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STRATEGIC SOURCING FOR SUSTAINABILITY OF UNIVERSAL HEALTHCARE COVERAGE: A CASE STUDY OF KENYA MEDICAL SUPPLIES AUTHORITY

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Abstract: **Universal Health Coverage (UHC) means that all people have access to the health services that they need without the risk of financial hardship when paying for them (WHO, 2010). The main objective of this study was to examine the influence of strategic sourcing on the sustainability of universal healthcare coverage by the Kenya Medical Supplies Authority with the following specific objectives of the study; to establish the influence of strategic supplier selection on the sustainability of universal healthcare coverage by Kenya Medical Supplies Authority, to assess the influence of supplier relationship management on the sustainability of universal healthcare coverage by Kenya Medical Supplies Authority, to examine the influence of supplier negotiation on the sustainability of universal healthcare coverage by Kenya Medical Supplies Authority and lastly determine the influence of strategic procurement planning on the sustainability of universal healthcare coverage by Kenya Medical Supplies Authority. The study adopted a cross-sectional survey. The target population of this study was 348, including management staff in Kenya Medical Supplies Authority. A semi- structured questionnaire was administered through the e-mail survey and hand delivery. Secondary data was obtained from both published and unpublished records. The questionnaire was tested for validity and reliability. Both quantitative and qualitative techniques were used to analyze the data with SPSS software program version 25. The study found that both strategic supplier selection, supplier relationship management, supplier negotiation, strategic procurement has a significant influence on the sustainability of universal healthcare coverage by the Kenya Medical Supplies Authority; hence the study recommended that managers in the humanitarian organizations in Kenya Medical Supplies Authority should include strategic sourcing practices in their strategic plan and particular investment in strategic supplier selection, supplier relationship management, supplier negotiation strategic procurement which may make it easy to bring about innovation in the organization and good information sharing to both suppliers and clients**

Keywords: **strategic supplier selection, supplier relationship management, supplier negotiation, strategic procurement, sustainability.**

1. INTRODUCTION

1.1 Background of the Study

Universal Health Coverage (UHC) means that all people have access to the health services that they need without the risk of financial hardship. According to George (2016), this requires an efficient health system that can provide quality services, health workers, medicines, and technology to the country's citizens. There is also a need for an efficient financing system to protect the citizens from experiencing financial hardships as they seek these health care services. The objectives of UHC are embodied in the definition; to ensure equitable access to healthcare for all, quality health care that

is good enough to improve the health of those receiving it, and ensuring those receiving the service are not put at risk of financial harm. UHC monitoring focuses on two aspects, the proportion of the population with access to essential health care and the proportion of the population that uses a substantial amount of their household income for healthcare purposes (Lönnroth, Glaziou, Weil, Floyd, Uplekar & Raviglione, 2014).

The journey towards UHC began in 1977 when all member states of the WHO set goals to have affordable healthcare for all by 2000. The main strategy was to have primary health care accessible by all and to have each member state develop individual strategies on how equitable health care can be achieved (Obare, Brolan & Hill, 2014). The Ministry of Health (MoH) was charged with coming up with master plans on how this endeavor would be financed, considering factors like the government's direct and indirect financing, insurance schemes, community contribution, and individual payment for services. The goals set out in 1977 are not fixed and have now become continued aspirations for the member states. Health care financing has become a burden for most governments, and this has led to many national health care schemes being conceptualized to try to ease the financial burden of health care on the government (Plianbangchang, 2018).

Strategic sourcing is broadly described as a process that directs all sourcing activities toward opportunities that enable an organization to achieve its long-term operational and organizational performance goals. Strategic sourcing is probably the most significant aspect characterizing an organization's transformation to supply management. This aspect of supply management also provides some of the most value-added benefits to the organization. Sourcing, one of the major steps in the procurement process, involves identifying and selecting the supplier whose costs, qualities, technologies, timeliness, dependability, and service best meet the organization's needs (Eltantawy, Giunipero & Handfield, 2014).

Strategic sourcing involves taking a strategic approach to selecting suppliers more aligned with the organization's competitive strategy. Strategic sourcing reflects the integration of procurement or sourcing strategy with corporate strategy (Nair, Jayaram & Das, 2015). The integration of procurement and corporate strategy is reflective of the transformation of purchasing to supply management. Strategic sourcing is a well-established and proven method for managing large-scale, medium to long-term procurement activities. Numerous public and private organizations have adopted it as standard practice in developed countries. It consists of two key capabilities - strategic contracting and category management (Eltantawy, Giunipero & Handfield, 2014).

In strategic contracting, the emphasis is on developing a detailed knowledge base of the market and the category being sourced and developing optimal sourcing solutions. Category management focuses on managing contracts to ensure that the negotiated contract benefits are realized and continuously improve contract benefits yearly. Supporting the implementation of the policy are other existing policies, extensive good practice guidelines, and comprehensive tools and templates, including standard contracts and tender documentation (Awate, Larsen & Mudambi, 2015).

