Influence of Procurement Specification Development on Performance of The Energy Sector in Kenya

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Abstract

Purpose: The purpose of the study was to assess the influence of procurement specifications development on performance of the energy sector in Kenya with an aim of making recommendations on proper use of procurement specification development practices among energy sector in Kenya.

Methodology: This research study adopted a descriptive research design approach. The researcher preferred this method because it allows an in-depth study of the subject. The target population was procurement officers in the energy sector in Kenya. The study employed stratified random sampling technique in coming up with a sample size of 154 respondents from a total of 253 target population in the energy sector in Kenya. The study combined two methods in its data collection that is, questionnaires and key informant interviews. After data collection, quantitative data was coded using Statistical Package for Social Science (SPSS) version 20. Data was analyzed through descriptive statistical methods such as means, standard deviation, frequencies and percentage. Inferential analyses were used in relation to correlation analysis and regression analysis to test the relationship between the four explanatory variables and the explained variable.

Results and conclusion: The independent variables reported R value of 0.796 indicating that there was perfect relationship between dependent variable and independent variables. R-Square is a commonly used statistic to evaluate model fit. R^2 is 1 minus the ratio of residual variability. The coefficient of determination also called the R^2 was 0.634. R^2 value of 0.634 means that 63.4% of the corresponding variation in performance of the energy sector in procurement specification development in the energy sector in Kenya can be explained or predicted by (planning and analysis, stakeholder involvement, vetting and approvals, revision and storage) which indicated that the model fitted the study data. The Findings of the Study Indicated That Planning and Analysis, Stakeholder Involvement, Vetting and Approvals and Revision and Storage Have A Positive Relationship with Performance of The Energy Sector.

Unique contribution to theory, policy and practice: The study recommended that companies in the energy sector should embrace drivers of procurement specification development and further

researches should to be carried out in other institutions to find out if the same results can be obtained.

Keywords: *Procurement Specification Development, Stakeholder Involvement, Vetting and Approvals and Revision and Storage*

1.1 INTRODUCTION

Procurement specification development in the stakeholder sector has consistently been poor hindering the realization of sustainable economic growth and development since the country attained her independence. Among the noted factors that contribute to poorly met procurement performance targets included; inadequate supplier relationship strategies, excessive regulations and controls, frequent political interference, poor management, outright mismanagement of resources and lack of a guiding vision (Dean & Kiu, 2012).

According to Lazear (2010) procurement specification development refers to a process in which an explicit set of requirements to be satisfied by a material, product, or service is given by a buyer to the supplier(s). This is also a fair process for suppliers to ensure they are quoting on a like-for-like basis. When developing specifications, it is important to distinguish between product requirements and product preferences and build in tolerances for suppliers to adhere to and not to restrict supply and build cost into a product (Ngugi & Mugo, 2012).

Lack of clear focus as to what is expected from contractors and poor or no methods of measuring performance has been the greatest challenge (Mohan, 2010). Many private entities decided to manage stakeholder sector through procurement specification development to address the situation. According to Lazear (2010) procurement specification development refers to a process in which an explicit set of requirements to be satisfied by a material, product, or service is given by a buyer to the supplier(s). This is also a fair process for suppliers to ensure they are quoting on a like-for-like basis.

When developing specifications, it is important to distinguish between product requirements and product preferences and build in tolerances for suppliers to adhere to and not to restrict supply and build cost into a product (Ngugi & Mugo, 2012). Procurement specification development originated in France. It was later developed with great deal of elaboration in Pakistan and Korea and thereafter introduced to India. It has been adopted in developing countries in Africa, including Nigeria, Gambia, Ghana to mention just a few (Ngyao & Yip, 2009).

1.2 Problem Statement

At least 30 out of the 52 countries in sub-Saharan Africa are currently facing a debilitating power crisis (IMF, 2018). The crisis is fueled in part by growing demand for power, with electricity consumption expected to grow at a yearly rate of 2.6% (IEA, 2016). At the same time, rates of urbanization have been increasing at 3.5% a year and industrial and manufacturing sectors expanding, thus adding to the growing demand for power (UNEP, 2017). Players in the industry are poorly performing and among many other reasons, lack of embracing procurement specification development is a major contributor. At present, however, not enough electricity is

generated to keep up with growing demand since 2000's generation capacity has increased by an annual average of 2.9% (Regional Economic Outlook, 2015).

Transmission systems lack adequate backup lines and are not able to function fully due to lack of maintenance because the procurers did not embrace procurement specification development adequately. Because of the deficiency in capacity, many countries have resorted to load shedding, or power rationing, in order to cope. Energy sources such as river basins are under-utilized, with only 20% of the total potential of hydropower plants under use (UN, 2015). Illegal connections are rampant, resulting in huge systems losses and hampering the transmission of electricity. And only 12% of rural households have access to electricity (Africa Infrastructure Country Diagnostic, 2019).

But power sector spending is 6.35% of overall GDP in sub-Saharan Africa (World Bank, 2016). Investments from all multilateral sources to energy in Africa have amounted to 9.7% of total multilateral finance. Utilities are badly managed and, in many cases, still vertically integrated. Regulations are often weak and regulatory bodies are rarely independent or effective with minimal or no procurement specification development. With power outages occurring on average 56 days a year, the impact on quality of life and economic activity is substantial (ICA, 2019). For businesses in the informal sector, power cuts lead to losses of 6% of sales revenues (Regional Economic Outlook, 2016).

Numerous studies to date have demonstrated that problems of procurement specification development are caused by the interaction of multiple factors during the life cycle of the projects, including cost, quality, schedule, management ability and so forth, rather than a single factor. The critical failure factors of procurement specification development pointed out by Koppenjan (2016); Algarni *et al.*, (2015) are the lack of interaction or insufficiency of the stakeholder sector, such as ineffective policy and strategy, non-professional project origination and identification, all these can lead to problems in procurement specification development (Sanghi *et al.,* 2017). This has left an evident knowledge and geographical gap, which the study intends to bridge. It is against this back drop that this study aimed at examining the influence of procurement specification development on performance of the energy sector in Kenya.

1.3 Objectives of the Study

i.   To establish the influence of planning and analysis on performance of the energy sector in Kenya.

ii. To find out how stakeholder involvement influences performance of the energy sector in Kenya.

iii. To assess the influence of vetting and approvals on performance of the energy sector in Kenya.

iv. To determine the influence of revision and storage on performance of the energy sector in Kenya.

2.0 LITERATURE REVIEW

2.1 Goal Setting Theory

Planning and analysis are best explained by the Goal Theory which states that users are motivated by clear goals and appropriate feedback (Aitken, Childerhouse & Towill, 2018). That working towards a goal provides a major source of motivation. Challenging and specific goals accompanied by feedback lead to higher levels of performance in terms of delivery of requirements. The prime axiom of this theory is that specific difficult goals lead to higher performance than when procurement officers strive to simply do their best (Artley & Stroh, 2019).

