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PATRICIA SYOMBUA KIOKO & Dr. GEORGE OCHIRI.

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INFLUENCE OF CRITICAL SUCCESS FACTORS ON SUPPLY CHAIN PERFORMANCE OF COUNTY GOVERNMENTS IN KENYA

[1*] PATRICIA SYOMBUA KIOKO

Post Graduate Student, Department of Procurement and Logistics

Jomo Kenyatta University of Agriculture and Technology

*Corresponding Author's Email: suekioko.sk@gmail.com

[2*]Dr. GEORGE OCHIRI,

Lecturer, Department of Procurement and Logistics,

Jomo Kenyatta University of Agriculture and Technology

Abstract

Purpose: The purpose of the study was to examine influence of critical success factors on performance of county governments in Kenya with an aim of making recommendations on proper use.

Methodology: The study employed a descriptive research design, targeting 163 procurement officers in the 5 of 13 county governments in Kenya which had a budget allocation of above Kshs 8 Billion according to FY 2017/2018 budgetary allocation by the National Treasury, the five were chosen because of their close proximity to Nairobi. The researcher preferred this method because it allows an in-depth study of the subject. Data was collected using self-administered questionnaires. Structured questionnaire was used to collect data. Data was analyzed using descriptive and inferential statistics. Quantitative data was analyzed using multiple regression analysis

Results: The independent variables reported R value of .846 indicating that there is perfect relationship between dependent variable and independent variables. R square value of 0.716 which means that 71.6% of the corresponding variation in supply chain performance of the county governments can be explained or predicted by (quality index management, asset utilization management, schedule management and cost metrics management) which indicated that the model fitted the study data. The results of regression analysis revealed that there was a significant positive relationship between dependent variable and independent variable at (β = 1.240), p=0.00 <0.05).

Conclusion: The study therefore establishes that; quality index management, asset utilization management, schedule management and cost metrics management influence supply chain performance of county governments.

Policy recommendation: The study recommends that procurement officers should ensure that they strictly follow operational procedures to ensure that projects undertaken are of the right quality, in the right quantity, at the right time, to the right place from the right source. This will aim at satisfaction of customers in terms of cost, quality, and timeliness of the delivered product or service, minimizing administrative operating costs.

***Keywords*:** *quality index management, asset utilization management, schedule management, cost metrics management*

1.0 INTRODUCTION

1.1 Background of the Study

Critical success factors are considered an important catalyst in the supply chain performance of company's world over. This is why the critical success factors concept has captured the attention of all sides of commerce and industry, as well as that of academics. The large number of academic articles being published in this area is a testimony to the high level of interest in critical success factors issues (Callendar & Mathews, 2010).

During the past decade, critical success factors have become one of the most important organizational strategies for achieving competitive advantage. Improving the critical success factors with which an organization can deliver its products and services is critical for competing in an expanding global market. Critical success factors begin with the primary assumption that employees in organizations must cooperate with each other in order to achieve the needs of the customer. One can achieve this by controlling manufacturing/service processes to prevent defects (Kingori, 2012).

Global Perspective

In response to increased global pressures, customers' demanding superior products and services, the global market place has become very competitive. The development of critical success factors blueprint that may be applied to all organizations, irrespective of the contexts in which they operate has been quite a challenge. Indeed, no such conclusive blue print may claim to be applicable in all environments or organizational operational contexts. This is because of the existence of a myriad of 'objective realities' and conceptual lenses from which different observers may perceive their own realities, even on issues that may rely on hard or empirical data (Christine, 2010).

Regional Perspective

In the African continent, most countries have adopted procurement critical success factors in many sectors but differences occur in the manner in which they are applied. Procurement critical success factors are concerned with the management of a significant proportion of the non-pay expenditure and ensuring that the best possible value for money is obtained when committing organization expenditure (Amayi, 2011).

The procurement critical success factors are concerned with obtaining the required goods and services from appropriate procurement managers to enable the institution to meet its strategic objectives in an economic, efficient and effective manner. In Uganda, according to Kotabe and Murray (2010) the procurement critical success factors are measured through timeliness, process efficiency, process effectiveness and adhering to green procurement management policies.

Local Perspective

Procurement management in Kenya has come a long way and evolved from a system with no regulations governing its operations to an orderly legally regulated system (PPOA, 2010). In Kenya, there are some manufacturing companies that have successfully embraced the use of procurement critical success factors. For instance, Cadbury (K) Limited has embraced key supply chain performance indicators as the company focus on gaining competitive advantage and improving on supply chain performance (Kioko, 2014).

1.2 Problem Statement

Public procurement systems are central to the effectiveness of development expenditure. Budgets get translated into services largely through the governments' purchases of goods, services and works. It is estimated that 18.42% of the world's Gross Domestic Product (GDP) is spent through public procurement (World Bank, 2013). It is further estimated that public procurement accounts for 9%-13% of the GDP of the economies of developing countries. This statistics indicate that public procurement is very vital to government service delivery, yet constraints affect its performance.

In Kenya, county governments were expected to play a major role in the development of the country through provision of public services and should have become a strong entity in Kenya (Rotich, 2011). County governments in Kenya have been experiencing a myriad of problems including shoddy works, poor quality goods and services, inefficiency, corruption and lack of professionalism leading to waste of huge amounts of public resources (Wanyama, 2013). An audit report by Auditor General for FY 2014/2015 in Embu County revealed losses of Ksh 60 Million through irregular procurement. Bungoma County also experienced 40% losses in FY 2012/2013 due to misappropriation of public funds according to PPOA (2009).

