

**SUPPLIER EVALUATION AND SUPPLY CHAIN PERFORMANCE OF
TELECOMMUNICATIONS FIRMS IN KENYA**

BY

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF DEGREE IN MASTER OF BUSINESS
ADMINISTRATION PURCHASING AND SUPPLY OPTION**

UNIVERSITY OF NAIROBI

2017

DECLARATION

This project is my original work and has not been presented in any award in an examining body or any other university.

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This research proposal has been submitted for examination with my approval as the university supervisor.

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DEDICATION

I dedicate this research project to my beloved husband Mr. Paul Kisini, my sister Cecilia, my parents Mr and Mrs. Muema, brothers, uncles, aunts and cousins who have been there for me as I pursued this course. To my friends who have been my rock and motivation as they supported me all through. I thank them all for their prayers, moral support and financial support.

ACKNOWLEDGEMENT

My special thanks go to The Almighty God for all he has done to me and given me an opportunity to come this far. I also wish to acknowledge the efforts of my family members for their moral support and encouragement throughout the entire research period. I also take this opportunity to salute the guidance and directions accorded to me by my supervisor Mr. Ernest Akelo for his guidance throughout my research for his wise counsel, encouragement, patience and innumerable suggestions that made this work come to completion.

LIST OF ABBREVIATIONS

- BSI:** British Standards Institution
- CAK:** Communication Authority of Kenya
- CIPS:** Chartered Institute Purchasing and Supplies
- ISO:** International Standard Organization
- SC:** Supply Chain
- SCM:** Supply Chain Management
- SMS:** Short Messages Services
- SRM:** Supplier Relationship Management

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ABSTRACT

Effectiveness in operations of a firm is highly attributed to adoption of supplier evaluation in the supply chain management processes of firms in Kenya. Telecommunication firms have become very essential in day to day life of the Kenyan population based on the fact that they have specialized services, fast internet service in the current digitalized economy. The study was aimed at establishing the effect of supplier evaluation on supply chain performance of telecommunication firms in Kenya. It was specifically aimed at establishing how quality, financial stability, supplier operational attributes, supplier information technology and environmental issues affect performance of telecommunication firms in Kenya. The study was guided by goal setting and transactional cost economic theories. The study used descriptive research design in its methodology since it focused on the supplier evaluation criteria on supply chain performance of telecommunication firms in Kenya. The study used primary data in the research. Data collection was effected by use of structured questionnaires. Procurement managers and the equivalent were the targeted population from the 30 telecommunication firms in Kenya. These questionnaires were issued through drop and pick method, coded, keyed, and analyzed using both descriptive and regression analysis. The regression model used had five variables; financial stability, quality, environmental issues, supplier operational attributes and supplier information technology were the dependent variables while residential supply chain performance was the independent variable. The study findings evidenced that all the supplier evaluation criteria had a positive impact on supply chain performance. In addition to that the findings evidenced that all the supplier evaluation criteria had been adopted in telecommunication firms I Kenya. .The major limitation of the study is that it was based on telecommunication firms only. Further studies need to e done on supplier evaluation criteria and supply chain performance in other firma rather than the telecommunication firms alone.

CHAPTER ONE: INTRODUCTION

1.1 Background

Over the past two decades, the world has increasingly become complex, uncertain and very competitive. Most companies have come up with strategies to cope up with these challenges in order for them to be competitive and relevant in the market. Supply chain contributes to the success of an organization especially when modern technologies for instance integration are used since it is an integral part of the business. However, this cannot be achieved without managing good relationships with the suppliers. Deficiencies in the supply chain pose threats to most organizations especially those who do not perceive the need for supplier relationship management (SRM) (Akintonye, 2000). Over the years, attention has been on the aspect of supply chain management and how suppliers are evaluated and selected effectively being major responsibilities of procurement personnel (Narasimhan et al., 2001). Quality, price, and on-time delivery are the various parameters used in the evaluation of suppliers (Ning Pi et al., 2005).

