

Extent to Which Project Planning Affects Successful Completion of Capital Projects in Kakamega County, Kenya

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Abstract: This study looked at the extent to which project planning affects successful completion of capital projects in Kakamega County. A conceptual framework guided the study to show the interactions of the study variables. The study was guided by Ex-post Facto research design. The study targeted six Sub-County administrators, five project managers (engineers), six social services staff and four works officers who were directly involved in devolved funding. The research instruments were the questionnaires and interview schedules. The validity of the research instruments was done through presenting the instruments to the supervisors and the research experts in the School of Human Resource Development. The researcher used a Cronbach's Alpha method to obtain an alpha of 0.807 which was acceptable implying that the instruments were reliable. The researcher then analysed the data using descriptive and inferential statistical tools like Pearson Correlation Coefficient and regression analysis. The study findings were: the overall results between project planning and completion of capital projects, illustrate a strong positive association. Results indicate that 65.7 % of the implementation of capital projects can be attributed to project planning. This also meant that 34.3% of the capital projects in Kakamega County were not completed (stalled projects). The study recommended adequate project planning, monitoring and control should be enhanced in organisations during project management. Moreover, Project Management Offices should be established across all the government institutions with aim of managing, monitoring and controlling the projects embarked by their institution. This will enhance efficient and effective completion of capital projects.

Keywords: Project Planning, Successful Completion and Capital Projects

INTRODUCTION

Many definitions had been given to project by different authors, due to the fact that project is a multidisciplinary word that has different meaning from different perspective and orientations. Engineers, Architects, Managers and so on, have their definitions coined out from their experiences as far as their professions are concerned. Project according to Pinto [1] is a temporary activity or endeavour undertaken purposely to create a unique output (product or service) within budget, time and standards. Turner and Muller[2] in their own words defined project as an organization of human materials and financial resources in a novel way, to undertake a unique scope of work, of given specification, within constraints of cost and time, defined by quantitative and qualitative objectives so as to achieve a beneficial change.

Success is an interesting word and a word that is so general and wide in nature that it is difficult to define and obtain mutual agreement when asked from different individual. Judgev and Muller [3] in their article mentioned that in order to define what success means in the project context is like gaining consensus from a group of people on the definition of "good art." Project success is a topic that is frequently discussed

and yet rarely agreed upon[4].Based on a current study conducted by Crawford, Pollack and England[5] to uncover the journal emphases over the last 10 years in the field of project management, it is found that the study of project evaluation and improvement has gained increase significance. This implies that more studies have been directed to the area of project management and project success. Generally, the views on project success have evolved over the years from simple definitions that were limited to the implementation phase of the project life cycle to definitions that reflect an appreciation of success over the entire project and product life cycle[3].

There is a tendency for information technology (IT) infrastructure projects to shortchange the planning process, with an emphasis on jumping right in and beginning the work. This is a mistake. The time spent properly planning the project will result in reduced cost and duration and increased quality over the life of the project. The project definition is the primary deliverable from the planning process and describes all aspects of the project at a high level. Once approved by the customer and relevant stakeholders, it becomes the basis for the work to be performed [6].

In Kakamega County, the implementation and completion of capital projects using project planning is still not well established. The county has witnessed quite a number of capital projects like hospitals, bridges, road network and constructions of classrooms not implemented and completed at the stipulated time[7]. For example, studies have recognized social and political systems, cultural blocks and lack of financial support as barriers to successful project planning and execution in Nigerian public sector [8]. Therefore this paper aims at establishing the extent to which project planning affects successful completion of capital projects in Kakamega County.

Capital projects like water, health, construction of bridges and education projects have stalled and many of these projects were completed late or were incomplete and the studies on the use of project management practices is still not well established. For example, Kshs 3,193,778.00 of taxpayers' money was wasted on badly built and incomplete projects that were not in use representing 27% of the total Local Authority Transfer Fund (LATF) funds awarded in the financial year 2007-2008 in Butere- Mumias County Council. Kshs. 17,463,665.00 of taxpayer's money was wasted, due to badly built, complete and incomplete projects in Busia Municipal representing 84% of the total LATF funds awarded in financial year 2006-2007. Kshs. 11,466,000.00 of taxpayers' money was wasted due to badly implemented projects representing 30% of the total LATF funds allocated to the monitored projects in financial year 2009-2010 in Bungoma County Council and Kshs. 1,850,000.00 of taxpayers' money has been wasted on abandoned projects representing 5% of the total LATF funds allocated to the monitored projects in financial year 2009-2010 were on abandoned projects.