According to an OECD report (2014) a key area for corruption busting reform is the county governments which are a drain on public resources and are locus of corruption, especially when coupled with lax oversight, mismanagement and fiduciary control procedures. The situation is one of loss, fraud, theft and gross mismanagement which are hampering improved and sustained performance and service delivery. However, county governments should be aware of the requirements of the County Governments Act (Article 47 and Article 113) that requires county governments to design performance management plans for evaluating the performance of county public service and implementation of county plans (Nuguti, 2009).

A study by Weele (2010) found that organizations which adopted critical success factors in procurement have reduced costs through transactional and process efficiencies and thereby promoting their procurement performance. Ngugi and Mugo (2012) established that that the performance of public procurement function in Kenya is affected by the issues facing county governments currently. However, their study did not bring out clearly the issue of how procurement critical success factors affect procurement performance. For this reason, county governments in Kenya need to adopt critical success factors in procurement that work for them in order to improve their supply chain performance. It is against this backdrop that this study intends to look at the influence of critical success factors on supply chain performance of county governments in Kenya.

1.3 Objectives of the Study

i. To establish the influence of quality index management on supply chain performance of county governments in Kenya.
ii. To evaluate the influence of asset utilization management on supply chain performance of county governments in Kenya.
iii. To determine the influence of schedule management on supply chain performance of county governments in Kenya.
iv. To assess the influence of cost metrics management on supply chain performance of county governments in Kenya

2.0 LITERATURE REVIEW

2.1 Empirical Review

Quality Index Management and Supply Chain Performance

Muthaura (2009) reckoned that quality indexing is an agreement between the county governments as the client and an agency (managers) which establishes general goals for the agency, sets targets for measuring supply chain performance and provides incentives for achieving these targets and reprimand for project performance. The study revealed that any effort to measure supply chain performance results to positive results because employees' efforts are focused to organization's objectives thus improving procurement performance.

Asset Utilization Management and Supply Chain Performance

According to Christopher *et al.,* (2014) in his study asset utilization relates to engineering issues and the procurement managers' capability to meet procurement performance. Activities related to the provision of technical support are fundamental to procurement managers' performance. He argues that this technical support might consist of direct investment in equipment and personnel of the procurement managers, evaluation of procurement managers' supply chain performance and sharing feedback on the evaluation results, visiting procurement managers' plants, and procurement managers' certification.

Schedule Management and Supply Chain Performance

Clemons *et al.,* (2010) claim that in procurement management, a schedule is a listing of a project's milestones, activities, and deliverables, usually with intended start and finish dates. Those items are often estimated in terms of resource allocation, budget and duration, linked by dependencies and scheduled events. A schedule is commonly used in procurement planning and procurement portfolio management parts of procurement management (Gianakis, 2012).

Evenett *et al.,* (2014) argue that elements on a schedule may be closely related to the "work breakdown structure" terminal elements, the statement of work, or a contract data requirements list. In many industries, such as engineering and construction, the development and maintenance of the procurement schedule is the responsibility of a full-time scheduler or team of schedulers, depending on the size of the procurement (Holweg, 2014).

Cost Metrics Management and Supply Chain Performance

While Atkinson had shown as cited in Nzuve and Njeru (2013) that task difficulty, measured as probability of task success was related to cost management in a curvilinear inverse function with the highest level of effort occurring when the task was moderately difficult and the lowest levels occurring when the task was either very easy or very difficult. He did not measure personal supply chain performance goals. They found a positive linear function with the highest or most difficult goals producing highest levels of effort and supply chain performance. Supply chain performance leveled off or decreased only when limits of ability were reached or when commitments to a highest difficult goal lapsed (Mbua & Sarisar, 2013).

Letangule and Letting (2012) found that when goals are self-set, people with higher self-efficacy set higher goals than do people with lower self-efficacy. They also are more committed to assigned goals, find and use better task strategies to attain goals and respond more positively to negative feedback than people with low self-efficacy. Consequently, leaders can raise the self-efficacy of their subordinates by ensuring adequate training to increase mastery that provide

success experiences, role modeling or finding models with whom the person can identify with and through persuasive communication that express confidence that a person can attain the goal (Kinanga & Partoip, 2013).

2.2 Theoretical review

Goal Setting Theory

Quality index management is best explained by the Goal Theory which states that procurement managers are motivated by clear goals and appropriate feedback (Aitken, Childerhouse & Towill, 2008). That working towards a goal provides a major source of motivation. Challenging and specific goals accompanied by feedback lead to higher levels of procurement manager's supply chain performance in terms of quality. The prime axiom of this theory is that specific difficult goals lead to higher supply chain performance than when procurement managers strive to simply do their best (Artley & Stroh, 2009).

Such goals positively affect supply chain 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 supply chain performance of a task. Difficult and specific quality goals lead to better task supply chain performance than vague and easy goals. In their research, Belz and Wuensche (2009) found out that for goals to be motivational, they should have the following characteristics: They must be specific in terms of cycle and quality index.