The various comparisons done by comparing performance of one firm to another is embedded in the concept of relative performance. SCM contributes to the general performance of the firm through contribution and gaining a competitive advantage. Firms have much focus on improving performance of the various systems which make up the supply chain in order to facilitate the achievement of competitive advantage over their competitors (Hughes & Wadd, 2012). Implementation of the right supply chain management practices facilitates achievement of operation and timeliness in operations (Groznik & Trkman, 2012).

Efficiency and effectiveness of a purchasing firm is highly affected by levels of performance of suppliers (Fredriksson et al., 2011). Product development process

involvement is a key reason to supplier selection process (Handfield et al., 2009). By so doing; it facilitates reduction in cycle times involved in product development. It facilitates reduction in delivery cycle times by suppliers if not other suppliers are sought who meet the criteria (Trevelen, 1987). Dwyer (1993) adds that securing value to customers is the major focus of the whole process of supplier evaluation. Vertical integration is usually disadvantaged due to limitations caused by inadequate resources and managerial constraints. Organizations that carry out supplier evaluation not only gain benefits of improved quality but also benefit from low continuous costs and process performance (Newman, 1988).

1.1.1 Supplier Evaluation

It involves all the procedures carried out to all suppliers with interest to supply their services and goods to the firm for the purposes of measuring and monitoring how they perform in order to enhance reduction of costs and lower costs in the long run (Gordon, 2008). Through the evaluation criteria, the buyer is able to identify, select and sign a contract with the suppliers. The supply chain can result to a firm that has a combination of the company's own capacities with those of the suppliers or parties in a relationship which is consistent with the business strategy. Suppliers need to be evaluated and selected based on the impact of their actions on competitive elements of the supply chain together with its impact on the organizational performance (Tracey & Tan, 2001).

For supplier evaluation to be a transparent process, it needs to be conducted using set criteria so as to ensure standardization in the process. The development of appropriate criteria that captures the interests of the buyer is one of the indicators of procurement performance (Nair, Jayaram & Das, 2015). Supply chain performance targets a number of aspects in the supplier evaluation criteria such as financial stability, cost, quality,

delivery, flexibility and innovation. Traditionally, supplier evaluation criteria has been pegged on only three factors namely cost/price, quality and delivery. Relatively, recent developments in supplier selection advocate the use of multiple criteria models in supplier evaluation (Murigi, 2014). Supplier evaluation criteria include financial ability, quality, production facilities, cost factors, production capacity among others (Lysons & Farrington, 2006).

The use of the financial stability criteria is seen to be a good indicator of supplier performance. According to Murigi (2014), supplier appraisal has a direct correlation to the overall performance of the procurement process with 57.1% of the performance of the procurement process being directly determined by the supplier evaluation and appraisal criteria. Financially stable suppliers pose lower business risks as they are likely to remain independent than their financially weak counterparts (Kipkorir, 2013). Other criteria such as the geographical proximity of the supplier are also important since increased geographical distance can sometimes bring other challenges associated with transportation logistics and foreign exchange fluctuations thereby posing setback to flexibility (Kavale & Mwikali, 2012).

The quality criterion is a helpful tool in supplier development. This is because supplier evaluation motivates suppliers to continuously improve their operations by raising efficiency and being more innovative (Hald & Ellegaard, 2011). The use of evaluation criteria helps both parties to realize causes of weak performance on the part of suppliers and this enables them to take remedial measures. The result is that suppliers are able to improve the metrics and this translates to better metrics to the buying institution, a sign of good procurement performance. A study by Chemoiywo (2014), on supply chain performance and public procurement procedures of State corporations found that State corporations had a poor adoption of public procurement principles and this resulted in

poor performance of the procurement process characterized by high costs and poor delivery.

Value to the end customer can be achieved by the firm in optimizing the supplier evaluation criteria internally and externally. With this, the companies are able to ensure that the customers are satisfied by the services offered. A high level of customer orientation results to fast and reliable delivery of high quality products or product thus ensuring competitive advantage (Chuah, 2001). While improving the business process, a business is able to stay competitive in today's market place (Hiatt, 1996).