Kshs. 14,536,000.00 of taxpayers' money has been wasted on badly implemented projects in Butere Constituency representing 10% of the total Constituency Development Fund (CDF) funds allocated to the monitored projects in financial year 2009-2010 while Kshs.1, 005,578.00 of taxpayers' money is unaccounted for representing 0.7% of the total CDF funds allocated to the monitored projects in financial year 2009-2010. Kshs. 15,684,000.00 of taxpayers' money was wasted on badly implemented projects in Ikolomani Constituency representing 13% of the total CDF funds allocated to the monitored projects in financial year 2010/11 while Kshs. 7,052,598 of taxpayers' money had been wasted on abandoned projects representing 6% of the total CDF funds allocated to the monitored projects in financial year 2010-2011. Only Kshs. 4,666,000.00 of taxpayers' money is unaccounted for representing 4%. Kshs. 47,245,836.00 of taxpayers' money was wasted on badly implemented projects in Khwisero Constituency representing 65% of the total CDF funds allocated to

the monitored projects in financial year 2010-2011 and Kshs. 3,370,000.00 of taxpayers' money was wasted on abandoned projects representing 5%. Kshs. 8,330,014.00 of taxpayers' money is unaccounted for representing 11% of the total CDF funds allocated to the monitored projects in financial year 2010/11.

Kshs. 50,873,331 of taxpayers' money was wasted on badly implemented projects in Malava Constituency representing 44% of the total CDF funds allocated to the monitored projects in FY 2009/10 and Kshs. 236,089 of taxpayers' money was wasted on abandoned projects Kshs. 663,290.00 of taxpayers' money is unaccounted for representing 0.6% of the total CDF funds allocated to the monitored projects in financial year 2009-2010. Kshs. 6,815,000.00 of taxpayers' money was wasted on badly implemented projects in Shinyalu Constituency representing 13% of the total CDF funds allocated to the monitored projects in FY 2009-2010 and Kshs. 600,000.00 of taxpayers' money is unaccounted for representing 1%. Previous research focused on the project management tools and techniques[9]; project management practice by the public sector in a developing country[10]; project management lifecycle [11] and none of these studies dealt with project management practices on the successful completion of capital projects in Kakamega County. This was the gap which this study sought to fill.

MATERIALS AND METHODS

This study design adopted an Ex-post Facto research design because it facilitates collection of data from a pre-determined population. This study was carried out in Kakamega County. Kakamega County is a County in the former Western Province of Kenya. It has a total population of 1,660,651; 398,709 Households and covers an area of 3,244.9 km². The Population density is 515 per km² and unfortunately 57% of the population lives below the poverty line. Some of the strengths of Kakamega County include: natural resources as gold, arable land, and forests; tourist attractions as kakamega forest, caves, crying stone of Ilesi; main economic activities include large-scale sugarcane farming, mixed farming, commercial businesses and 'Boda-Boda' transport business (see Appendix I). The study targeted six Sub-County administrators, five project managers (engineers), six social services staff and four works officers who were directly involved in devolved funding [7].

Stratified sampling technique was used to categorise respondents into Sub-County administrators, project managers (engineers), social services staff and works officers. The study involved all the six Sub-County administrators, five project managers (engineers), six social services staff and four works officers who were selected by purposive sampling

because this technique allows the researcher to use cases that have required information with respect to the objectives of the study, that was, the key informants[12]. Therefore, a census study was used in this study. Questionnaire for Sub-County administrators, project managers (engineers); social services staff and work officers and interview schedules for Sub-County Administrators were used. The researcher personally filled the observation checklist. For the validation of the instrument, the researcher consulted supervisors and experts in the School of Human Resource Development were used to evaluate the applicability and appropriateness of the content, clarity and adequacy of the research instrument from a research perspective. Cronbach Alpha method was used and yielded an alpha of 0.807. This was to determine how items correlated among themselves. The value of alpha = 0.82 was above the threshold value which was acceptable in this study at 0.7[12-13]. The results of the

plot study revealed that the research instruments were reliable and possessed both content and face validity. Data was analyzed with the help of the Statistical Package for Social Sciences (SPSS) computer program. The percentages were used to express the degree of response to a given opinion. Cross tabulation was used to understand two different survey items and how they relate. Inferential statistics like regression analysis and Pearson Correlation Coefficient were used to establish the association between study variables at 95% confidence level, p-value \pm 0.05.