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 managers must accept the goals and be committed to them (Cheung, Wang & Lo, 2014).

Quality index management is premised on the tenets of goal theory in that the targets are specific based on the organizations strategic plans. They are also measurable, attainable, realistic and time bound in nature thus offering clarity to the procurement managers. 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 supply chain performance and productivity from the procurement managers(Sylvia, 2008). The procurement managers are regularly provided with feedback on their supply chain performance through the quarterly supply chain performance evaluation reports and the comprehensive evaluation done at the end of the contract period.

The feedback enables the procurement managers to assess themselves and adjust their strategies and efforts to meet the targets. The procurement managers are involved in the target setting and negotiations of their responsiveness with the procuring entity on the supply chain performance and achievement of the goals (Simatupang & Sridharan, 2008). This leads to acceptance and ownership of the process which in turn enhances procurement managers' commitment and persistence towards the achievement of the targets. In this particular study goal setting theory is adopted and linked to quality index management variable

2.3 Conceptual Framework

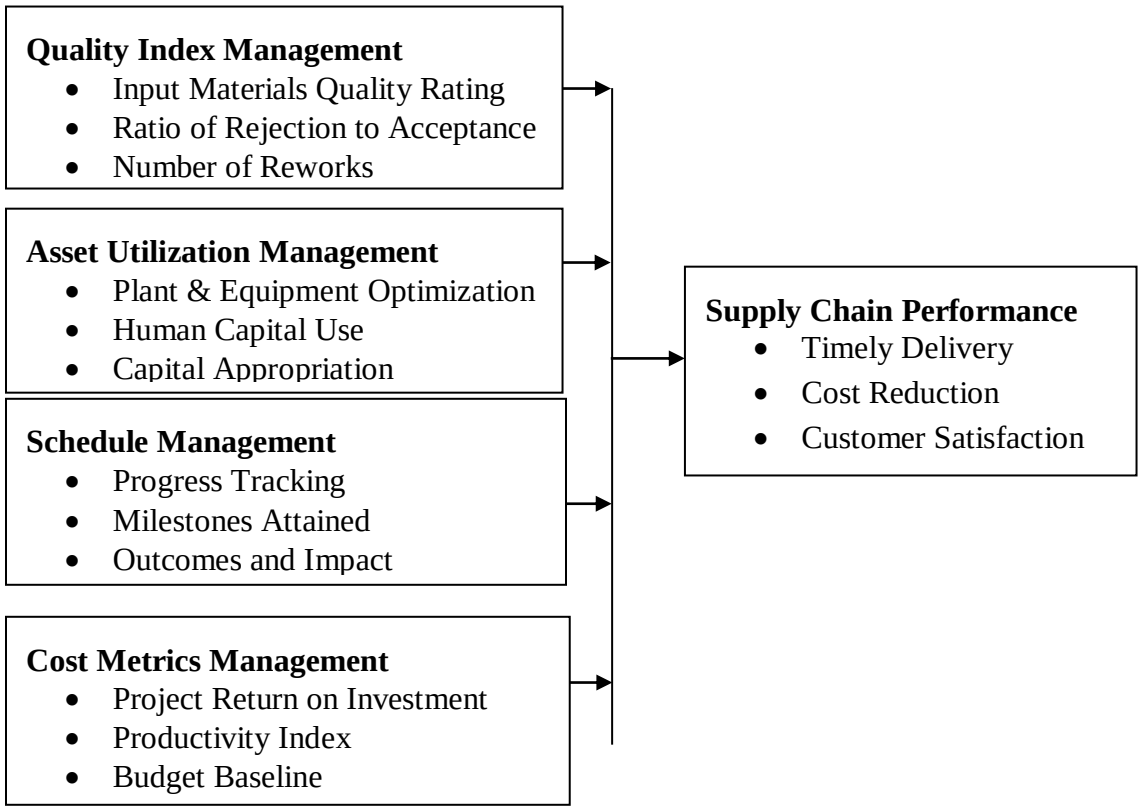

Figure 1: Conceptual Framework

3.0 METHODOLOGY

The study employed a descriptive research design, targeting 163 procurement officers in the 5 of 13 county governments in Kenya which had a budget allocation of above Kshs 8 Billion according to FY 2017/2018 budgetary allocation by the National Treasury, the five were chosen because of their close proximity to Nairobi. The researcher preferred this method because it allows an in-depth study of the subject. Data was collected using self-administered questionnaires. Structured questionnaire was used to collect data. Data was analyzed using descriptive and inferential statistics. Quantitative data was analyzed using multiple regression analysis.

4. 0 RESULTS FINDINGS

4.1 Descriptive Analysis

Quality Index Management

The first objective of the study was to investigate the influence of quality index management on supply chain performance of county governments in Kenya. The respondents were asked to indicate to what extent did quality index management influenced supply chain performance of county governments in Kenya. Results indicated that majority of the respondents 37% agreed

that it was to a very great extent, 33% said that it was to a great extent, 19% said it was moderate, while little extent and not all were at 4 and 7% respectively.