1.1.2 Supply Chain Performance

The extent to which supply chain activities meet the end customer requirements, product availability, on-time delivery, and all the necessary inventory and capacity in the supply chain to deliver performance in a responsive manner is what is termed as supply chain performance (Kluwer, 2004). It is also categorized as a functional indicator and end-to-end supply chain indicator.

Lead-time performance, profit, waste elimination and delivery promptness are the four indicators that should be used so as to improve the effectiveness and efficiency of the supply chain (Peterson, 2009). Order planning metrics, supply link evaluation, measurements on customer service and satisfaction, production level measures and metrics, delivery link evaluation, and measurement of total logistic cost are the six measures of supply chain performance (Gunasekaran et al., 2004). Khare et al (2012), clearly asserts that it is crucial in providing enough assistance for performance improvement in search of supply chain excellence. It is a differentiator of the enterprise business function thus should be measured while assessing the suppliers. This helps to improve the supply chain and detect any problems. In the telecommunication sector,

performance can be measured with regards to the quality of service delivery, the different services offered by the company and the level of customer satisfaction.

SCOR (Plan, Source, Make, Deliver and Return) model is adopted by the supply chain as it is a very common measure of performance. Balanced scorecard is also used to measure performance in an organization. While applying the balance scorecard, the supply chain measurements can be made from the financial perspective, customer perspective, internal business perspective and learning perspective

1.1.3 Telecommunication Firms in Kenya

Telecommunication firms provide a wide range of communication based services such as, fixed voice, mobile services and short messaging service (SMS). The firms also provide broadband internet including data and internet. They also provide payment solutions to financial institutions and retailers, as well as award winning data storage and communication solutions to businesses across Kenya. Evolution and substance of the strategies to undertake these responsibilities are based on the foundation of firms' vision. (Thomas Saunders, 2004).

Many competitors are emerging as national and metropolitan fiber backbone networks and wireless access networks to deliver services to population centers across the country (CAK, 2015-2017). Fiber broadband connections have increased by 18% in 2016, since many fiber infrastructure sharing agreements have been made (CAK, 2017). The regulation of both traditional and online media is a responsibility of the Communications Authority of Kenya (CAK). The Kenyan mobile market has three major telecommunications operators namely; Safaricom, Airtel and Orange Kenya. The telecommunications market has grown rapidly over the past years with a number of subscribers growing from 2.8 million in 2004 to 20 million in 2012 (CAK, 2016).

According to the Communications Authority of Kenya (2017), the East African nation ended 2016 with a total of 38.98 million mobile subscribers, an increase of 3.4% from 37.71 million twelve months earlier. Safaricom accounted for the majority of total wireless customers (27.74 million) at end-December 2016, followed by Airtel Kenya with 6.85 million and Telkom Kenya with 2.89 million. Mobile data subscriptions rose from 23.79 million at the end of 2015 to 26.52 million twelve months later, with growth attributed to the increased affordability of Smartphone's and data bundles offered by service providers. Safaricom accounted for 67.5% of total mobile data subscriptions, followed by Airtel with 19.7%, Telkom with 7.1% and Fin serve Africa (Equitel) with 5.6%. The Communications Authority reported 158,185 fixed internet subscribers at December 2016 (an increase of 17.1% from 135,107 a year earlier), including 86,139 cable modem internet users, 39,255 fiber-optic connections, 29,724 fixed-wireless data accesses, and 584 satellite customer (CAK, 2015-2017).

According to the Communications Authority of Kenya, there are 30 telecommunications firms in Kenya which include; The firm Limited, Airtel Kenya Limited, Jamii Telecommunications Limited, Telkom Kenya Limited, MTN Business Kenya, Zuku Limited, Kenya Data Networks, Access Group Kenya, Jambo Pay, Seacom Limited, Xtranet Telecommunication, Bandwidth & Cloud services Limited among others

1.2 Research Problem

The telecommunication industry has undergone a change in engineering products such as mobile subscription, money transfer, and internet provision to become one of the most popular consumers of electronic products and services. Though an important industry, there are not many contributions in the wireless telecommunications products and

services that have been highlighted (Catalan, 2002). Few studies linking supply chain management and the telecommunication companies in Kenya do exist.

