of the respondents in both counties were in agreement to principals providing leadership in schools.

On the principals' ability to communicate with stakeholders, majority of respondents in Trans Nzoia County, 44.56% agreed to principals being good communicators, 21.78% strongly agreeing to the same. On the other hand, 9.90% and 7.92% of the respondents disagreed and strongly disagreed to principals communicating effectively on physical developments in their schools. Comparatively, 46.40% and 12.84% agreed and strongly agreed respectively to the same while 21.78% and 10.05% strongly disagreed and disagreed respectively to principals communicating well with stakeholders. Comparatively, the study showed that majority of the principals in both Counties communicated well with stakeholders on matters physical development.

When asked to indicate the principals' ability to carry out project planning, majority of the respondents in Trans Nzoia County 38.61% and 33.66% respectively agreed and strongly agreed to principals having the ability to plan for projects while 8.91% and 0.99% respectively disagreed and strongly disagreed to the same. Comparatively, in west Pokot County, 38.60% and 18.82% respectively disagreed and strongly agreed respectively to the principal's ability to plan for projects while 32.56% and 9.91% strongly agreed and agreed respectively to the same. This was an indication that, whereas principals in trans Nzoia county were good planners for projects, principals in West Pokot County were not good as such to plan for projects in their respective schools.

The question wanted to find out the principals' ability to control and appraise the project activities in the two counties. Majority of the respondent's in Trans Nzoia County, 36.63% and 27.73% respectively, strongly agreed and agreed to the question while 22.77% and 10.89% disagreed and strongly disagreed to the same. Majority of the respondents in West Pokot County were more in agreement to the Trans Nzoia county counterparts by majority of the respondents, 36.63% strongly agreed and 27.73% agreed respectively while 21.77% disagreed and 12.96% strongly disagreed respectively to the same. This was manifestation that majority of the principals in both counties were good evaluators of projects in their respective schools.

The last question in objective one sought to find out the principals' ability to carry out project monitoring and evaluation in the two counties. Majority of the respondents in Trans Nzoia county 35.64% and 21.78% agreed and strongly agreed respectively while 19.80% and 8.92% disagreed and strongly disagreed to the same. On the hand, majority of the respondents on West Pokot county 34.70% and 24.88% agreed and strongly agreed, respectively while 20.64% and 14.81% disagreed and strongly disagreed respectively to the same. Going by the majority opinion in the two counties, it was observed that many principals were able to carry out project monitoring and evaluation in the two counties.

The respondents agreed that all the five areas in project management skills of the school heads were a major influence to the successful implementation of school infrastructure projects. The respondents rated ability of school head to offer leadership at 63.36%. The respondents felt that the school heads needed to be visionary and possess leadership skills in order to improve the schools' infrastructure. The respondents also agreed that the ability of school head to communicate with all stakeholders influenced implementation of school infrastructure projects, since the school head needed to communicate and mobilize various stakeholders and bring them in to support the school infrastructure development. The school heads needed to write project

proposals and make timely reports on the projects to the stakeholders. Ability of school heads to carry out project planning was rated. The school heads needed to prioritize and plan for the scarce resources at their disposal in order to improve the schools' infrastructure in the sub county. The respondents agreed with majority that the ability of the school heads to control and appraise the project activities to ensure they are compatible with the project plans influenced how they successfully implemented infrastructure projects in their schools. The school head acting as the project managers needed to control and appraise the projects they were implementing to ensure their successful completion. The most desirable character that the school heads as an effective project manager should possess is the drive to complete the complex tasks of keeping the project on schedule, within the cost and make project reports that are accurate and timely, making sure that the resources, equipment and labour are available when needed. The ability of school heads to carry out project monitoring and evaluation was rated at an agreement level. The school head needed to carry out monitoring and evaluation of the projects to ensure that the projects was going on as scheduled and that all the resources were being utilized as per the project plans. The ability of the school heads to delegate project monitoring and evaluation tasks to the teachers and other stakeholders was also paramount. The twenty first century school head therefore must be trained and equipped with Project Management skills.

The study is in tandem with findings by ALGA (2010) who empirically proved that strong and committed leadership at the top management level is essential to the success of project implementation. The successful project manager should have the following skills and competences, flexibility and adaptability, preference for significant initiative and leadership confidence pursue, verbal thereby, forcefulness, effectiveness able to balance technical solutions with time, cost, and human factors poise, enthusiasm, imagination, well organized and disciplined and willing devote most of his or her time. This study was in concurrence with studies by Nyaga, (2014) who argue that for any project to run optimally, project management skills are a key requirement. They argue that the amount of time and effort dedicated to planning as an element of project management influences the success or failure of a project. The more effort and time input in a project, the higher the probability that the project will achieve its set objectives. Further, the studies agree to findings by Maylor (2016) who argue that managers need to support and also engage in effective learning processes. He argues that continuous learning does not necessarily mean, learning for the sake of learning, but, following the simple routine experiment, learn, reflect, do more of what works. The study further agrees to studies by Kerzner, (2011) and the (International Project Management Association (2016) who argue that to succeed in project implementation planning needs to be trained in the various facets of project management such as planning resourcing, monitoring and control so as to be able to effectively manage the projects. Planning underpins the efforts of a management team that does not shy away from the challenges of change and proactively seeks to find better ways of doing things. The study agrees with Burke (2011) findings which showed that management ought to develop a project plan, or schedule, which is a key component in any project execution. The schedule sets out the key stages to be completed during the project, with their starting and finishing dates, and the resources that need to be allocated. Progress can be monitored against each stage and completion readily reported on.

## **V. Conclusions**

From the study findings, the study concludes that project management skills influence project implementation and that the ministry of education plays a role in training school heads with capacity in project management skills.

## **VI. Recommendations**

From the study findings there is need for more management to be given more training on project management skills to enable them understand and perfect the project implementation circle which will result into better implementation of projects. The study further recommends that the school heads and the management team should be given more training on leadership and communication. This will ensure that all the stakeholders get information accurately hence, avoiding politicking and rumor mongering which derail projects. The study recommends that the school management teams are given continuous capacity in project planning and implementation. The school management should be encouraged to evaluate, and monitor projects in secondary schools.

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