For sustainable universal healthcare coverage, there is a need for strategic sourcing to ensure the availability of quality medical products at a fair price, adequacy in stocks of essential health medicines and supplies, and delivery of medicines and supplies in good time as requested by health facilities. This is done by various agencies in respective countries implementing universal health care. Strategic sourcing plays an important role in analyzing high-volume purchases and developing long-term partnerships with a select group of suppliers capable of providing quality products and services at low costs. Strategic sourcing serves as a roadmap to procure the goods and services the organization knows it needs ahead of time, allowing procurement managers time to find the best price instead of waiting until there is an immediate need (Luzzini, Amann, Caniato, Essig & Ronchi, 2015).

1.2 Statement of the Problem

Supply of affordable medicines to the last mile is one success factor for sustainable universal health care. The other success factors are quality, price and reliability of the medial supplies. Quality is ensured by eradicating the problem of counterfeit medicines, price controls ensure that the drugs are affordable to every Kenyan and the reliability is achieved by ensuring that all Kenyans have access to the drugs (Munge, Mulupi & Chuma, 2015). There has been inadequate strategic sourcing in Kenya with regulation of prices being difficult in Kenya.

Sustainability of universal health care in Kenya is bound to face various challenges if strategic sourcing is not adopted. Challenges that have been prevalent in Kenya's pharmaceutical market and could hinder the sustainability of universal health care (Kiplangat & Kiarie, 2015). There is a challenge of data collection to aid in budgetary planning and allocation which leads to under budgeting in some areas and hence shortage of drugs. The poor infrastructure leads to difficulty at

the county to order from KEMSA through the LMIS. Poor training of the staff at the health facilities also leads to poor planning resulting to shortages at the facilities (Conference Proceedings Report on Universal Health Care, 2018).

Expiry of drugs has been prevalent in Kenya and this was attributed to poor planning and poor projection of country needs. The resale of expired drugs that were repackaged by unscrupulous traders had been a challenge for KEMSA and this led to the entity being required to mop up all expiries from the counties. In addition to this, pilferage of drugs and may also inhibit sustainability of universal health care since the supplied products in some instances do not reach the intended user or was sold in the market at very high prices (Miriti, 2018).

Over the years, several studies have sought to establish a link with regards to strategic sourcing for sustainability of Universal Healthcare Coverage. For instance, Mwangi (2019) examined sustainability of Universal Healthcare Coverage based on the Case of Medical Supplies by Kenya Medical Supplies Authority, Karanja (2014) examined the challenges in provision of universal health care by the National Hospital Insurance fund, Kenya and Mutua (2018) looked at influence of strategic sourcing on procurement performance of Kenyan commercial banks. These studies however, do not provide a comprehensive view of the problems relating to sustainability of universal healthcare coverage in relation to the health service delivery. It's on this backdrop that this study sought to examine the strategic sourcing for sustainability of universal healthcare coverage by Kenya Medical Supplies Authority.

1.3 Objectives of the study

1.3.1 General Objective

The purpose of this study was to examine the influence of strategic sourcing on sustainability of universal healthcare coverage by Kenya Medical Supplies Authority.

1.3.2 Specific Objectives

The specific objectives of the study were:

i. To establish the influence of strategic supplier selection on sustainability of universal healthcare coverage by Kenya Medical Supplies Authority.

ii. To assess the influence of supplier relationship management on sustainability of universal healthcare coverage by Kenya Medical Supplies Authority.

iii. To examine the influence of supplier negotiation on sustainability of universal healthcare coverage by Kenya Medical Supplies Authority.

iv. To determine the influence of strategic procurement planning on sustainability of universal healthcare coverage by Kenya Medical Supplies Authority.

v. To establish the influence of supplier development on sustainability of universal healthcare coverage by Kenya Medical Supplies Authority.

1.4 Research Questions

The study's research questions were:

i. How does strategic supplier selection influence sustainability of universal healthcare coverage by Kenya Medical Supplies Authority?

ii. How does supplier relationship management influence sustainability of universal healthcare coverage by Kenya Medical Supplies Authority?

iii. What is the influence of supplier negotiation on sustainability of universal healthcare coverage by Kenya Medical Supplies Authority?

iv. To what extent does strategic procurement planning influence sustainability of universal healthcare coverage by Kenya Medical Supplies Authority?

v. How does supplier development influence sustainability of universal healthcare coverage by Kenya Medical Supplies Authority?

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1.5 Scope of the Study

This study primarily examined the sustainability of universal healthcare coverage. The study focused on Kenya Medical Supplies Authority. The study will specifically focus on strategic procurement planning, strategic supplier selection, supplier relationship management, supplier negotiation and supplier development. Collect data from management staff in Kenya Medical Supplies Authority. The study was carried out over a period of three months.

2. LITERATURE REVIEW

2.1 Theoretical Review

A theoretical framework is a collection of interrelated ideas or a general set of assumptions based on theories or a reasoned set of prepositions, which are derived from and are supported by data or evidence and accounts for or explains phenomena (Kombo & Tromp, 2010). The study was pegged on agency theory, institutional theory and resource dependence theory.