Such goals positively affect performance of an individual and direct people's efforts and energies in a particular direction. That there was a relationship between how difficult and specific a goal was and people's performance of a task. Difficult and specific delivery goals lead to better task performance than vague and easy goals. In their research, Belz and Wuensche (2018) found out that for goals to be motivational, they should have the following characteristics: They must be specific in terms of refining requirements.

General goals which lack specifity tend not to be motivational; that goals must be challenging to be motivational. They should not be easy that they require little effort to achieve and they should not be so difficult that they are impossible to achieve; that goals must be accompanied by feedback so that it is possible to know how well one is doing and how close is to the goal accomplishment; and that procurement officers and users must accept the goals and be committed to them (Cheung, Wang & Lo, 2014).

Definition of requirements is premised on the tenets of goal theory in that the targets are specific based on the organization's strategic plans. They are also measurable, attainable, realistic and time bound (SMART) in nature thus offering clarity to the vendors. The targets are challenging in that they are incremental in nature hence difficulty and complexity of achieving them is raised every cycle of the delivery leading to increased performance (Sylvia, 2018). The procurement officers are regularly provided with feedback on their performance.

2.2 PROCUREMENT SPECIFICATION DEVELOPMENT

2.2.1 Planning and Analysis

A typical description of the project manager goal is 'to bring a project to completion on time, within the budget cost, and to meet the planned performance or end-product goals. This commonly held view of the project manager task is based on the assumption that the performance or end product goals are always clear and well defined in advance. All the project manager has to do is to prepare a solid project plan and follow this plan all the way to success (Akech, 2010).

Although there are some that claim that too much planning can curtail the creativity of the project team, there is no argument that at least a minimum level of planning is required. In fact, although planning does not guarantee project success, lack of planning will probably guarantee failure. However, there are many cases where projects are executed as planned, on time, on budget and achieve the planned performance goals, but turn out to be complete failures because they failed to

produce actual benefits to the customer or adequate revenue and profit for the per-forming organization (Balogun, 2008).

2.2.2 Stakeholder Involvement

Stakeholder involvement refers to a range of activities that solicit interested parties input on decision making among our leaders (indirect involvement) and on decision making among administrators (direct involvement). Direct involvement can include a range of in-person events such as hearings and panels or juries and meetings (Levine, Fung & Gastil, 2015). Direct involvement can also include a range of virtual events, such as web-based forums where members can express their views and rank service delivery options (Brabham, 2010).

2.2.3 Vetting and Approvals

A specification must be clear and accurately define the expectation of the buyer. Ambiguity in the specification may result in inappropriate or incomplete responses from potential suppliers. A poor description of requirements may mean that the product or service is not delivered as required. In order to ensure a clear and concise specification, it may be necessary to: consult with the end users of the proposed good or service to be purchased, and ensure that their requirements are incorporated into the specification research the market to determine available solutions, likely costings and time scales (Bolumole, 2011).

2.2.4 Revision and Storage

Records are evidence of an organization or individual carrying out their day to day activities. Understanding what happened in the past and why is critical to the continued day to day activities of an organization or individual. It is also the basis on which legal systems are built. For all these reasons, preserving the ability to access records is critical to organizations and individuals (Panayidis & Meko, 2013).

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2.2 Conceptual Framework

Independent Variables   **Dependent Variable**

Planning and Analysis
- Definition of Requirements
- Break Down the Requirements
- Refine the Requirements

Stakeholder Involvement
- End User Involvement
- Expertise Consultancy
- Procurement Department

Vetting and Approvals
- Readability and Clarity
- Compliance
- Logic and Simplicity

Revision and Storage
- Frequent Reviews
- Monitoring and Evaluation
- Records Management

Performance of the Energy Sector
- Cost Reduction
- Quality Improvement
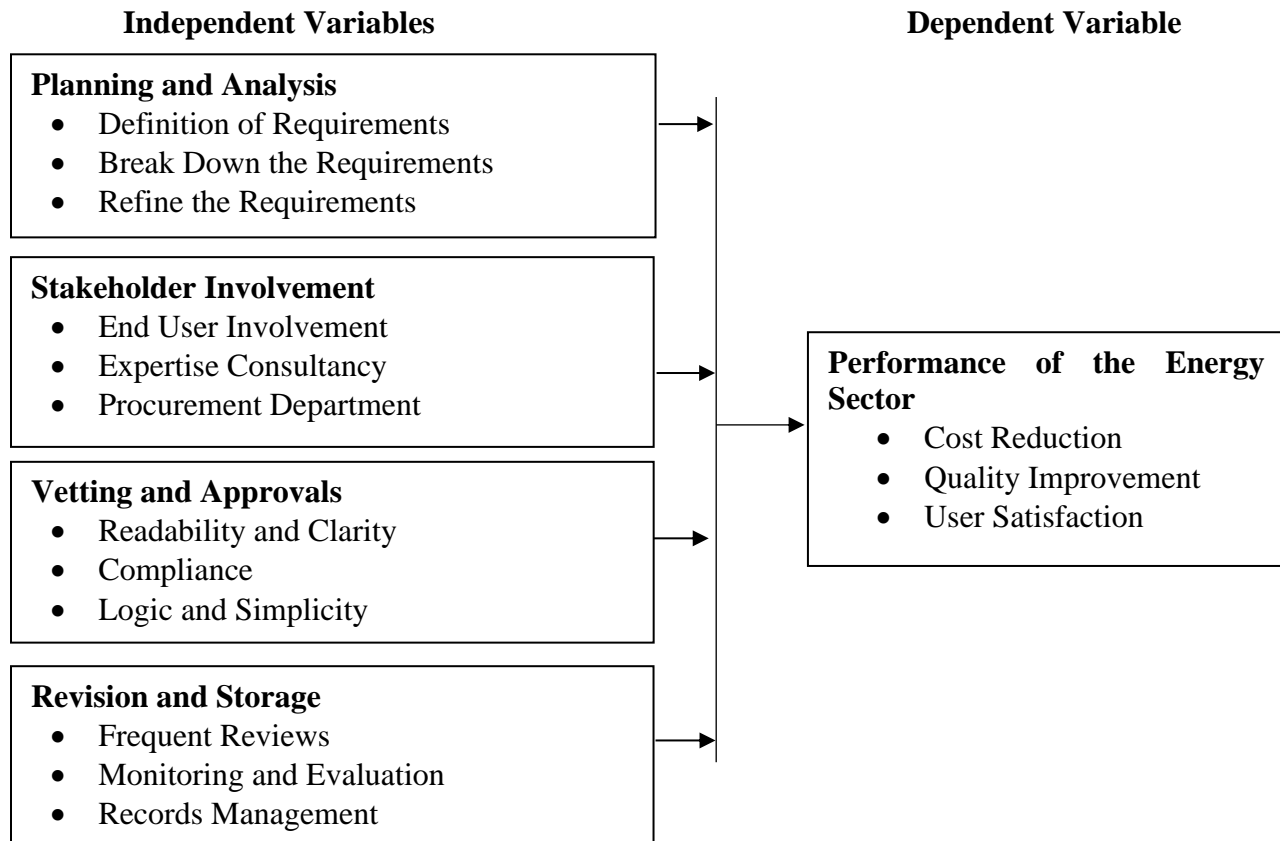- User Satisfaction