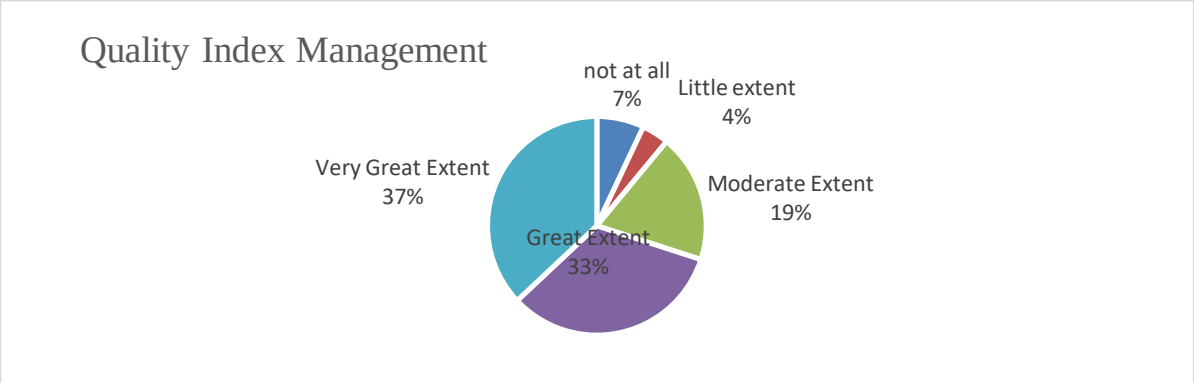

Figure 2: Quality Index Management

The responses were rated on a likert scale and the results presented in Table 4.6 below and 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.

Results indicated that majority of the respondents 77% agreed on statement that input materials quality rating plays a significant role in timely deliveries. Results indicated that majority of the respondents 60% agreed on statement that regulating the ration of rejection plays a significant role in timely deliveries. Further results indicated that 63% of the respondents were in agreement that checking the reworks percentage plays a significant role in timely deliveries.

Results also indicated that 60% of the respondents agreed that input materials quality rating plays a significant role in cost reduction. Results also indicated that 54% of the respondents agreed that regulating the ration of rejection plays a significant role in cost reduction. Further results indicated that 49% of the respondents were in agreement that checking the reworks percentage plays a significant role in cost reduction.

Results also indicated that 61% of the respondents agreed that input materials quality rating plays a significant role in improving customer satisfaction. Results also indicated that 76% of the respondents agreed that regulating the ration of rejection plays a significant role in improving customer satisfaction. Results also indicated that 58% of the respondents agreed that checking the reworks percentage plays a significant role in improving customer satisfaction.

The average mean of the respondents was 3.68 indicating that majority of the respondents agreed with influence of quality index management on supply chain performance of county governments in Kenya. However the responses were varied as shown by a standard deviation of 0.88. These findings indicate that through quality index management, the management of county governments service could improve their supply chain performance. This agrees with a study done by Christopher (2008) that organizations must look toward their continuous processes improvements. The opportunities for cost savings and processes improvements can be enormous as the impact on margins is considerable.

Table 1: Quality Index Management Influence on Supply Chain Performance of County Governments

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
Materials quality rating plays a significant role in timely deliveries	5.0%	5.0%	13.0%	36.0%	41.0%	3.47	0.96
Regulating the ration of rejection plays a significant role in timely deliveries	6.0%	5.0%	29.0%	44.0%	16.0%	3.59	1.02
Checking the reworks percentage plays a significant role in timely deliveries	0.0%	7.0%	30.0%	43.0%	20.0%	3.76	0.85
Materials quality rating plays a significant role in cost reduction	1.0%	0.0%	39.0%	51.0%	9.0%	3.67	0.68
Regulating the ration of rejection plays a significant role in cost reduction	9.0%	7.0%	30.0%	35.0%	19.0%	3.48	1.15
Checking the reworks percentage plays a significant role in cost reduction	5.0%	5.0%	41.0%	36.0%	13.0%	3.47	0.96
Materials quality rating plays a significant role in improving customer satisfaction	0.0%	0.0%	39.0%	53.0%	8.0%	3.69	0.62
Regulating the ration of rejection plays a significant role in improving customer satisfaction	0.0%	0.0%	24.0%	34.0%	42.0%	4.18	0.80
Checking the reworks percentage plays a significant role in improving customer satisfaction	3.0%	0.0%	39.0%	45.0%	13.0%	3.65	0.82
Average						**3.68**	**0.88**

Asset Utilization Management

There was also need to establish how asset utilization management influenced supply chain performance of county governments in Kenya as the second objective. The respondents were asked to comment on extent of asset utilization management influence supply chain performance of county governments in Kenya. Results also showed that majority of the respondents indicated

49% was very great extent, 44% great extent, not at all was 2% while little extent and moderate extent was 3% while little extent was at 2%.