2.2 Conceptual Framework

This is an interconnected set of ideas (theories) regarding how a particular phenomenon functions or is related to its parts. The framework serves as the basis for understanding the causal or correlational patterns of interconnections across events, ideas, observations, concepts, knowledge, interpretations and other components of experience (Marilla, 2010). The study's independent variables include strategic procurement planning, strategic supplier selection, supplier relationship management, supplier negotiation and supplier development while the dependent variable is the sustainability of universal healthcare coverage

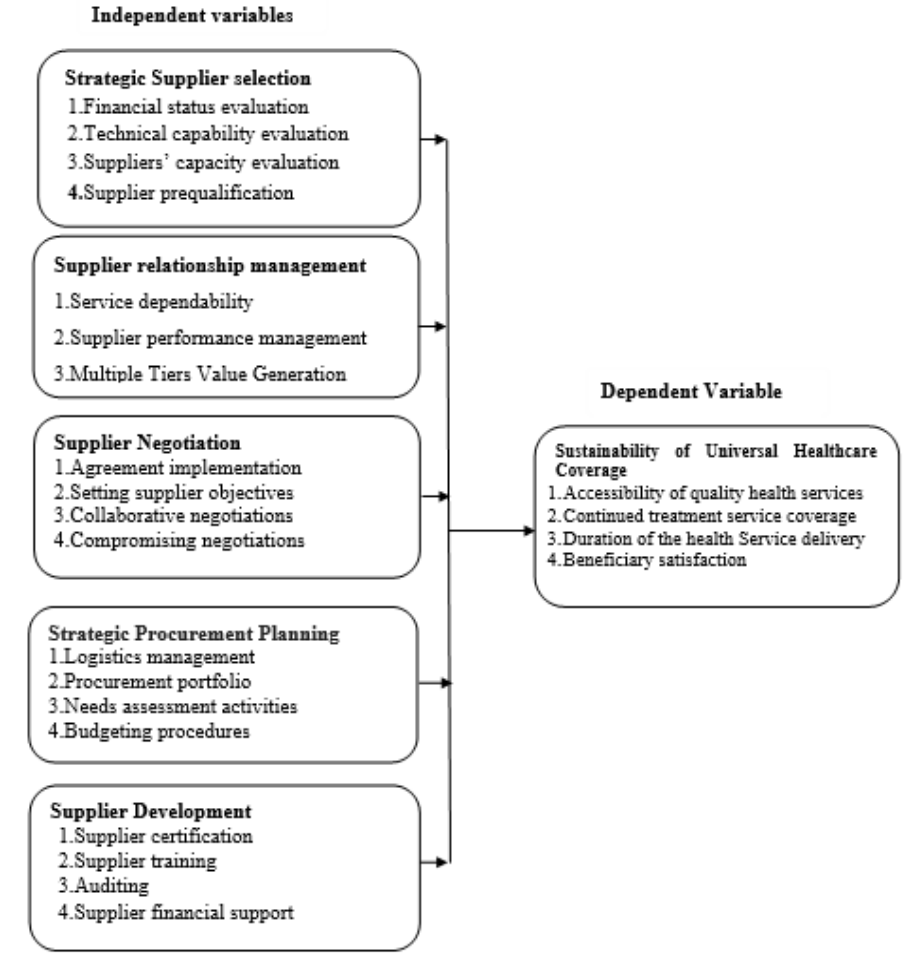

Figure 1: Conceptual Framework
Source: Author, (2019)

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3. RESEARCH METHODOLOGY

3.1 Introduction

This section contains outlines of the methodology and research design of the study. It explains the target population, sampling frame, sampling techniques, pilot testing, data collection procedures and instruments, data analysis and presentation.

3.2 Research Design

This study employed Cross sectional research design. This particular design is ideal since the research entailed collecting and comparing data from the phenomenon at the same time of study.

3.3 Target Population

The target population is defined as the entire group of persons, units or elements to which the researchers is interested in generalizing the conclusions. Therefore, the target population in study was 348 including management staff in Kenya Medical Supplies Authority as shown in Table 3.1.

Table 3.1: Target Population

Category	Target population	Percentage
Low level management staff	178	51.1
Mid-level management staff	97	27.9
Senior level management staff	73	21.0
Total	**348**	**100**

3.4 Sample and Sampling Frame

3.4.1 Sample

A sample is a representative portion of the population of interest which is randomly chosen (Wang, 2015). The sample size was determined at 95% confidence level and an error of 0.05 using the Nassiuma (2000) formula using a target population of 581 as shown

$$n = \frac{N(cv^2)}{Cv^2 + (N-1)e^2}$$

Where n= sample size

N = population (348)

Cv= Coefficient of variation (take 0.6)

e= tolerance of desired level of confidence (take 0.05) at 95% confidence level)

$$n = \frac{348(0.6^2)}{0.6^2 + (348-1)0.05^2} = 102.06 \text{ (Rounded off to 102)}$$

3.4.2 Sampling Frame

A sampling frame is the source material or device from which a sample is drawn. It is a list of all those within a population who can be sampled as shown in Table 3.2.