Pearson and Ellram (1995), in their study on use of supplier evaluation programs in both small and large firms in electronics industry. From the study, the findings evidenced that in terms of formal reviews, large firms evidenced a higher level of involvement as compared to the small firms. Purchasing, engineering, and production or operations were the most common factors used in supplier evaluation in the electronics (Pearson & Ellram, 1995).

Thairu et al, (2012) studied on adoption of supplier evaluation by traders in Dagoreti market in Kiambu Kenya. The study established that various factors including: locations of supplier, use of information technology, financial strength, quality among others were evaluation criteria used in supplier selection. The major limitation of the study was that it did not address the role of supplier evaluation in the supply chain performance.

Nyamwange (2001) noted that most studies on SCM in telecommunication sector are available in Europe and America. Ooko (2003) discussed the link between performance and incentive pay in the mobile phone industry in Kenya. Odhiambo (2003) focused on deterrents of customer satisfaction for mobile phone subscribers. These studies focus on financial performance in the telecommunication industry making an inherent assumption that successful SCM performance already exists in the industry. The studies failed to establish the various evaluation criteria to be used in selection of suppliers (Cox et al., 1995).

Okello et al, (2014) studied on the impact of supply chain management practices of the listed food and beverage manufacturing at Nairobi Securities Exchange. The study

established that various supplier evaluation criteria have a significant effect on performance of food and manufacturing firms in Nairobi.

From the studies above, it is evident that no study has been carried out on the supplier evaluation as one of the supply chain management practices that may affect performance of the telecommunication companies. Hence this study intends to establish whether this has an influence on the performance of the supply chain. It is on this basis that the study will seek to find out the role of supplier evaluation on supply chain performance in the telecommunication companies in Kenya. The study will seek to answer the following research questions: which evaluation criteria do the telecommunication companies use to evaluate their suppliers? What is the relationship between supplier evaluation and performance of the telecommunication companies in Kenya? What are the challenges faced by the telecommunication companies in implementing the supplier evaluation process?

1.3 Objectives of the Study

- i. To determine the supplier evaluation criteria used by the telecommunication firms in Kenya.
- ii. To determine the relationship between supplier evaluation criteria and supply chain performance in telecommunication firms in Kenya.
- iii. To find out the challenges of supplier evaluation in telecommunication firms in Kenya.

1.4 Value of the Study

The findings of the study are expected to be of importance to the wireless telecommunication companies in Kenya as it will provide them with valuable information on how to manage their supply chains. To the academicians and researchers, the study is expected to form a base for the development of SCM strategies for telecommunication companies in Kenya thus need for more research. To the government it will be of help so as to assist in the formulation of policies governing the telecommunication sector. The study will also be useful to the organizations, firms and institutions that are involved in the purchasing and tendering processes. The research will increase awareness of the strategic benefits that arise through sourcing and concentration on suppliers, it will make procurement entities to make adjustments on the supplier evaluation criteria. Also the stakeholders are assured of quality services and goods due to fair competition of suppliers.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

There is an overall disagreement of which supply chain model do apply in the telecommunication industry. Therefore, this chapter focuses on the supplier evaluation criteria used by the various telecommunication companies, the correlation between the supplier evaluation criteria and its effect to the supply chain performance of telecommunication companies and the challenges faced by the telecommunication companies in supplier evaluation process.

2.2 Theoretical Review

Various theories developed by various scholars related to the topic of study are what make up this section.

2.2.1 The Goal-Setting Theory

It was developed by Edwin Locke in the year 1968. It shows the correlation between goal setting and improvement in firm performance. An aim of a certain action taken by a person or what someone desires to achieve is what is termed as a goal (Locke & Latham, 2002). Conscious ways of establishing performance levels is what is referred to setting of goals. According to this theory, the source of motivation is the desire and intention to reach a goal is very important for the success of any firm (PSU, 2014). Here whenever the team members have a feeling that the set goals don't lead to improved performance, then they are more motivated to work harder and introduce new strategies (Locke & Latham, 2006). It asserts that superior performance in a firm is achieved through various personal goals set in the firm which has a long term effect of a better performance management system (Salaman et al., 2005).