Figure 1: Conceptual framework

3.0 METHODOLOGY

This research study adopted a descriptive research design approach. The researcher preferred this method because it allows an in-depth study of the subject. The target population was procurement officers in the energy sector in Kenya. The study employed stratified random sampling technique in coming up with a sample size of 154 respondents from a total of 253 target population in the energy sector in Kenya. The study combined two methods in its data collection that is, questionnaires and key informant interviews. After data collection, quantitative data was coded using Statistical Package for Social Science (SPSS) version 20. Data was analyzed through descriptive statistical methods such as means, standard deviation, frequencies and percentage. Inferential analysis was used in relation to correlation analysis and regression analysis to test the relationship between the four explanatory variables and the explained variable.

4. 0 RESULTS FINDINGS

4.1 Introduction

4.2 Response Rate

A sample of 154 respondents were approached using questionnaires that allowed the researcher to drop the questionnaire to the respondents and then collect them at a later date when they had filled the questionnaires. A total of 154 questionnares were distributed to procurement staff. Out of the population covered, 133 were responsive respresenting a response rate of 87%.This was above the 50% which is considered adequate in descriptive statistics according to (Mugenda & Mugenda, 2014).

Table 1: Response Rate of Respondents

Response	Frequency	Percentage
Actual Response	133	87%
Non-Response	21	13%
Total	154	100%

4.3 Pilot Study

The cronbach's alpha was computed in terms of the average inter-correlations among the items measuring the concepts. The rule of thumb for cronbach's alpha is that the closer the alpha is to 1 the higher the reliability (Serekan, 2016). A value of at least 0.7 is recommended. Cronbach's alpha is the most commonly used coefficient of internal consistency and stability. Consistency indicated how well the items measuring the concepts hang together as a set. Cronbach's alpha was used to measure realibilty. This was done on the four objectives of the study. The higher the coefficient, the more reliable is the test.

Table 2 Reliability Results

Variable	No. of Items	Respondents	α=Alpha	Comment
Planning and Analysis	9	15	0.893	Reliable
Stakeholder Involvement	9	15	0.987	Reliable
Vetting and Approvals	9	15	0.974	Reliable
Revision and Storage	9	15	0.976	Reliable

4.4 Demographic Information

4.4.1 Distribution of Respondents by Gender

The study determined the gender distribution of the respondents. The results summarized in the table below. The result in figure 1 revealed that majority of the respondent (57%) indicated that they were male, while only (43%) of the respondent indicated that they were female. The statistics may raise the issue of gender equity in procurement specification development on performance of the energy sectorin Kenya, but that is outside the scope of this study. A study on Australian

organizations found that women and men do not differ in their ability to perform tasks, but rather bring a different perspective to procurement specification development (Maguire & Malinovitch, 2015).
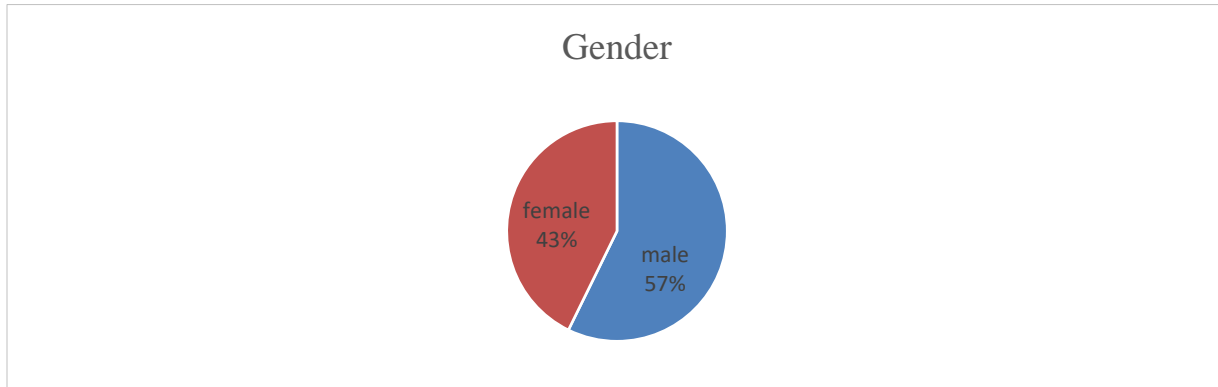
Gender

female
43%

male
57%

Figure 2: Distribution of Respondents by Gender

4.4.2 Distribution of Respondents by Age

The study also determined the age of the respondents. The results are submitted in figure 2 where the majority 46% were 31-40years. Respondents aged between 41-50 years were 23%. Respondents aged between 18-30 years accounted for 21%. Respondents above 50 years accounted years accounted for 10%. Again, this shows that those interviewed are adults capable of making independent judgments and the results of a research process involving them is deemed to be valid. The findings are in agreement with those of Saunders (2012) who established that there are two natural age peaks of the late 20's to early 40's which correlated to employee performance in the energy sector.
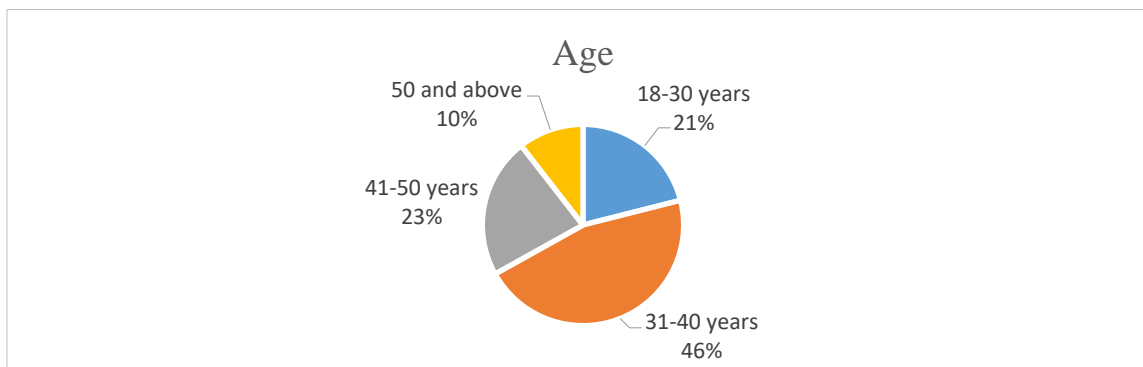
Age