Table 3.2: Sampling Frame

Category	Target population	Ratio	Percentage
Low level management staff	73	0.293	22
Mid-level management staff	97	0.293	28
Senior level management staff	178	0.293	52
Total	**348**		**102**

3.5 Data Collection Procedure

The study will use primary data which was collected by use of questionnaires; use of questionnaires is based on the fact that they are suitable for a descriptive study given that they are easy to administer, ensure fast delivery and the respondent can answer at their convenience. The questionnaires were self- administered through drop and pick later method. The researcher will deliver the questionnaire and give the selected respondent a maximum of 3 days after which the researcher will collect the completed questionnaire for analysis. The researcher will also assure the participants that the information they give was treated with strict confidentiality. The researcher will then proceed to administer the questionnaires through the designated officers and co-ordinate with them to ensure respondents have adequate time to complete them.

3.6 Data Collection Instruments

Data collection instrument is used in research to refer to a device that specifies and objectifies the data collecting process, instruments are usually written and may be given directly to the subject to collect data or may provide objective description of the collection of certain types of data. Primary data was obtained using self-administered questionnaires. The questionnaire is made up of both open ended and closed ended questions. The open-ended questions were used so as to encourage the respondent to give an in-depth and felt response without feeling held back in illuminating of any information and the closed ended questions allow respondent to respond from limited options that had been stated. According to Wang (2015), the open ended or unstructured questions allow profound response from the respondents while the closed or structured questions are generally easier to evaluate. The questionnaires were used in an effort to conserve time and money as well as to facilitate an easier analysis as they are in immediate usable form.

3.7 Pilot Testing

Pilot study is the measurement of a dependent variable among subjects. Its purpose is to ensure that items in the instrument are stated clearly and have the same meaning to all respondents. Pilot testing of the research instruments was conducted where 25 questionnaires was administered to the pilot survey respondents who was chosen at random representing 20% of the sample size. The pilot tests checked to see if the length of questionnaire is acceptable and uncover any difficulties arising from the procedure and feedback was used make necessary adjustments.

3.7.1 Validity of Research Instruments

Validity implies that the findings of the study from the research instrument give a true representation of the phenomena claimed to be studied (Kothari, 2004). It ensures that the questions asked are understood by the respondent in the way the researcher intended them to be while at the same time the answer given by the respondent is understood by the researcher in the way it is intended (Saunders et al, 2009). Validity can either be external validity which means that the results obtained can be generalized to the population or internal validity which indicates the ability of the instrument to measure what it aims to measure. Osoro (2012) asserts that there are different types of validity including content validity which indicates how the measuring instrument adequately covers the topic of study, criterion-related validity which describes the extent to which the measures provide predictions in the study and construct validity which means the extent to which the questions measure the presence of those constructs that was intended to be measured.

3.7.2 Reliability of Research Instruments

Reliability is a measure of how consistent the results from a test are (Kombo &Tromp, 2010). Whenever an investigator measures a variable, he or she wants to be sure that the measurement provides dependable and consistent results. To measure the reliability of the data collection instruments an internal consistency technique using Cronbach's alpha was applied to the data gathered. To assess the consistency of the obtained data, and how consistent they are for each individual from one administration of an instrument to another as well as from one set of items to another, the study used Cronbach's alpha coefficient on data obtained from all the pilot test respondents (Magutu, 2013). The overall apha coefficient for the sample was set at a recommended value of at least 0.70. Results of the pilot study was compared with those obtained from pilot studies in previous studies. Reliability coefficient of the research instrument was assessed using Cronbach's alpha (α) which is computed as follows:

$A=k/k\text{-}1\times [1-\sum (S^2)/\sum S^2 sum]$

Where:

α= Cronbach's alpha

k = Number of responses

$\sum (S^2)$ = Variance of individual items summed up

$\sum S^2$sum = Variance of summed up scores

3.8 Data Processing, Analysis and Presentation

According to Saunders et al (2007), meanings derived from numbers, the collection results in numerical and standardized data and analysis performed through the usage of diagrams serves as the basis of quantitative data. However, qualitative data is based on meanings expressed through words, collection of results in non- standardized data requiring classification into categories and analysing conducted through the use of conceptualization.

Data was analysed using Statistical Package for Social Sciences (SPSS). All the questionnaires received was referenced and items in the questionnaire was coded to facilitate data entry. After data cleaning which entails checking for errors in entry, descriptive statistics such as frequencies, percentages, mean score and standard deviation was estimated for all the quantitative variables. Descriptive statistics was used because they enable the researcher to meaningfully describe distribution of scores or measurements using few indices (Rumsey, 2012). The qualitative data from the open-ended questions was analysed using conceptual content analysis. Based on Zina and OLeary (2010) recommendation on the analysis of qualitative data, collected data was organized, sorted out, coded and thematically analysed, searching for meaning, interpreting and drawing of conclusions on the basis of concepts.