The goal setting theory is related to this study in the aspects to do with supplier selection whereby the supplier selection team efforts will be geared towards achievement of the set objectives of the procurement process and supply chain management as a whole and due to these they will come up with realistic goals. Based on this theory, the purpose of the SC need to be achievable and realistic and form a baseline and a guide in the selection process. The set goals need to be specific and clear for the firm to achieve greater performance (Shahin & Mahbod, 2007).

2.2.2 Transaction Cost Economics Theory (TCE)

According to this theory, transactions are predetermined by production economics. As per this theory, firms are economic actors whereby they make use of the most efficient mechanism for transactions (Williamson, 1981). It offers a basis in evaluation of suppliers in the procurement of goods and services by firms (Lacity & Hirschheim, 1995).

TCE helps to determine the levels of successes of any supply chain in a firm. It is used in determining as to whether to select a certain supplier or not based on the major goal of cost saving in the organization. According to Lacity and Willcocks (1995), costs advantages over competitors are the underlying reasons to why firms carry out supplier evaluation. By carrying out supplier evaluation and selecting a firm which offers a lower cost than the other suppliers, firms are able to meet their customer requirements at low costs hence leading to overall performance of the firm in the market (Aubert, 2004).

2.3 Supplier Evaluation

Supplier evaluation entails all activities geared towards acquiring information be used in the analyzing and management of supplier relationships and supply situations (Dobos et

al., 2012). It entails putting into consideration various supplier performance features in the process of supplier selection (Narasimhan et al., 2001). This process is important since it results into improved performance of the firm. Supplier selection decision within the chosen area is the next step after the source has been determined. Suppliers may be appraised in many ways such as: financial stability, quality, cost factors and information technology (Lysons et al., 2008). These appraisal criteria are explained as follows:

2.3.1 Financial Stability

It is termed as a prescreening exercise through which every supplier needs to go through. It is done in the early stages of the process of supplier selection before other processes can follow (Handfield et. al., 2008). It is measured through aspects such as cash flow management; profitability among others which are evaluated through the various financial statements of the suppliers (CIPS, 2012). Poor financial status of a supplier poses a risk to the buyer since it may result to inability of the supplier in meeting the purchasing requirements as per the contract. Besides they lack adequate resources to invest in plant, equipment, or research which is a requirement for long-term performance improvements. It is also an indicator of problems (Handfield et al., 2008). Financial stability of a supplier facilitates the ability of suppliers to meet contract requirements (Lysons, 2008).

2.3.2 Quality

It is defined as totality of features and characteristics of a product or service that bear on its ability to satisfy given need as per the British American definition (CIPS, 2012). There need to be an assurance that the suppliers have a good system plus procedures in monitoring and managing its outputs in order to facilitate production of quality outputs. This should be done by ensuring the suppliers are incorporating a quality control system

which adheres to quality control system which ensures for the detection and correction of defects and quality assurance for prevention of defects (Lysons et al., 2008).

Supplier's quality management systems are very crucial in the supplier evaluation process. Association of Trade Standards, International Standards Organization (ISO) and British Standards Institution (BSI) are the various international quality standard bodies involved in ensuring suppliers adherence to quality (Lysons 2008). Good performance of suppliers in an organization is highly attributed to a successful organization (Gallego, 2011).

2.3.3 Environmental Issues

In appraising suppliers, the buyer needs to look at the suppliers' environmental policies and the ISO 14001 guidelines on environmental policies. In order to evade penalties due to lack of an adherence to environmental regulations by suppliers, the supplier selection process of the firm should check this during evaluation. This is due to high levels of awareness by customers on environmental issues (Handfield et al., 2008).