50 and above
10%

18-30 years
21%

41-50 years
23%

31-40 years
46%

Figure 3: Distribution of Respondents by Age

4.4.3 Distribution of Respondents by Level of Education

The respondents were asked to state their highest level of education and the results were as captured in figure 3. The result in figure 3 revealed that majority of the respondent (42%) indicated that their academic qualification was up to diploma level. The result further revealed that (32%)

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of the respondent indicated that their academic qualification was up to degree level. The result also revealed that (22%) of the respondents had certificate level. The result also showed that only (4%) of the respondent had masters' level. These findings concur those of Montanheiro (2018) who established that majority of who run the energy sector are highly educated and that there is evidence linking education and energy sector .
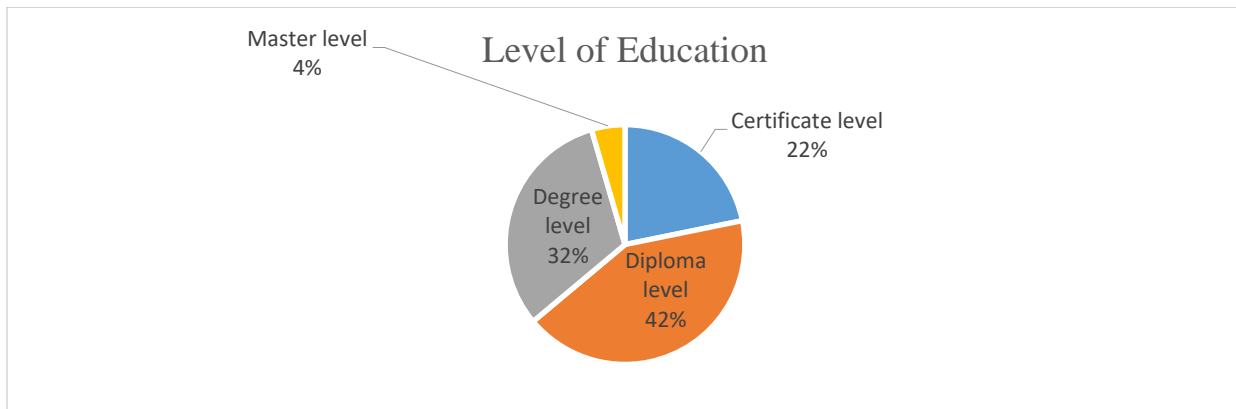

Figure 4: Distribution of Respondents by Level of Education

4.4.4 Distribution of Respondents by Length of Service

The study determined the number of years the respondents had worked in the energy sector in Kenya. The respondents were asked to indicate their work duration. The result revealed that majority of the respondents (41%) indicated that their work duration was 5-8 years. The result also showed that (22%) of the respondent indicated that their work duration was 9 years and above. The result further revealed that (19%) of the respondent indicated that their work duration was 3-5 years while (18%) of the respondent indicated their work duration to be 0-2 years. The findings of the study are in tandem with literature review by Patron (2012) who indicated that a duration and experience of employee helps him or her to have better knowledge and skills which contribute to energy sector performance.
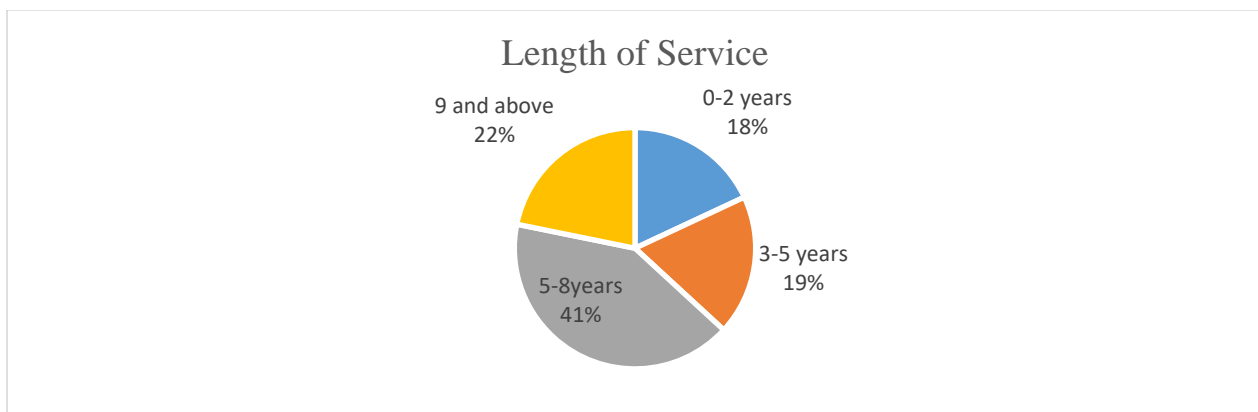

Figure 5: Distribution of Respondents by Length of Service

4.5 Descriptive Statistics

4.5.1 Planning and Analysis

The first objective of the study was to examine the influence of planning and analysis on performance in the energy sector in Kenya. The respondents were asked to indicate to what extent did planning and analysis influence performance of the energy sector in Kenya. Results indicated that majority of the respondents 46% agreed that it was effective, 41% said that it was very effective, 8% said it was ineffective, somehow effective was at 5%.
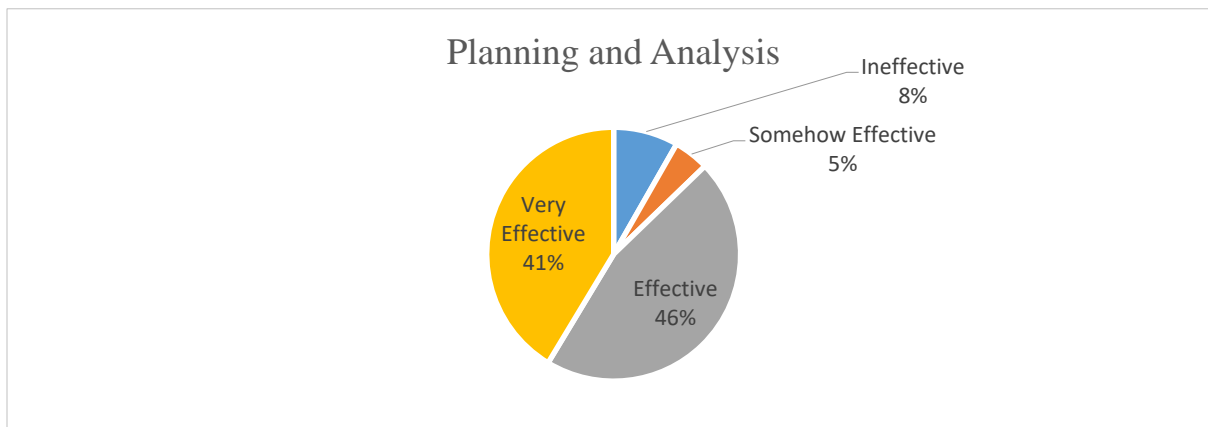

Figure: 6: Planning and Analysis

The respondents were also asked to comment on statements regarding planning and analysis influence on performance of the energy sector in Kenya. The responses were rated on a likert scale and the results presented in Table 3 below. It was rated on a 5 point Likert scale ranging from; 1 = strongly disagree to 5 = strongly agree. The scores of ' strongly disagree' and 'disagree' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'neutral' has been taken to represent a statement agreed upon, equivalent to a mean score of 2.6 to 3.4. The score of 'agree' and 'strongly agree' have been taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.