Inferential data analysis was done using Pearson correlation coefficient and regression analysis (multiple regression analysis). Tanton (2015) indicated that in many statistical methods in particular parametric measures one presumes (at least approximate) normal distribution of the variables. Therefore, for the purposes of using parametric statistics such as Pearson correlation and regression analysis, normal distribution of variables is needed and hence the variables was internally standardized. Regression to assess the relationship between the components of strategic sourcing as independent variables on sustainability of universal healthcare coverage was done. The regression formula was presented below;

$Ys = \beta o + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + \varepsilon$

Where;

Ys = Sustainability of universal health care

βo = Constant

X_1 = Strategic supplier selection

X_2 = Supplier relationship management

X_3 = Supplier negotiation

X_4= Strategic procurement planning

X_5= Supplier development

ε is the error term.

4. DATA ANALYSIS, PRESENTATION AND INTERPRETATIONS

4.1 Introduction

This section presents an analysis, presentation, interpretation, and discussion of data. This chapter begins with a discussion of the respondents' response rate. The second section of this chapter provides respondent profiles. Tests of statistical assumptions and the use of Likert-type scales in data analysis are presented in the third section. The fourth section of this chapter focuses on the examination, presentation, interpretation, and discussion of the investigated relationships. Since a cross-sectional research design was employed in this study, descriptive, inferential, and qualitative statistical analyses were conducted concurrently in this chapter. Since qualitative data was collected through interviews, descriptive and inferential statistics were followed by qualitative analysis for each research objective. This section's discussions are based on the analysis and interpretation of descriptive, inferential, and qualitative information.

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4.2 Response Rate

Kenya Medical Supplies Authority employees were given a total of 240 questionnaires, of which 220 were returned. This represented a 91.67 percent response rate. The high response rate was attributed to the data collection procedure, in which the scholar personally distributed questionnaires and waited for respondents to complete them before selecting the completed questionnaires. This response rate indicated a willingness to participate in the study. This response rate was good and representative, and it met Mugenda and Mugenda (2003)'s criteria of a response rate of 50.0 percent being adequate for analysis, 60.0 percent being good, and 70.0 percent or more being excellent.

Table 4.1: Response Rate for respondents

Respondents	Frequency	Response Rate (%)
Actual respondents	220	91.67
Non response	20	8.33
Total	**240**	**100**

4.3 Pilot Study Results

4.3.1 Reliability Results

Cronbach's Alpha was used to test the reliability of the questionnaire. Since the research instrument yielded reliability coefficient of more than 0.7 on Sustainability of universal health care, Strategic supplier selection, Supplier relationship management, Supplier negotiation, Strategic procurement planning and Supplier development. It can be concluded that the research instrument was adequate for subsequent analysis.

Variables	Number of Items	Cronbach Alpha	Remarks
Sustainability of universal health care	5	0.86	Accepted
Strategic supplier selection	5	0.81	Accepted
Supplier relationship management	4	0.76	Accepted
Supplier negotiation	5	0.79	Accepted
Strategic procurement planning	5	0.83	Accepted
Supplier development	5	0.77	Accepted

4.3.2 Validity Results

Kaiser-Mayor-Oklin measures of sampling adequacy (KMO) and Bartlett's Test of Sphericity were applied to test whether the correlation between the study variables exist as shown in Table below . The Kaiser-Mayor-Oklin measures of sampling adequacy show the value of test statistic as 0.682and p-value <0.05. Bartlett's test of sphericity had a chi-square value of 764.888 p value of 0.000. Since the p value is less than 0.05 then it implies that there exist a relationship among the study variables therefore providing a ground for further statistical analysis to be conducted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.682
Bartlett's Test of Sphericity	Approx. Chi-Square	764.888
	Df	6
	Sig.	.000

4.4 Demographic Information

As part of the general information, the respondents were required to indicate their highest level of education and number of years worked in Kenya Medical Supplies Authority. This was important since it forms foundation under which the study can fairly adopt in coming up with conclusions.

4.4.1 Gender of Respondents

From the results of the study 51% of the respondents indicated that they were female while 49% indicated that they were male. This implies that most of the employees working at the Kenya medical supplies authority (KEMSA) were female.

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Gender of Respondents

Gender of Respondents		
Male	118	49%
Female	112	51%
Total	220	100%

4.4.2 Age of Respondents

The employees were also requested to indicate their age bracket and the results were as shown in Figure 4.2. From the findings, 20% of the respondents indicated that they were aged between 18 and 28 years, 55% were aged between 29and 39 years, 18% were aged between 40 and 50 years 5% were aged between 51 and 61 years, and 2% indicated that they were 61 years and above. This shows that most of the employees in KEMSA were aged between 29 and 39 years.