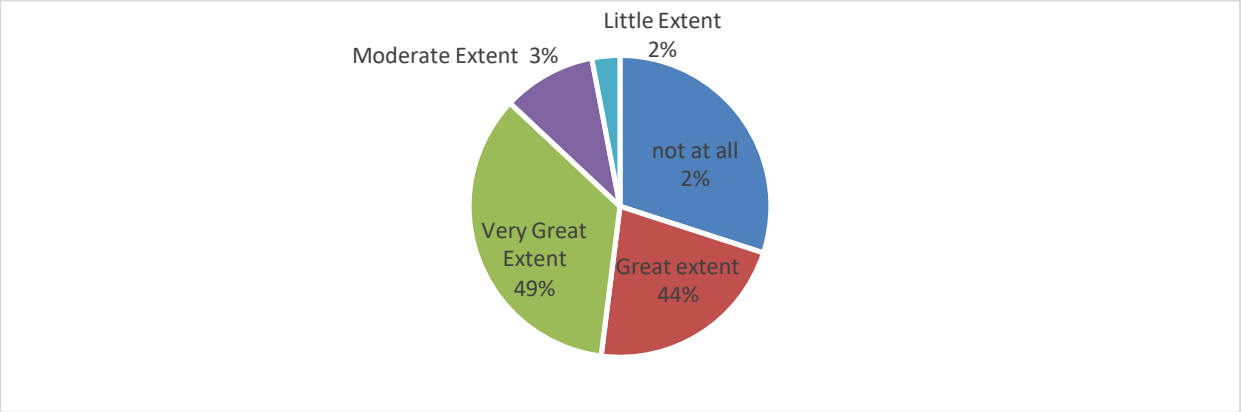

Figure 3: Asset Utilization Management

Results indicated that majority of the respondents 100% agreed on the statement that plant and equipment optimization plays a significant role in timely deliveries. Results indicated that majority of the respondents 64% agreed on the statement that human capital use plays a significant role in timely deliveries. Results indicated that majority of the respondents 47% agreed on the statement capital appropriation plays a significant role in timely deliveries.

Results indicated that majority of the respondents 100% agreed on the statement that plant and equipment optimization plays a significant role in cost reduction. Results indicated that majority of the respondents 97% agreed on the statement that human capital use plays a significant role in cost reduction. Results indicated that majority of the respondents 93% agreed on the statement that capital appropriation plays a significant role in cost reduction.

Results indicated that majority of the respondents 91% agreed on the statement that plant and equipment optimization plays a significant role in improving customer satisfaction. Results indicated that majority of the respondents 90% agreed on the statement that human capital use plays a significant role in improving customer satisfaction. Results indicated that majority of the respondents 89% agreed on the statement that capital appropriation plays a significant role in improving customer satisfaction.

The average mean of the respondents was 4.16 indicating that majority of the respondents agreed with influence of asset utilization management policy on supply chain performance of county governments in Kenya. However the responses were varied as shown by a standard deviation of 0.83. The results imply that county governments greatly benefit when asset utilization management is embraced to reduce costs, introduce durability indices and supply chain performance ratings (Ackali, 2009).

Table 2: Asset Utilization Management Influence on Supply Chain Performance of County Governments

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. D
Plant and equipment optimization plays a significant role in timely deliveries	0.0%	0.0%	0.0%	48.0%	52.0%	4.52	0.50
Human capital specialization plays a significant role in timely deliveries	0.0%	0.0%	36%	40.0%	24.0%	3.88	0.77
Capital appropriation plays a significant role in timely deliveries	15.0%	19.0%	19%	20.0%	27.0%	3.25	1.42
Plant and equipment optimization plays a significant role in cost reduction	0.0%	0.0%	0.0%	51.0%	49.0%	4.49	0.50
Human capital specialization plays a significant role in cost reduction	0.0%	3.0%	0.0%	54.0%	43.0%	4.37	0.65
Capital appropriation plays a significant role in cost reduction	4.0%	0.0%	3.0%	48.0%	45.0%	4.30	0.87
Plant and equipment optimization plays a significant role in improving customer satisfaction	0.0%	3.0%	6.0%	51.0%	40.0%	4.28	0.71
Human capital specialization plays a significant role in improving customer satisfaction	6.0%	0.0%	4.0%	54.0%	36.0%	4.14	0.96
Capital appropriation plays a significant role in improving customer satisfaction	6.0%	4.0%	1.0%	40.0%	49.0%	4.22	1.08
Average						**4.16**	**0.83**

Schedule Management

There was also need to establish how schedule management influenced supply chain performance of county governments in Kenya as the third objective. The respondents were asked to comment on extent of schedule management influence supply chain performance of county governments in Kenya. Results indicated that majority of the respondents 48% agreed that it was to a very great extent, 45% said that it was to a great extent, 2% said it was moderate; little extent was 2% and not all at 3%.