The respondents were asked to indicate the descriptive for planning and analysis. The result in table 4.3 revealed that majority of the respondent with a mean of (3.86) agreed with the statement that Definition of requirements play a significant influence in cost reduction. The measure of dispersion around the mean of the statements was 0.928 indicating the responses were varied. The result revealed that majority of the respondent as indicated by a mean of (3.85) agreed with the statement that Breakdown of the requirements plays a significant influence in cost reduction. The standard deviation for the statement was 0.883 showing a variation. The result revealed that majority of the respondent (3.83) agreed with the statement that Refining the requirements plays a significant influence in cost reduction. The results were varied as shown by a standard deviation of 0.906.

The result revealed that majority of the respondents as shown by a mean of (4.47) indicated that they agreed with the statement that Definition of requirements play a significant influence in

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quality improvement. The responses were varied as measured by standard deviation of 0.501. The result revealed that majority of the respondents with a mean of (4.44) indicated that they agreed with the statement that Breakdown of the requirements plays a significant influence in quality improvement. The responses were varied as measured by standard deviation of 0.656. The result revealed that majority of the respondents (4.47) indicated that they agreed with the statement that Refining the requirements plays a significant influence in quality improvement. The responses were varied as measured by standard deviation of 0.544.

The result revealed that majority of the respondents (4.44) indicated that they agreed with the statement that Definition of requirements play a significant influence in improving user satisfaction. The responses were varied as measured by standard deviation of 0.752. The result showed that majority of the respondents (4.02) indicated that they agreed with the statement that Breakdown of the requirements plays a significant influence in improving user satisfaction. The responses were varied as measured by standard deviation of 0.826. Further, the results indicated that a majority of the respondents (4.4) agreed with the statement that Refining the requirements play a significant influence in improving user satisfaction. There was a standard deviation of 0.717 indicating a variation of responses. The average response for the statements on planning and analysis was 4.19. The findings agree with Kusljic and Marenjak (2013) that a good planning and analysis is necessary for the performance of the energy sector.

Table 3: Planning and Analysis

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
Definition of requirements play a significant influence in cost reduction	1.50%	1.50%	36.80%	29.30%	30.80%	3.86	0.928
Breakdown of the requirements plays a significant influence in cost reduction	0.80%	2.30%	36.10%	33.10%	27.80%	3.85	0.883
Refining the requirements plays a significant influence in cost reduction	1.50%	1.50%	36.80%	32.30%	27.80%	3.83	0.906
Definition of requirements play a significant influence in quality improvement	0.00%	0.00%	0.00%	52.60%	47.40%	4.47	0.501
Breakdown of the requirements plays a significant influence in quality improvement	1.50%	0.00%	0.00%	49.60%	48.90%	4.44	0.656
Refining the requirements plays a significant influence in quality improvement	0.00%	0.80%	0.00%	51.10%	48.10%	4.47	0.544
Definition of requirements play a significant influence in improving user satisfaction	2.30%	0.80%	0.00%	45.10%	51.90%	4.44	0.752
Breakdown of the requirements plays a significant influence in improving user satisfaction	0.00%	0.00%	33.10%	32.30%	34.60%	4.02	0.826
Refining the requirements plays a significant influence in improving user satisfaction	1.50%	1.50%	0.00%	49.60%	47.40%	4.4	0.717
Average						4.19	0.745

4.5.2 Stakeholder Involvement

The second objective of the study was to determine the influence of stakeholder involvement on performance in the energy sector in Kenya. The respondents were asked to indicate to what extent did stakeholder involvement influence performance of the energy sector in Kenya. Results indicated that majority of the respondents 37% agreed that it was to a moderate extent, 27% said that it was to a little extent, 21% said it not at all, while great extent was at 12%.
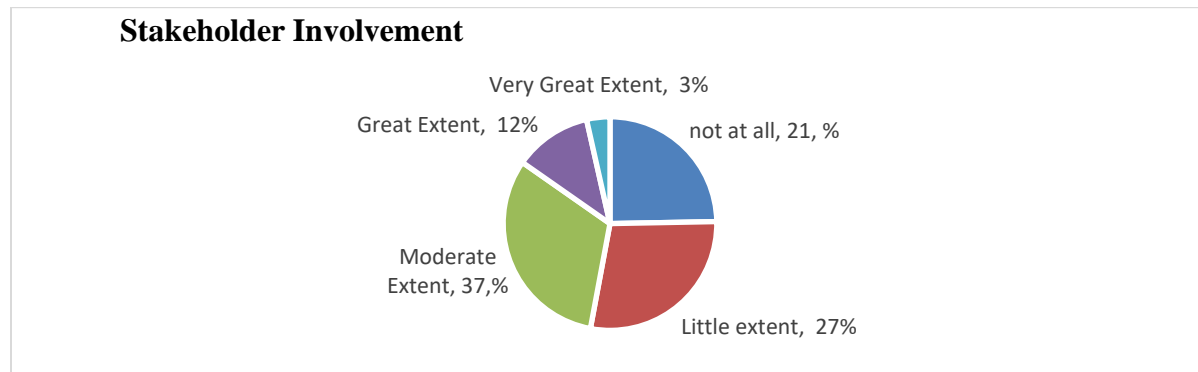
Figure 7: Stakeholder involvement

The respondents were also asked to comment on statements regarding stakeholder involvement influence on performance of the energy sector in Kenya. The respondents were asked to indicate descriptive responses for stakeholder involvement. The result in table 4 revealed that majority of the respondents as indicated by a mean of (3.98) indicated that they agreed with the statement that End user involvement plays a significant influence in cost reduction. The responses were varied as measured by standard deviation of 0.83. The result revealed that majority of the respondents as shown by a mean of (3.9) indicated that they agreed with the statement that Expertise consultancy play a significant influence in cost reduction. The responses were varied as measured by standard deviation of 0.815. The result revealed that majority of the respondents with a mean of (4.05) indicated that they agreed with the statement that Procurement department plays a significant influence in cost reduction. The responses were varied as measured by standard deviation of 0.847.