Age of Respondents		
18 -28 years	44	20%
29-39 years	121	55%
40- 50 years	37	18%
51-61 years	11	5%
61 years –above	5	2%

4.5 Descriptive Analysis for Study Variables on the Likert-Type Scale

The interpretation of research findings by use of Likert Scale determine the accuracy of results. In the self-administered questionnaire in this study, four of the sections comprised of items in a Likert type scale format using a scale of SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; and SA – Strongly Agree as recommended by Alan (2001). The items in the Likert Scale were affirmative statements. Each of the four sections of Likert type scale format had six items. Items were limited to six so as to increase the response rate. Frauke et al., (2008) argue that when a questionnaire is too lengthy, the response rate is low and the quality of the responses is compromised. In the study on equidistance of Likert-type scales and validation of inferential methods using experiments and simulations, Lantz (2013) indicates that Likert-type data are often assumed to be equidistant by applied researchers so that they can use parametric methods to analyse the data. Since the equidistance assumption is rarely tested, Lantz (2013) argues that the validity of parametric analyses of Likert-type data is often unclear and that the preferred statistical method to analyse Likert-type data depends on the nature of their non-equidistance as well as their skewness.

4.5.1 Effects of Strategic Supplier Selection

Strategic Supplier Selection	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	**Mean**	**Std. Dev.**
Strategic supplier selection influences sustainability of universal healthcare.	15.1	13.9	35.5	24.7	10.8	3.02	1.195
Supplier technical capability evaluation influences sustainability of universal healthcare.	13.5	8.8	10.8	43.8	24.1	3.54	1.306
Supplier capacity evaluation influences sustainability of universal healthcare.	5.2	23.9	19.1	20.7	31.1	3.49	1.291
Supplier prequalification influence sustainability of universal healthcare.	4.8	15.9	7.6	47.0	24.7	3.71	1.145
Stakeholder collaboration in strategic supplier selection as and when necessary, influences sustainability of universal healthcare.	4.8	29.9	5.2	41.8	18.3	3.39	1.223

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4.5.2 Supplier Relationship Management

Supplier Relationship Management	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
Supplier relationship management influences sustainability of universal healthcare.	2.0	2.8	11.6	30.7	53.0	4.30	0.922
Supplier service dependability influences sustainability of universal healthcare.	5.6	7.2	5.6	53.8	27.9	3.91	1.058
Supplier performance management influences sustainability of universal healthcare.	5.6	27.1	19.1	27.5	20.7	3.31	1.229
Multiple tiers value generation influences sustainability of universal healthcare.	10.4	2.8	19.1	41.8	25.9	3.70	1.188
Information sharing influences sustainability of universal healthcare.	21.9	-	29.1	39.0	10.0	3.15	1.284

4.5.3 Supplier Negotiation

Supplier Negotiation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
Supplier negotiation influences sustainability of universal healthcare	2.8	2.0	13.5	51.8	29.9	4.04	0.875
Agreements implementation influences the sustainability of universal healthcare	2.8	-	13.9	57.8	25.5	3.27	1.177
Setting supplier objectives influence the sustainability of universal healthcare	2.8	-	12.4	56.6	28.3	4.08	0.809
To what extent Collaborative negotiations influences sustainability of universal healthcare	2.8	8.0	35.9	47.8	5.60	3.45	0.830
Compromising negotiations influences sustainability of universal healthcare	10.4	14.3	26.7	37.5	11.2	3.25	1.150

4.5.4 Strategic Procurement Planning

Strategic Procurement Planning	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
Procurement planning influences sustainability of universal healthcare.	15.1	13.9	35.5	24.7	10.8	3.02	1.195
Need assessment of the needs when carrying out procurement planning influences sustainability of universal healthcare.	13.5	8.8	10.8	43.8	24.1	3.54	1.306
Budget availability influences sustainability of universal healthcare.	5.2	23.9	19.1	20.7	31.1	3.49	1.291
The scope of the goods to be procured in indicated in the planning process.	4.8	15.9	7.6	47.0	24.7	3.71	1.145
There is stakeholder collaboration as and when necessary, during procurement planning.	4.8	29.9	5.2	41.8	18.3	3.39	1.223

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4.5.5 Supplier Development

Supplier development	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
Supplier development influences sustainability of universal healthcare.	-	-	10.4	64.9	24.7	4.14	0.576
Supplier evaluation and registration influences sustainability of universal healthcare.	5.6	-	16.7	57.0	20.7	3.87	0.929
Holding supplier forums and conferences influences the sustainability of universal healthcare	2.0	13.1	21.5	49.4	13.9	3.60	0.951
Supplier audits influences the sustainability of universal healthcare.	2.8	-	12.4	40.6	44.2	4.24	0.874
Supplier financial support influences sustainability of universal healthcare.	2.8	-	22.7	47.0	27.5	3.96	0.869

4.5.6 Sustainability of Universal Healthcare Coverage

Sustainability of Universal Healthcare Coverage	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev.
Sustainability of universal healthcare coverage has influenced accessibility of quality healthcare services.	-	-	10.4	64.9	24.7	4.14	0.576
There has been an increase in treatment service coverage.	5.6	-	16.7	57.0	20.7	3.87	0.929
There has been an increase in customer satisfaction.	2.8	-	12.4	40.6	44.2	4.24	0.874
The organization has experienced increase in sales and supplier fill rate.	2.8	-	22.7	47.0	27.5	3.96	0.869

4.6 Inferential Statistics

Inferential statistical analysis involves objectively and quantitatively summarizing the data, determining which data patterns are significant, and making inferential statements about system performance. Inferential statistics provide the tools necessary to identify critical factors and to what degree specific test results can be generalized to the system as a whole. Inferential Statistics in this study involves correlation and regression statistics.