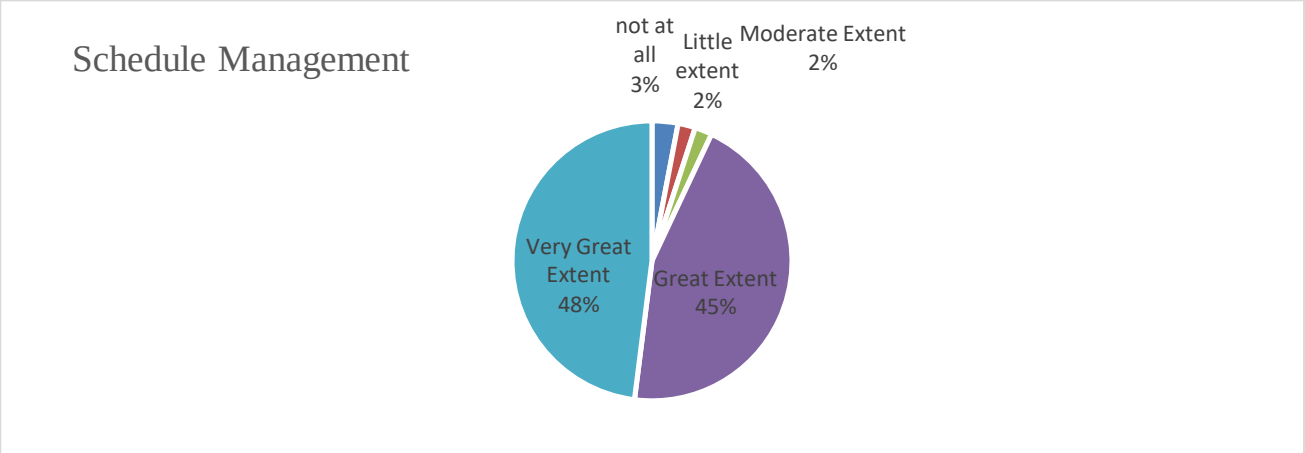

Figure 4: Schedule Management

Table 3: Schedule Management Influence on Supply Chain Performance of County Governments

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. D
Progress tracking plays a significant role in timely deliveries	2.0%	2.0%	26.0%	35.0%	35.0%	3.99	0.94
Milestones attained plays a significant role in timely deliveries	0.0%	3.0%	3.0%	34.0%	60.0%	4.51	0.70
Outcomes and impact plays a significant role in timely deliveries	5.0%	20.0%	22.0%	27.0%	26.0%	3.49	1.22
Progress tracking plays a significant role in cost reduction	0.0%	27.0%	23.0%	26.0%	24.0%	3.47	1.13
Milestones attained plays a significant role in cost reduction	0.0%	1.0%	19.0%	51.0%	29.0%	4.08	0.72
Outcomes and impact plays a significant role in cost reduction	1.0%	0.0%	38.0%	28.0%	33.0%	3.92	0.90
Progress tracking plays a significant role in improving customer satisfaction	2.0%	1.0%	30.0%	25.0%	42.0%	4.04	0.97
Milestones attained plays a significant role in improving customer satisfaction	0.0%	0.0%	41.0%	30.0%	29.0%	3.88	0.83
Outcomes and impact plays a significant role in improving customer satisfaction	1.0%	2.0%	31.0%	28.0%	38.0%	4.00	0.93
Average						**3.93**	**0.93**

Results indicated that majority of the respondents 70% agreed on the statement that progress tracking plays a significant role in timely deliveries. Results also indicated that majority of the respondents 94% agreed on the statement that milestones attained plays a significant role in

timely deliveries. Results also indicated that majority of the respondents 53% agreed on the statement that outcomes and impact plays a significant role in timely deliveries.

Results also indicated that majority of the respondents 50% agreed on the statement that progress tracking plays a significant role in cost reduction. Results also indicated that majority of the respondents 80% agreed on the statement that milestones attained play a significant role in cost reduction. Results also indicated that majority of the respondents 61% agreed on the statement that outcomes and impact plays a significant role in cost reduction.

Results also indicated that majority of the respondents 67% agreed on the statement that progress tracking plays a significant role in improving customer satisfaction. Results also indicated that majority of the respondents 59% agreed on the statement that milestones attained plays a significant role in improving customer satisfaction. Results also indicated that majority of the respondents 66% agreed on the statement that outcomes and impact plays a significant role in improving customer satisfaction.

The average mean of the respondents was 3.93 indicating that majority of the respondents agreed with influence of schedule management on supply chain performance of county governments in Kenya. However the responses were varied as shown by a standard deviation of 0.93. These findings imply that through schedule management, county governments can improve the value gained from observing timelines (Arthur, 2009).

Cost Metrics Management

The fourth objective of the study was to assess the influence of cost metrics management on supply chain performance of county governments in Kenya. The respondents were asked to indicate to what extent cost metrics management influenced supply chain performance of county governments in Kenya. Results indicated that majority of the respondents 19% agreed that it was to a very great extent, 33% said that it was to a great extent, 30% said it was moderate, while little extent was 11% and not all was at 7% respectively.

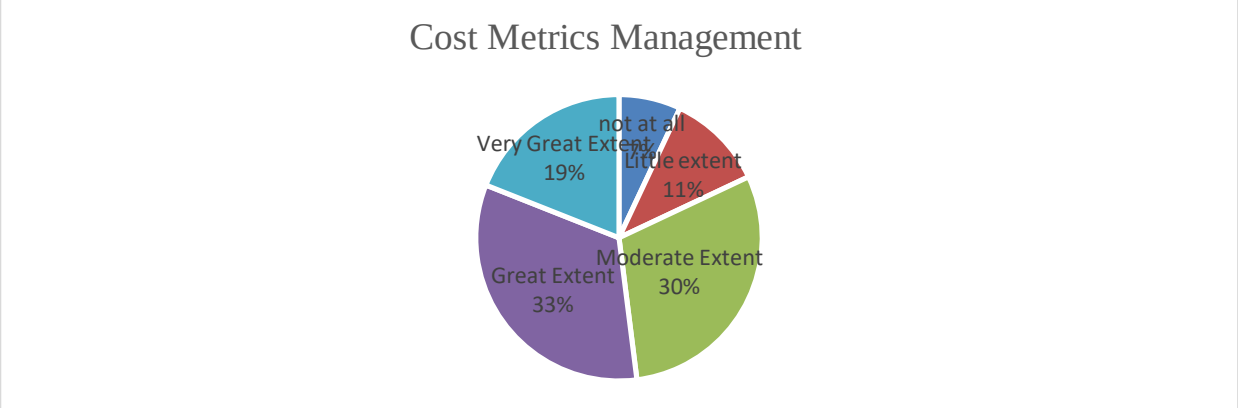

Figure 5: Cost Metrics Management

Table 4: Cost Metrics Management Influence on Supply Chain Performance of County Governments