RESULTS AND DISCUSSIONS

Background Information

Background information from the respondents on their level of education, age bracket, gender, department, position and duration in their current employment were discussed in Table-1.

Table 1: Age Distribution of Respondents

Age distribution in years	Frequency	Percent	Valid Percent	Cumulative Percent
25-34 years	10	66.7	66.7	66.7
35-47 years	4	26.7	26.7	93.3
Above 48 years	1	6.7	6.7	100.0
Total	15	100.0	100.0	

The results indicate that 10(66.7%) of the respondents were in the age bracket of 25-34 years, 4(26.7%) in the age bracket of 35-47 years while 1(6.7%) respondent above 48 years. The results generally indicate that the most respondents were

between 25 to 34 years. Furthermore, results indicated that there was a significant ($P < 0.05$) difference in the variation among age groups since the expected uniform distribution across age groups was not achieved.

Table -2: Gender of Respondents

Gender	Frequency	Percent
Male	12	80.0
Female	3	20.0
Total	15	100.0

The study sought to establish the gender distribution among the key informants in Kakamega County. The respondents were asked to indicate their gender and the results are recorded in Table-2. From the results, 12(80%) of respondents were male while 3(20%) were female respondents. The results illustrated that there was a significant ($p < 0.05$) variation in the gender distribution among the respondents since the expected 50% was not attained in each gender. There were more males who participated in the study than females. Moreover, the study findings indicated that

there were more male respondents in the key positions in Kakamega County than females.

The study sought to find out the experience of the respondents aimed at determining the number of working years they have been exposed to in handling capital projects in the County. The results are shown in Figure-1. Similarly, there was a significant ($p < 0.05$) variation in the working experience of the respondents, because the expected 25% expected in the working experience of the respondents was not realised.

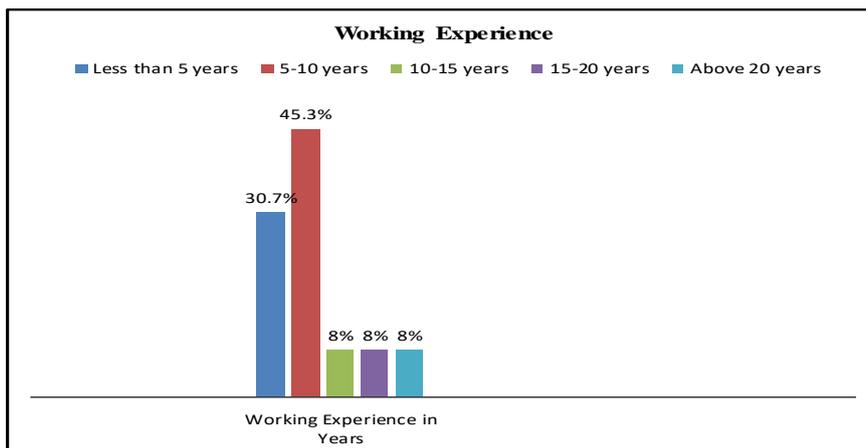


Fig-1: Working Experience

The results pointed out that 45.3% of the respondents had been working in the Kakamega County (formerly Municipal Council) for 5-10 years, 30.7% have been working for less than 5 years, 8% of respondents for a period of 10-15 years, 15-20 years and above 20 years respectively. This translates to the fact that the respondents were well grounded in the matters relating to how project planning, monitoring and control affect completion of capital projects in Kakamega County. This also implies that these respondents have acquired varied experience as far as what affects completion of capital projects in the

County was concerned and could give accurate information on the questions raised.