4.6.1 Correlation Analysis

		sustainability of universal healthcare coverage	strategic supplier selection	supplier relationship management	supplier negotiation	strategic procurement planning	supplier development
sustainability of universal healthcare coverage	Pearson Correlation	1	.653**	.608**	.514**	.521**	.510**
	Sig. (2-Tailed)	.000	.000	.000	.000	.000	.000
	N	220	220	220	220	220	220

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strategic supplier selection	Pearson Correlation	.653**	1	.433**	.403	.303	.410
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	220	220	220	220	220	220
supplier relationship management	Pearson Correlation	.608**	.433**	1	-.508	.305	.380
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	220	220	220	220	220	220
supplier negotiation	Pearson Correlation	.514**	.403	-.508	1	.280	.313
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	220	220	220	220	220	220
strategic procurement planning	Pearson Correlation	.521**	.303	.305	.280	1	.294
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	220	220	220	220	220	220
supplier development	Pearson Correlation	.510**	.410	.380	.313	.294	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	220	220	220	220	220	220

4.6.2 Regression Analysis

A powerful statistical method for examining the relationship between two or more variables of interest is regression analysis. While there are many different types of regression analysis, they all look at just how one or more independent variables affect a dependent variable. In this section the findings are discussed focusing on the main objectives of this study which sought to determine the influence of strategic sourcing on sustainability of universal healthcare coverage by Kenya Medical Supplies Authority. To achieve this, five strategic sourcing practices were majorly focused, namely between Sustainability of universal health care, Strategic supplier selection, Supplier relationship management, Supplier negotiation, Strategic procurement planning and Supplier development against the sustainability of universal healthcare coverage by Kenya Medical Supplies Authority. Overall, it was found that strategic sourcing practices had a significant positive relationship with the sustainability of universal healthcare coverage by Kenya Medical Supplies Authority measures thereby rejecting the null hypothesis that was tested that is, Strategic sourcing practices have no significant relationship on the sustainability of universal healthcare coverage by Kenya Medical Supplies Authority. To prove this a multiple linear regression model was adopted for testing the significance of the influence of the independent variables on the dependent variable. Therefore, the overall model for the study was: -

$$\mathbf{P = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon}$$

The overall model shows that 66.3% of the variation in sustainability of universal healthcare coverage can be jointly explained by Strategic supplier selection, Supplier relationship management, Supplier negotiation, Strategic procurement planning and Supplier development strategy jointly. The remaining percentage can be explained by other factors which are excluded from the model. Summary is as shown in Table below

Table 4.8 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.814[a]	0.663	.639	.66808	2.058

a. Predictors: (Constant), Strategic supplier selection, Supplier relationship management, Supplier negotiation, Strategic procurement planning and Supplier development

b. Dependent Variable: sustainability of universal healthcare coverage

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Analysis of variance

The ANOVA results in Table 4.35 shows that Strategic supplier selection, Supplier relationship management, Supplier negotiation, Strategic procurement planning and Supplier development all jointly have a significant influence on sustainability of universal healthcare coverage, and at least one of the slope coefficient is none zero.

Table 4.9 ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	73.510	5	14.702	16.89885	.000[b]
	Residual	186.122	214	.870		
	Total	259.632	219			
a. Dependent Variable: sustainability of universal healthcare coverage						
b. Predictors: (Constant), Strategic supplier selection, Supplier relationship management, Supplier negotiation, Strategic procurement planning and Supplier development						

Results in Table 4.36 shows that there was a positive and significant influence on strategic supplier selection and sustainability of universal healthcare coverage by Kenya Medical Supplies Authority (β = 1.06, p-value <0.05). This implies that a unit change in strategic supplier selection increases sustainability of universal healthcare coverage by Kenya Medical Supplies Authority by 1.06 units.

Secondly, there was a positive and significant influence on supplier relationship management and sustainability of universal healthcare coverage by Kenya Medical Supplies Authority (β = 1.17, p-value <0.05). This implies that a unit change in supplier relationship management increases sustainability of universal healthcare coverage by Kenya Medical Supplies Authority by 1.17 units.

Thirdly, there was a positive and significant influence on supplier negotiation and sustainability of universal healthcare coverage by Kenya Medical Supplies Authority (β = 0.41, p-value <0.05). This implies that a unit change in supplier negotiation increases sustainability of universal healthcare coverage by Kenya Medical Supplies Authority by 0.41 units

Fourthly, there was a positive and significant influence on strategic procurement planning and sustainability of universal healthcare coverage by Kenya Medical Supplies Authority (β = 0.73, p-value <0.05). This implies that a unit change in strategic procurement planning increases sustainability of universal healthcare coverage by Kenya Medical Supplies Authority by 0.73 units.

Finally, there was a positive and significant influence on Supplier development and sustainability of universal healthcare coverage by Kenya Medical Supplies Authority (β = 0.57, p-value <0.05). This implies that a unit change in Supplier development increases sustainability of universal healthcare coverage by Kenya Medical Supplies Authority by 0.57 units.