The result revealed that majority of the respondents (4.46) indicated that they agreed with the statement that End user involvement plays a significant influence in quality improvement. The responses were varied as measured by standard deviation of 0.5. The result revealed that majority of the respondents (4.58) indicated that they agreed with the statement that Expertise consultancy play a significant influence in quality improvement. The responses were varied as measured by standard deviation of 0.496. The result showed that majority of the respondents (2.99) indicated that they agreed with the statement that Procurement department plays a significant influence in quality improvement. The responses were varied as measured by standard deviation of 1.459.

The result revealed that majority of the respondents as shown by a mean of (2.96) indicated that they agreed with the statement that End user involvement plays a significant influence in improving user satisfaction. The responses were varied as measured by standard deviation of 1.489. The result revealed that majority of the respondents with a mean of (3.56) indicated that they agreed with the statement that Expertise consultancy play a significant influence in improving user satisfaction. The responses were varied as measured by standard deviation of 1.117. The result revealed that majority of the respondents (3.71) indicated that they agreed with the statement that Procurement department plays a significant influence in improving user satisfaction. The responses were varied as measured by standard deviation of 1.07. The average response for the statements on stakeholder involvement was 3.79. The findings agree with Jin and Doloi (2008) that exemplary stakeholder involvement is necessary for the performance of the energy sector.

Table 4: Stakeholder Involvement

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
End user involvement plays a significant influence in cost reduction	0.00%	0.00%	35.30%	31.60%	33.10%	3.98	0.83
Expertise consultancy play a significant influence in cost reduction	0.00%	0.00%	38.30%	33.10%	28.60%	3.90	0.815
Procurement department plays a significant influence in cost reduction	0.00%	0.00%	33.10%	28.60%	38.30%	4.05	0.847
End user involvement plays a significant influence in quality improvement	0.00%	0.00%	0.00%	54.10%	45.90%	4.46	0.5
Expertise consultancy play a significant influence in quality improvement	0.00%	0.00%	0.00%	42.10%	57.90%	4.58	0.496
Procurement department plays a significant influence in quality improvement	21.8%	20.3%	15.00%	22.60%	20.30%	2.99	1.459
End user involvement plays a significant influence in improving user satisfaction	24.1%	17.3%	19.50%	16.50%	22.60%	2.96	1.489
Expertise consultancy play a significant influence in improving user satisfaction	0.00%	24.1%	21.10%	29.30%	25.60%	3.56	1.117
Procurement department plays a significant influence in improving user satisfaction	0.00%	18.0%	21.10%	32.30%	28.60%	3.71	1.07
Average						3.79	0.958

4.5.3 Vetting and Approvals

There was also need to assess the influence of vetting and approvals on performance of the energy sector in Kenya as the third objective. The respondents were asked to comment on extent of vetting and approvals influence on performance of the energy sector. Results indicated that majority of the respondents 35% agreed that it was to a moderate extent, 27% said that it was to a great extent, 25% said it was very great extent and not at all and little extent at 13%.
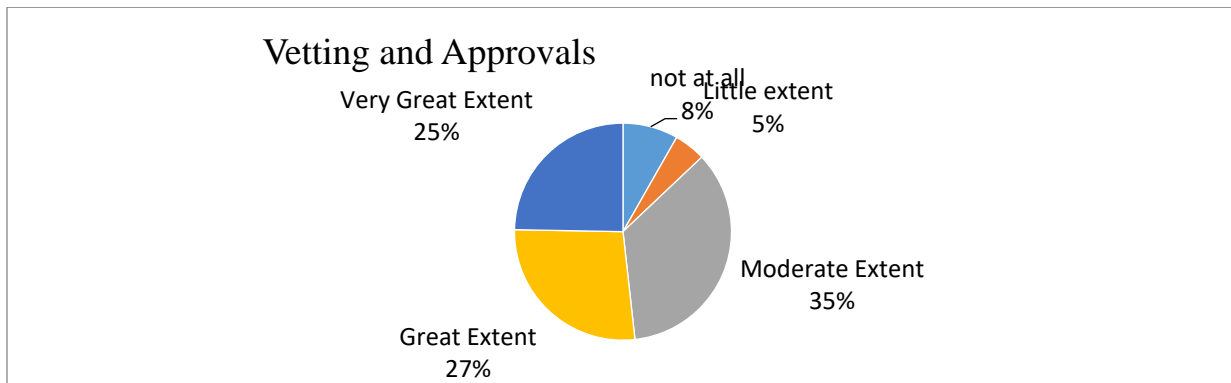
Figure 5: Vetting and Approvals

The respondents were asked to indicate their levels of agreement on statements regarding vetting and approvals. The results in table 5 revealed that majority of the respondent (4.14) agreed with the statement that Readability and clarity plays a significant influence in cost reduction. The responses were varied as shown by the standard deviation of 0.818. The result revealed that majority of the respondent (3.87) agreed with the statement that compliance plays a significant influence in cost reduction. The measures of dispersion around the mean were 0.783. The result revealed that majority of the respondent (3.86) agreed with the statement that Logic and simplicity plays a significant influence in cost reduction. The measures of dispersion around the mean were 0.955.

The result revealed that majority of the respondent (3.98) agreed with the statement that Readability and clarity plays a significant influence in quality improvement. The measures of dispersion around the mean were 0.802. The result revealed that majority of the respondent (3.82) agreed with the statement that compliance plays a significant influence in quality improvement. The measures of dispersion around the mean were 1.029. The result revealed that majority of the respondents as shown by a mean of (4) indicated that they agreed with the statement that Logic and simplicity plays a significant influence in quality improvement. The responses were varied as measured by standard deviation of 0.816.

The result revealed that majority of the respondents with a mean of (2.86) indicated that they agreed with the statement that Readability and clarity plays a significant influence in improving user satisfaction. The responses were varied as measured by standard deviation of 1.476. The result revealed that majority of the respondents (4.44) indicated that they agreed with the statement that compliance plays a significant influence in improving user satisfaction. The responses were varied as measured by standard deviation of 0.498. The result revealed that majority of the respondents (4.53) indicated that they agreed with the statement that Logic and simplicity plays a significant influence in improving user satisfaction. The responses were varied as measured by standard deviation of 0.501. The average response for the statements on vetting and approvals was 3.94. The findings agree with Hui (2010) who observed that if each activity has vetting and approvals as a prerequisite the performance of the energy sector would improve.