The study sought to find out formal educational levels of respondents in Kakamega County. The results show that there was a significant variation ($p < 0.05$) among the educational levels of respondents. Results illustrate that 10(66.7%) of respondents had bachelor's degree, 3(20%) of respondents had masters' degrees and 2(13.3%) had diploma certificates. Results are shown in Table-3.

Table-3: Education Level

	Frequency	Percent	Valid Percent	Cumulative Percent
Masters	3	20.0	20.0	20.0
Bachelor's degree	10	66.7	66.7	86.7
Diploma	2	13.3	13.3	100.0
Total	15	100.0	100.0	

It can therefore be inferred that most of the respondents had bachelor degree and this indicated that majority of the respondents in the Kakamega County had attained at least minimum academic and professional qualifications. However, it should be noted

that none of these respondents had attained PhD education level which is a challenge to the County government as it has fewer human resource with masters' degrees.

Table -4: Evidence of Projects not Completed in Time

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	14	93.3	93.3	93.3
No	1	6.7	6.7	100.0
Total	15	100.0	100.0	

The respondents were asked to indicate whether capital projects like hospitals, bridges, road network and constructions of classrooms that were not completed in time. The responses were as indicated in Table-4. From the findings, 93.3% of the respondents

had indicated that there were projects that were not completed on time while only 6.7% had indicated otherwise. Since majority of the respondents were of the opinion that there were capital projects which were not completed within the required time. Furthermore,

this confirms the problem statement that indeed projects are never completed on time.

Extent to which Project Planning affects Completion of Capital Projects

This was the objective of this study whose purpose was to find out to the extent to which project

planning affects completion of capital projects in Kakamega County. The respondents' responses were based on a five point Likert Scale and scored as: strongly agreed, SA (5), Agree, A (4), Undecided, U (3), Disagree, D (2), strongly disagree, SD (1). The results are illustrated in Table-5.

Table -5 Extent to which Project Planning affects Completion of Capital Projects

Descriptive Statistics		
	Mean	Standard. Deviation
Planning increases the organization's ability to adapt to future eventualities	4.8000	0.41404
Planning gives direction to the activities to be performed	4.4667	0.51640
planning supplies orderliness and avoids unnecessary pressures	4.7333	0.45774
Planning ensures adequacy of resource for use during capital projects	4.6000	0.50709
Planning reduces mistakes and oversight	4.3333	0.48795
Planning makes control easier	4.4667	0.51640
Planning ensures completion of capital projects on time	4.3467	0.43467
Planning sets up a clear working process	4.6667	0.61721
Estimating and planning ability is weakest point of project managers	1.9333	0.59362
Project managers lack knowledge and skills in planning, thus affecting project completion	4.0667	0.25820
Planning reduces cost of project variances compared with budgeted	4.1453	0.53794
Managers' experience level in planning of the projects is good	4.2431	0.43229
The managers' theoretical and methodological knowledge in capital projects is inadequate	1.8000	0.41404
The managers' practical experiences with implementation of capital projects is good	4.6132	0.50418
In the planning stage, delegates of the company functional departments (users, project sponsors, management and community) participate actively	4.7123	0.43474

Mean = 4.1285 and SD= 0.6848

From the results in Table-5 questions on the extent to which project planning affects completion of capital projects were scored as follows: planning increases the organization's ability to adapt to future eventualities had a mean of 4.8 and standard deviation of 0.41404; planning gives direction to the activities to be performed had a mean of 4.4667 and standard deviation of 0.50640; planning supplies orderliness and avoids unnecessary pressures had a mean of 4.7333 and standard deviation of 0.45774; planning ensures adequacy of resource for use during capital projects had a mean of 4.6 and standard deviation of 0.50709; planning reduces mistakes and oversight had a mean of 4.333 and standard deviation of 0.48795; planning makes control easier acquired a mean of 4.4667 and standard deviation of 0.51640; planning ensures completion of capital projects on time had a mean of 4.3467 and standard deviation of 0.43467; planning sets up a clear working process had a mean of 4.667 and standard deviation of 0.61721; estimating and planning ability is weakest point of project managers which was in the negative had a mean of 1.933 and standard deviation of 0.59362; project managers lack knowledge