Table 4.10 Coefficients[a]

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.739	0.177		30.38	.000
	Strategic supplier selection	1.06	0.16	0.32	6.71	0.037
	Supplier relationship management	1.17	0.16	0.31	6.36	0.001
	Supplier negotiation	0.41	0.18	0.11	2.23	0.000
	Strategic procurement planning	0.73	0.16	0.22	4.42	0.000
	Supplier development	0.57	0.15	0.19	5.23	0.000
a. Dependent Variable: sustainability of universal healthcare coverage						

$$P = 4.739 + 1.06X_1 + 1.17X_2 + 0.41X_3 + 0.73X_4 + 0.57X_5 + \varepsilon$$

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5. SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Summary of Findings

The general objective of the study was to establish the determinants of strategic sourcing for sustainability of universal healthcare coverage at Kenya Medical Supplies Authority. The study was guided by the following specific objectives; (i) to establish the influence of strategic supplier selection on sustainability of universal healthcare coverage, (ii) to assess the influence of supplier relationship management on sustainability of universal healthcare coverage, (iii) examine the influence of supplier negotiation on sustainability of universal healthcare coverage, (iv) determine the influence of strategic procurement planning on sustainability of universal healthcare coverage and (v) to establish the influence of supplier development on sustainability of universal healthcare coverage by Kenya Medical Supplies Authority.

The study adopted the use of descriptive research using a sampling approach to give on to the nature of the study population and the relationship of the study variables. The total target population was 275 employees working at KEMSA. The study relied on primary data which was gathered using drop and pick method consisting of both closed and open-ended questions. The data was collected via the use of the questionnaires which was coded, entered and cleaned and computed by the use of Statistical Package for the Social Sciences version 25. The descriptive statistics was analyzed in form of the frequency, percentages, mean, and standard deviation.

5.2 Conclusions

5.2.1 Strategic Supplier Selection

In conclusion, strategic supplier selection positively and significantly influences sustainability of universal healthcare coverage and supply chain performance. Supplier selection is critical as organizations become more and more dependent on their suppliers; the capabilities of those suppliers serve as key resources in meeting organizations objectives. Suppliers have to be selected carefully, as they can have a very positive or a very adverse impact on the overall performance of the organization. Support from the top management, suppliers, internal and external stakeholders is extremely essential in the implementation of an effective strategic supplier selection process. Without the collaboration of all stakeholders, universal healthcare coverage is bound to fail. Not only does strategic supplier selection enhance sustainability of universal healthcare coverage but also enhances partnerships among the stakeholders and improves customer satisfaction.

5.2.2 Supplier Relationship Management

Findings show that effective supplier management can make the entire procurement process cost effective and time efficient. Actively developing supplier relations is important. Understanding your suppliers and utilizing supplier's mutual competition is an effective way of enhancing supplier relationship management development. Understanding the actions and processes of the suppliers is a basis to develop a relationship with them. It was also noted that partnerships with strategic suppliers plays a critical role in sustainability of universal healthcare. There is an improved customer service and satisfaction where both internal and external customers.

5.2.3 Supplier Negotiation

The results confirmed that supply chain decisions play a very important role in agreement with the criteria aligning with the KEMSA strategy. Successful management of the supply chain was the key to the long-term success of an organization. Suppliers' negotiation is a critical role in ensuring value for money and service delivery and need to occur regularly.

5.2.4 Strategic Procurement Planning

In conclusion, procurement planning positively and significantly influences supply chain performance. The implication was that support from the top management was extremely essential in the implementation as well as the supply chain management at KEMSA. Without the presence of senior managers, SCM was bound to fail. Not only do the senior management enhance SCM but they also enhance the relationships among the supply chain management practices and natural environment.

5.3 Recommendations

Foremost, the study found out that sustainability of universal healthcare coverage had been influenced to great extent by the sourcing strategies that KEMSA has adopted and relationship with suppliers. It therefore recommends that organizations should adopt and enhance strategic sourcing strategies in their supply chain management. This ensures

sustainability of universal healthcare coverage through provision of timely, cost effective, quality healthcare service and customer centred service delivery. Secondly, the study found that procurement planning practices had received mixed response which indicated lack of clarity on how procurement planning practices were determined. Further, the issues of supplier development appeared to be a hot topic of discussion as there are no clear guidelines on how this key aspect of strategic sourcing need be implemented and therefore the study recommends that organizations need to identity and invest in mechanisms of supplier development while remaining ethical in the practice.

5.4 Further Research Recommendations

Though this study had fulfilled its aim and objectives, and there are several areas for additional studies and empirical research, given the limitations of the research.

On a scope dimension, this study was primarily limited KEMSA in Kenya. Therefore, it may not be appropriate to generalize to the whole population for this reason, further empirical investigations in different regions and countries are needed. The methodology that has been chosen to achieve the research objectives was limited to questionnaires. As such, future research could build on this study by examining effects of strategic sourcing in different sectors and industries in both a qualitative and quantitative way. Also, a replication of this research on different industries would provide data for comparison.

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