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Procurement ROI plays a significant role in timely deliveries	3.0%	6.0%	5.0%	57.0%	29.0%	4.0	0.9
Productivity indexing plays a significant role in timely deliveries	4.0%	4.0%	2.0%	43.0%	47.0%	4.3	1.0
Sticking to the budget baseline plays a significant role in timely deliveries	0.0%	0.0%	0.0%	56.0%	44.0%	4.4	0.5
Procurement ROI plays a significant role in cost reduction	4.0%	4.0%	2.0%	44.0%	46.0%	4.2	1.0
Productivity indexing plays a significant role in cost reduction	1.0%	2.0%	1.0%	48.0%	48.0%	4.4	0.7
Sticking to the budget baseline plays a significant role in cost reduction	2.0%	2.0%	1.0%	48.0%	47.0%	4.4	0.8
Procurement ROI plays a significant role in improving customer satisfaction	2.0%	2.0%	1.0%	39.0%	56.0%	4.5	0.8
Productivity indexing plays a significant role in improving customer satisfaction	4.0%	4.0%	1.0%	48.0%	43.0%	4.2	1.0
Sticking to the budget baseline plays a significant role in improving customer satisfaction	6.0%	6.0%	3.0%	45.0%	40.0%	4.1	1.1
Average						**4.27**	**0.86**

The respondents were also asked to comment on statements regarding cost metrics management influence on supply chain performance of county governments in Kenya. Results indicated that majority of the respondents 86% agreed on the statement that procurement return on investment plays a significant role in timely deliveries. Results also indicated that 90% of the respondents were in agreement that productivity indexing plays a significant role in timely deliveries. Results indicated that majority of the respondents 100% agreed on the statement that adhering to the budget baseline plays a significant role in timely deliveries.

Results indicated that majority of the respondents 90% agreed on the statement that procurement return on investment plays a significant role in cost reduction. Results indicated that majority of the respondents 96% agreed on the statement that productivity indexing plays a significant role in cost reduction. Results indicated that majority of the respondents 95% agreed on the statement that adhering to the budget baseline plays a significant role in cost reduction.

Results indicated that majority of the respondents 92% agreed on the statement that procurement return on investment plays a significant role in improving customer satisfaction. Results indicated that majority of the respondents 91% agreed on the statement that productivity indexing plays a significant role in improving customer satisfaction. Results indicated that majority of the respondents 85% agreed on the statement that adhering to the budget baseline plays a significant role in improving customer satisfaction.

The average mean of the respondents was 4.27 indicating that majority of the respondents agreed with statements regarding cost metrics management influence on supply chain performance of county governments in Kenya. However the responses were varied as shown by a standard deviation of 0.86. These findings imply that cost metrics management was an important aspect in the county governments. The findings agree with David (2014) that using cost metrics management when managing supply chains can save an organization a lot of unnecessary costs.

4.2 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 correlation technique is used to analyze the degree of association between two variables. The results of the correlation analysis are summarized in Table 5.

The correlation summary shown in Table 5 indicates 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 relationship of critical success factors on supply chain performance of county governments in Kenya, Pearson Correlation coefficient computed and tested at 5% significance level.

The results indicate that there is a positive relationship (r=0.761) between quality index management and supply chain performance of county governments. 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 quality index management and supply chain performance of county governments, Pearson Correlation coefficient computed and tested at 5% significance level.

The correlation analysis to determine the relationship between asset utilization management and supply chain performance of county governments, Pearson Correlation coefficient computed and tested at 5% significance level. The results indicate that there is a positive relationship (r=0.609) between asset utilization management and supply chain performance of county governments. 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 schedule management and supply chain performance of county governments, Pearson Correlation coefficient computed and tested at 5% significance level. The results indicate that there is a positive relationship (r=0.663) schedule management and supply chain performance of county governments. 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 cost metrics management and supply chain performance of county governments, Pearson Correlation coefficient computed and tested at 5% significance level. The results indicate that there is a positive relationship (r=0.652) between cost metrics management and supply chain performance of county governments. In

addition, the researcher found the relationship to be statistically significant at 5% level (p=0.000, <0.05). Hence, it is evident that all the independent variables could explain the changes in the supply chain performance of county governments on the basis of the correlation analysis.