and skills in planning, thus affecting project completion had a mean of 4.0667 and standard deviation of 0.25820; planning reduces cost of project variances compared with budgeted had a mean of 4.1453 and standard deviation of 0.53794; managers' experience level in planning of the projects is good had a mean of 4.2431 and standard deviation of 0.43229; the managers' theoretical and methodological knowledge in capital projects is inadequate which was also in the negative, had a mean of 1.8 and standard deviation of 0.41404; the managers' practical experiences with implementation of capital projects is good had a mean of 4.6132 with standard deviation of 0.50418 while the last question on in the planning stage, delegates of the company functional departments (users, project sponsors, management and community) participate actively had a mean of 4.7123 and standard deviation of 0.43474.

In the test criteria based on the five point Likert Scale, 1= strongly disagree, 2= disagree, 3= not sure, 4= agree while 5= strongly agree. All the respondents agreed that project planning affects the implementation of capital

projects except the two variables: estimating and planning ability is weakest point of project managers (1.933 and standard deviation of 0.59362) and the managers' theoretical and methodological knowledge in capital projects is inadequate (mean of 1.8 and standard deviation of 0.41404). If we could rate the extent to the effect on Likert scale such that 1= least extent, 2= extent, 3= moderate extent and 4= greater extent, then

since the mean of all the response was ranging between 4.2 to 4.9 except the two variables mentioned above, then the study could conclude that project planning affects the implementation of capital markets to a greater extent. Given that the standard deviations were all less than 0.9, it further confirms that project planning is an integral part in completion of capital projects.

Table -6: Extent to which Project Planning affects Completion of Capital Projects

Variables	Correlation coefficient (r)	Regression coefficient, b	Std. Error (E)	t-value	P-value at Sig. at 2-tailed
Planning increases the organization's ability to adapt to future eventualities	0.301	0.16	0.014	1.143	<0.05
Planning gives direction to the activities to be performed	0.548	1.066	0.795	1.341	<0.05
planning supplies orderliness and avoids unnecessary pressures	0.856	1.393	0.548	2.543	<0.05
Planning ensures adequacy of resource for use during capital projects	0.676	1.546	0.030	1.086	<0.05
Planning reduces mistakes and oversight	0.772	1.570	0.476	3.296	<0.05
Planning reduces cost of project variances compared with budgeted	0.880	1.104	0.261	2.653	
Overall Association	0.672	1.140	0.354	2.010	p<0.05
R = 0.958; R² = 0.919					

Regression analysis was conducted to establish the extent to which project planning affects completion of capital projects in Kakamega County (see Table-6). The overall results between project planning and completion of capital projects, illustrate a strong positive association ($r = 0.672$, $b = 1.140$, $t = 2.010$, $p < 0.05$). Results also indicate that 91.9% ($R^2 = 0.919$) of capital projects is attributed to project planning. These findings indicated the important role of project planning in implementation of capital projects in Kakaamega County. These study findings confirm the previous studies' findings that there is a significant association between project planning and project success. For example, Aladwani[14] found the positive significant relationship between project planning and project success. Procaccino et al.[15] also indicates the significant role of customer involvement and support from top management to the success of a project. The more customer involvement and top management support, the higher chance of project success. The result indicate that the methods employed to manage the project and the people involved in the cross-functional process of project development tend to be more important than the tools and technology.

The qualitative data obtained from the observation checklist and document analysis revealed the following:

1. Planning tools like Gantt Charts and Network analysis were used to some extent to schedule

- work programs in successfully implemented projects
2. Work Break Down Structures were used in the identification and allocation of specific activities to project team members in some of the successfully implemented projects.
3. Organizational Breakdown Structures were not used to assign specific responsibilities in the abandoned/badly built capital projects.
4. Project Definition Document was drawn and made available to all team members in some of the successfully implemented projects.
5. Gantt charts/ Work Breakdown Structures/ Organizational Breakdown Structures were displayed in some of the successfully implemented projects for easy access by the project team members.
6. Communication channels and feedback plans were drawn and availed to all the project team members in most of the successfully completed projects.