Table 5: Vetting and Approvals

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
Readability and clarity play a significant influence in cost reduction	0.00%	0.00%	27.10%	31.60%	41.40%	4.14	0.818
Compliance plays a significant influence in cost reduction	0.00%	0.00%	37.60%	37.60%	24.80%	3.87	0.783
Logic and simplicity play a significant influence in cost reduction	0.00%	6.80%	33.10%	27.80%	32.30%	3.86	0.955
Readability and clarity play a significant influence in quality improvement	0.00%	0.00%	33.10%	36.10%	30.80%	3.98	0.802
Compliance plays a significant influence in quality improvement	3.80%	3.80%	29.30%	33.10%	30.10%	3.82	1.029
Logic and simplicity play a significant influence in quality improvement	0.00%	0.00%	33.10%	33.80%	33.10%	4	0.816
Readability and clarity play a significant influence in improving user satisfaction	26.3%	18.80%	15.00%	21.80%	18.00%	2.86	1.476
Compliance plays a significant influence in improving user satisfaction	0.00%	0.00%	0.00%	56.40%	43.60%	4.44	0.498
Logic and simplicity play a significant influence in improving user satisfaction	0.00%	0.00%	0.00%	46.60%	53.40%	4.53	0.501
Average						**3.94**	**0.853**

4.5.4 Revision and Storage

There was also need to examine the influence of revision and storage on performance of the energy sector in Kenya. The respondents were asked to indicate to what extent did revision and storage influence performance of the energy sector in Kenya. Results indicated that majority of the respondents 46% agreed that it was effective, 41% said that it was very effective, 8% said it was ineffective, somehow effective was at 5%.
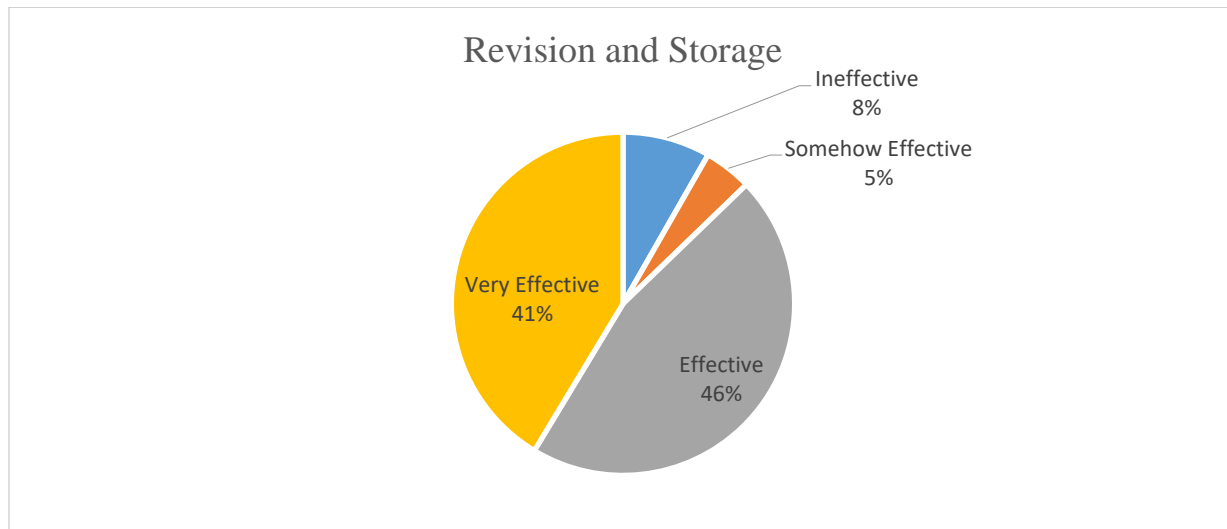
Figure 7: Revision and Storage

The respondents were asked to indicate the descriptive for revision and storage. The result in table 6 revealed that majority of the respondent (4.56) agreed with the statement that Frequent reviews plays a significant influence in cost reduction. The responses were varied as shown by a standard deviation of 0.499. The result revealed that majority of the respondent (4.48) agreed with the statement that Monitoring and evaluation plays a significant influence in cost reduction. The responses were varied as shown by a standard deviation of 0.502. The result revealed that majority of the respondent (4.39) agreed with the statement that Records management plays a significant influence in cost reduction. The responses were varied as shown by a standard deviation of 0.672.

The result further revealed that majority of the respondent (4.44) agreed with the statement that Frequent reviews plays a significant influence in quality improvement. The responses were varied as shown by a standard deviation of 0.742. The result further revealed that majority of the respondent (4.51) agreed with the statement that Monitoring and evaluation plays a significant influence in quality improvement. Responses were varied as shown by a standard deviation of 0.502. The result further revealed that majority of the respondent (4.47) agreed with the statement that Records management plays a significant influence in quality improvement. Responses were varied as shown by a standard deviation of 0.501.

The result revealed that majority of the respondent (4.37) agreed with the statement that Frequent reviews plays a significant influence in improving user satisfaction. The responses were varied as shown by a standard deviation of 0.691. The result revealed that majority of the respondent (4.5) agreed with the statement that Monitoring and evaluation plays a significant influence in improving user satisfaction. The responses were varied as shown by a standard deviation of 0.502. The result revealed that majority of the respondent (4.51) agreed with the statement that Records management plays a significant influence in improving user satisfaction. The responses were varied as shown by a standard deviation of 0.502. The average response for the statements on revision and storage was 4.47. The findings agree with Freeman *et al.,* (2010) that revision and storage is necessary for the performance of the energy sector.

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Table 6: Revision and Storage

Statements	Strongly Disagree	Disag ree	Neutral	Agree	Strongly Agree	Mean	Std. Deviatio n
Frequent reviews play a significant role in cost reductions	0.00%	0.0%	0.00%	44.40%	55.60%	4.56	0.499
Monitoring and evaluation plays a significant role in cost reductions	0.00%	0.0%	0.00%	51.90%	48.10%	4.48	0.502
Records management play a significant role in cost reductions	0.00%	2.3%	3.80%	46.60%	47.40%	4.39	0.672
Frequent reviews play a significant role in improving quality	1.50%	1.5%	1.50%	42.90%	52.60%	4.44	0.742
Monitoring and evaluation plays a significant role in improving quality	0.00%	0.0%	0.00%	48.90%	51.10%	4.51	0.502
Records management play a significant role in improving quality	0.00%	0.0%	0.00%	52.60%	47.40%	4.47	0.501
Frequent reviews play a significant role in improving user satisfaction	0.80%	1.5%	3.00%	49.60%	45.10%	4.37	0.691
Monitoring and evaluation plays a significant role in improving user satisfaction	0.00%	0.0%	0.00%	49.60%	50.40%	4.5	0.502
Records management play a significant role in improving user satisfaction	0.00%	0.0%	0.00%	48.90%	51.10%	4.51	0.502
Average						**4.47**	**0.568**

4.6 Correlation Analysis

Correlation analysis was used to determine both the significance and degree of association of the variables and also predict the level of variation in the dependent variable caused by the independent variables. The results of the correlation analysis are summarized in Table 7.