Table 5: Summary of Pearson's Correlations

Variables		Quality Index Management	Asset Utilization Management	Schedule management	Cost Metrics Management	Supply Chain Performance of County Governments
Quality Index Management	Pearson Correlation	1	.550**	.580**	.483**	.761**
	Sig. (2-tailed)		0	0	0	0
Asset Utilization Management	Pearson Correlation	.550**	1	.434**	.659**	.609**
	Sig. (2-tailed)	0		0	0	0
Schedule Management	Pearson Correlation	.580**	.434**	1	.550**	.663**
	Sig. (2-tailed)	0	0		0	0
Cost Metrics Management	Pearson Correlation	.483**	.659**	.550**	1	.652**
	Sig. (2-tailed)	0	0	0		0
Supply Chain Performance of County Governments	Pearson Correlation	.761**	.609**	.663**	.652**	1
	Sig. (2-tailed)	0	0	0	0	

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

4.3 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 (supply chain performance of county governments) which can be predicted from the independent variables (quality index management, asset utilization management, schedule management and cost metrics management) Table 6 presents the regression coefficient of independent variables against dependent variable. The results of regression analysis revealed there is a significant positive relationship between dependent variable (supply chain performance of county governments and the independent variables (quality index management, asset utilization management, schedule management and cost metrics management).

The independent variables reported R value of .846 indicating that there is perfect relationship between dependent variable and independent variables. R square value of 0.716 which means that 71.6% of the corresponding variation in supply chain performance of the county governments can be explained or predicted by (quality index management, asset utilization management, schedule management and cost metrics management) which indicated that the model fitted the study data. The results of regression analysis revealed that there was a significant positive relationship between dependent variable and independent variable at (β = 1.240), p=0.00 <0.05).

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	. 846[a]	.716	.704	.149

a) Predictors: *(Constant), Quality Index Management, Asset Utilization Management, Schedule Management and Cost Metrics Management*

b) Dependent Variable: *Supply Chain Performance of County Governments*

Table 7: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.369	4	1.342	74.555	.000[b]
	Residual	2.131	115	0.018		
	Total	**7.5**	**119**			

a) Predictors: *(Constant), Quality Index Management, Asset Utilization Management, Schedule Management and Cost Metrics Management*

b) Dependent Variable: *Supply Chain Performance of County Governments*

The significance value is 0.000 which is less than 0.05 thus the model is statistically significant in predicting how quality index management, asset utilization management, schedule management and cost metrics management influence supply chain performance of county

governments. The study therefore establishes that; quality index management, asset utilization management, schedule management and cost metrics management influence supply chain performance of county governments. These results agree with Paul (2011) results which indicated a positive and significant influence of critical success factors on supply chain performance of county governments.

Table 8: Coefficients of Determination

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.240	0.260		4.771	0.000
Quality Index Management	0.462	0.073	0.463	6.299	0.000
Asset Utilization Management	0.108	0.035	0.243	3.075	0.000
Schedule Management	0.071	0.023	0.218	3.008	0.000
Cost Metrics Management	0.064	0.047	0.099	1.361	0.021

a) Predictors: *(Constant), Quality Index Management, Asset Utilization Management, Schedule Management and Cost Metrics Management*

b) Dependent Variable: *Supply Chain Performance of County Governments*

The research used a multiple regression model

$Y= \beta 0+ \beta 1X1+\beta 2X2+\beta 3X3 +\beta 4X4 +Ɛ$

Where Y= Supply Chain Performance of County Governments

β0= Constant

X1= Quality Index Management

X2= Asset Utilization Management

X3= Schedule Management

X4= Cost Metrics Management

Ɛ= Error Term at 95% confidence level.

The regression equation will be;

$Y=1.240+ 0.462 X_1 + 0.108X_2 + 0.071X_3 +0.064X_4$

The regression equation above has established that taking all factors into account (quality index management, asset utilization management, schedule management and cost metrics management) constant at zero, supply chain performance of county governments will be an index of 1.240. The findings presented also shows that taking all other independent variables at zero, a unit increase in quality index management will lead to a 0.462 increase in supply chain performance of county governments. The P-value was 0.000 which is less than 0.05 and thus the relationship was significant.

The study also found that a unit increase in asset utilization management will lead to a 0.108 increase in in supply chain performance of county governments. The P-value was 0.000 and thus the relationship was significant. In addition, the study found that a unit increase in schedule

management will lead to a 0.071 increase in the supply chain performance of county governments. The P-value was 0.000 and thus the relationship was significant.

Lastly, the study found that a unit increase in cost metrics management will lead to a 0.064 increase in the supply chain performance of county governments. The P-value was 0.021 and hence the relationship was significant since the p-value was lower than 0.05. The findings of the study show that, quality index management contributed most to supply chain performance of county governments.

5. 0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

The study sought to examine the influence of critical success factors on supply chain performance of county governments in Kenya. The study targeted procurement officers in county governments. A total of 120 procurement officers participated.

Based on the study findings, the study concludes that supply chain performance of county governments can be improved by quality index management, asset utilization management, schedule management and cost metrics management.

5.1 Recommendations

To ensure that the county governments have better supply chain performance they should focus more on using their critical success factors that are vetted and with empirical backup so as to ascertain there is consistency of procurement. The study recommends that procurement officers should ensure that they strictly follow operational procedures to ensure that projects undertaken are of the right quality, in the right quantity, at the right time, to the right place from the right source. This will aim at satisfaction of customers in terms of cost, quality, and timeliness of the delivered product or service, minimizing administrative operating costs.

Existing literature indicates that as a future avenue of research, there is need to undertake similar research in other institutions and private organizations in Kenya and other countries in order to establish whether the explored practices herein can be generalized to affect supply chain performance in other institutions.

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