Challenges of Project Management in Kakamega County

This section sought to assess the challenges associated with implementation of capital projects in Kakamega County. These challenges were arranged in order from the most challenging issues to the least ones (see Table-7). The respondents indicated that there was a challenge of assigning each cost to the definite project. Lack of professional training (33.1%) was

ranked the first challenge to effective implementation and completion of capital projects in Kakamega County. Most of the respondents were of the opinion that cost apportionment is the key challenge in the

implementation of costs (24.5%). This was noted as a challenge because it makes it very difficult for those who are carrying out project evaluation to identify out which areas needed more finances than others.

Table -7: Challenges of Project Management in Kakamega County

Challenges of Project Management of Capital Projects	Percentage	Rank
Lack of professional training	33.1	1
Assigning each cost to the definite project	24.5	2
Lack of education and constant coaching of teams involved in capital project implementation	19.3	3
Bribery and corruption	9.6	4
Lack of leadership commitment	5.5	5
Lack of project management knowledge/lack of expertise	4.3	6
Rigid organizational structure	3.7	7
Total	100.0	

The third challenge that was noted was lack of education and constant coaching of teams involved in capital project implementation (19.3%). Constant training and coaching is very important in the implementation of projects and therefore management in Kakamega County need to streamline the issue of coaching and training people involved. Bribery and corruption (9.6%) was ranked 4th challenge affecting implementation and completion of capital projects. The respondents were of the views that the finances that were meant for investment in the capital projects were misused and this caused the delay in the completion of the capital projects. Lack of leadership commitment (5.5%) was also suggested to be the challenges towards completion of capital projects in Kakamega County. Leadership of the team plays a significant role in the level of realize achievement. It is the most important input factors to successful fulfillment of team processes and team effectiveness [16-17]. Several researches indicate team leadership is positively related to team's member satisfaction, significant such boundaries include those between project manager and team members [16, 18, 20]. The knowledge and skills implicate team's task and they advocate their team's members to work. Yoon [19] suggests that leadership of project manager can be assessed by the extent of the following: (1) team leader's professional knowledge, (2) participation inducement in decision making stages, (3) innovation, and (4) trust. Leadership can facilitate the free flow of information and ideas [16].

Lack of project management knowledge/lack of expertise (4.3%) was the 6th ranked challenge affecting effective implementation of the capital projects while rigid organizational structure (3.7%) was ranked as the 7th challenge since it affects the efficiency and effectiveness of the decision making process. Therefore, from these study findings, it was evident that the following were the challenges that affected effective

implementation of capital projects in Kakamega County: lack of professional training, assigning each cost to the definite project, lack of education and constant coaching of teams involved in capital project implementation, bribery and corruption, lack of leadership commitment, lack of project management knowledge/lack of expertise and rigid organizational structure.

CONCLUSIONS

The following conclusions were derived from the study findings based on the four objectives of the study:

- The overall results between project planning and completion of capital projects, illustrate a strong positive association. Results also indicate that 91.9% ($R^2 = 0.919$) of capital projects was attributed to project planning. This implied that an increase in the efficiency and effectiveness of project planning can consequently lead to increase in completion of capital projects in Kakamega County.
- The following were the challenges that affected effective implementation of capital projects in Kakamega County: lack of professional training, assigning each cost to the definite project, lack of education and constant coaching of teams involved in capital project implementation, bribery and corruption, lack of leadership commitment, lack of project management knowledge/lack of expertise and rigid organizational structure.

Recommendations

The following recommendations were made based on the findings and the conclusions of the study: adequate project planning should be exercised by project managers and employees in charge of projects; this would increase the knowledge of employees about mistakes and oversights during planning. Planning enables the identification of future problems and makes

it possible to provide for such contingencies. Moreover, the human resources who effectively participate in the planning should help in crystallizing objectives. Project monitoring is important because it will be helpful for planner to know that the project is going on a right path according to our goals or not , if there is any problem then it could be sort out on the spot and the time and resources could be saved. Project control should be stepped during the project management because it is essentially important in tracking and managing the core project management elements of scope, quality, time and cost and if properly managed could enhance completion of projects. Project Management Offices should be established across all the government institutions with aim of managing, monitoring and controlling the projects embarked by their institution. This will enhance efficient and effective completion of capital projects.

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APPENDIX 1: MAP OF KAKAMEGA COUNTY SHOWING ADMINISTRATIVE DISTRICTS