Table 7: Summary of Pearson's Correlations

Correlations		Planning and Analysis	Stakeholder Involvement	Vetting and Approvals	Revision and Storage	Performance of the Energy Sector
Planning and Analysis	Pearson Correlation	1				
	Sig. (2-tailed)					
Stakeholder Involvement	Pearson Correlation	.558**	1			
	Sig. (2-tailed)					
Vetting and Approvals	Pearson Correlation	.532**	.546**	1		
	Sig. (2-tailed)					
Revision and Storage	Pearson Correlation	.570**	.845**	.613**	1	
	Sig. (2-tailed)					
Performance of the Energy Sector	Pearson Correlation	.714**	.728**	.714**	.737**	1
	Sig. (2-tailed)	0	0	0	0	

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

The correlation summary shown in Table 7 indicated that the associations between each of the independent variables and the dependent variable were all significant at the 95% confidence level. The correlation analysis to determine the association between planning and analysis and performance of the energy sector in Kenya, Pearson correlation coefficient computed and tested at 5% significance level. The results indicate that there was a positive relationship (r=0.714) between planning and analysis and performance of the energy sector in Kenya. In addition, the researcher found the relationship to be statistically significant at 5% level (p=0.000, <0.05).

The correlation analysis to determine the relationship between stakeholder involvement and performance in the energy sector in Kenya, Pearson correlation coefficient computed and tested at 5% significance level. The results indicated that there was a positive relationship (r=0.728) between stakeholder involvement and performance of the energy in Kenya. In addition, the researcher found the relationship to be statistically significant at 5% level (p=0.000, <0.05).

The correlation analysis to determine the relationship between vetting and approvals and performance of the energy sector in Kenya, Pearson correlation coefficient computed and tested at 5% significance level. The results indicate that there was a positive relationship (r=0.714) between vetting and approvals and performance of the energy sector in Kenya. In addition, the researcher found the relationship to be statistically significant at 5% level (p=0.000, <0.05).

The correlation analysis to determine the relationship between revision and storage and performance of the energy sector in Kenya, Pearson correlation coefficient computed and tested at

5% significance level. The results indicate that there was a positive relationship (r= 0.737) between revision and storage and performance of the energy sector in Kenya. In addition, the researcher found the relationship to be statistically significant at 5% level (p=0.000, <0.05).

4.7 Regression Analysis

In this study multivariate regression analysis was used to determine the significance of the relationship between the dependent variable and all the independent variables pooled together. Regression analysis was conducted to find the proportion in the dependent variable (performance of the energy sector) which can be predicted from the independent variables (planning and analysis, stakeholder involvement, vetting and approvals and revision and storage).

Table 8 presented the regression coefficient of independent variables against dependent variable. The results of regression analysis revealed there was a significant positive relationship between dependent variable and the independent variable. The independent variables reported R value of 0.796 indicating that there was perfect relationship between dependent variable and independent variables. R-Square is a commonly used statistic to evaluate model fit. R^2 is 1 minus the ratio of residual variability. The coefficient of determination also called the R^2 was 0.634. R^2 value of 0.634 means that 63.4% of the corresponding variation in performance of the energy sector in procurement specification development in the energy sector in Kenya can be explained or predicted by (planning and analysis, stakeholder involvement, vetting and approvals, revision and storage) which indicated that the model fitted the study data.

Adjusted R^2 in table 8 was called the coefficient of determination which indicated how performance of the energy sector in Kenya varied with variation in effects of factors which includes; planning and analysis, stakeholder involvement, vetting and approvals, revision and storage. The results of regression analysis revealed that there was a significant positive relationship between dependent variable and independent variable at (β= 0.634), p=0.000 <0.05).

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.796[a]	0.634	0.622	0.203452

Table 9: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.167	4	2.292	55.366	.000[b]
	Residual	5.298	128	0.041		
	Total	14.465	132			

The significance value is 0.000 which is less than 0.05 thus the model is statistically significance in predicting how planning and analysis, stakeholder involvement, vetting and approvals, revision and storage influence performance of the energy sector in Kenya. The F critical at 5% level of

significance was 35.65. Since F calculated which can be noted from the ANOVA table above is 55.366 which is greater than the F critical (value =35.65), this shows that the overall model was significant. The study therefore establishes that; planning and analysis, stakeholder involvement, vetting and approvals, revision and storage influence performance of the energy sector. These results agree with Burger and Hawkesworth (2011) results which indicated a positive and significant influence of planning and analysis, stakeholder involvement, vetting and approvals, revision and storage on performance of the energy sector.

Table 10: Coefficients of Determination

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
1 (Constant)	1.967	0.218		9.022	0.000
Stakeholder Involvement	0.358	0.049	0.568	7.327	0.000
Planning and Analysis	0.132	0.056	0.152	2.364	0.000
Vetting and Approvals	0.121	0.032	0.27	3.835	0.020
Revision and Storage	0.05	0.05	0.074	0.998	0.030

The research used a multiple regression model

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

Where:

Y= Performance of the Energy Sector

β_0= Constant Coefficient

X_1= Planning and Analysis

X_2= Stakeholder Involvement

X_3= Vetting and Approvals

X_4= Revision and Storage

ε = Random Error Term

The regression equation is;

$$Y=1.967+ 0.358X_1 + 0.132X_2 + 0.121X_3 + 0.05X_4$$

The regression equation above has established that taking all factors into account (planning and analysis, stakeholder involvement, vetting and approvals, revision and storage) constant at zero, performance of the energy sector in Kenya will be an index of 1.967. The study found that a unit increase in stakeholder involvement will lead to a 0. 358 increase in the performance of the energy sector in Kenya. The P-value was 0.000 and hence the relationship was significant since the p-value was lower than 0.05.

The findings presented also shows that taking all other independent variables at zero, a unit increase in planning and analysis will lead to a 0.132 increase in performance of the energy sector in Kenya. The P-value was 0.02 which is less 0.05 and thus the relationship was significant. In addition, the study found that a unit increase in vetting and approvals will lead to a 0.121 increase in the performance of the energy sector in the energy sector in Kenya. The P-value was 0.000 and thus the relationship was significant. The study also found that a unit increase in revision and storage will lead to a 0.05 increase in performance of the energy sector in Kenya. The P-value was 0.03 and thus the relationship was significant.

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of the Findings

The regression results revealed that drivers identified in the study, that is, planning and analysis, stakeholder involvement, vetting and approvals and revision and storage combined could explain approximately 63.4% of the variations in the performance of the energy sector. The other 36.6% may be attributed to other strategies not explained by the model or the variables.

5.2 Conclusion

Based on the study findings, the study concludes that performance of the energy sector can be improved by planning and analysis, stakeholder involvement, vetting and approvals and revision and storage

5.3 Recommendations

The study recommended that companies in the energy sector should embrace drivers of procurement specification development and further researches should to be carried out in other institutions to find out if the same results can be obtained.

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