2.3.4 Supplier Operational Attributes

Success and survival in the changing business environment area is primarily determined by supplier operational factors. They are very crucial in determining whether to enter into a contract with suppliers or not (Folinas, 2013). In ascertaining issues to do with security issues there is need to have adequate knowledge of the supplier's location or country of origin to ensure efficient supply chain. Delays in the supply chain process are attributed to poor operational performance.

2.3.5 Information Technology

It is a necessity for competitiveness especially in the current world where there is high level of competition in the economy. Due to this fact the world has become a global village there is need of integration of information communication technology in the supply chain to facilitate competitiveness of the firm in the market and widen its market share (Blecken & Hellingrath, 2008). Information communication technology facilitates seamless sharing of information between suppliers and the buyers in the supply chain hence a supplier needs to have modern technology in place. Some firms decide to outsource provisions of information communication technology to cut on cost to a more competent provider (Kassim & Hussin 2010).

2.4 Supply Chain Performance

Performance measurement in the supply chain can be ascertained using operations order planning level which involves the lead time involved in placing orders. The extent to which supply chain's activities meet end customer need is what is termed as supply chain performance (Kwai et al., 2004). Supply chain performance is measured using various performance metrics. Performance is a management problem that needs to be understood fully. Strategic and operational goals can only be achieved if the management understands the performance targets. The measures evaluate the keenness and appropriateness of the asset utilization in generating accounting profits. It measures the efficiency and effectiveness of the management in resource allocation and growth (Chan, 2005). The specific performance measures to be used in this study in relation to telecommunication firms are: delivery time, return on investment, total logistics cost, and customer satisfaction.

Steward (1995) asserted that reducing the time taken between ordering for goods and receipt from customers enhances an increase level of general performance of a firm. On time delivery of goods and services to customers ensures customer satisfaction and long term performance of the firm. Customer satisfaction is another performance measure. A contented customer is vital in the contemporary world and this is a precondition for effectiveness of supply chain strategy. Customer service is measured by the levels of flexibility achieved by customers in the ways that services are delivered to them. By so doing they are able to meet customer specific requirements (Gunasekaran et al., 2004). The time spent in responding to customer enquiries is also a measure of customer service and performance. How fast the responses are issued to the respondents is a way that customers can be measured.

2.5 Relationship between Supplier Evaluation and Supply Chain Performance

There is a direct impact of quality on a firm's performance and long term performance. This is achieved by enhancing quality which has impact on the company's reputation based on the fact that they are positively related to overall performance of the firm. This is made possible through selection of appropriate suppliers (Weber et al., 1991). In order to establish a successful supply chain; there is need for cooperation between buyer and supplier. There is need for coordination and collaboration between buyer and suppliers to achieve this fully.

According to CIPS (2007), for firms to achieve competitive advantage, there is need for firms to carry out supplier evaluation effectively in strategic sourcing. There are improved levels of performance in firms due to higher levels of visibility attained through increased visibility, lower levels of risk and reduced order cycle times which can be attained through implementation of supplier evaluations in the organization. This is

achieved through leveraging of firm's supplier base and aligns various practices between themselves and their suppliers (Gordon, 2006). From various studies, there has been an increased improvement in the performance levels of over 20% for firms which appraise their suppliers on aspects like costs, quality among others.

Flexibility is one of the ways in which customer service on supply chain is well measured. Satisfaction of customers is very crucial in any firm. Flexibility in the supply chain facilitates the ability of firms to produce a variety of products that will ensure that individual customers are satisfied in the firm (Gunasekaran et al., 2004). Lead time between placement of an order and receipt of goods is also another measure of performance. Time taken in queuing for various services is also another aspect that is used in measuring performance in supply chain. A quick response to customer services is very important in ensuring that customers are well satisfied. Feedbacks from various customers of a firm are very important to in evaluating progresses of various aspects put in place by a firm.

Total logistics costs are used in evaluating how efficient and effective a supply chain is and its overall performance. The various costs involved in holding assets and return on investment, and information costs are what make up total logistics costs (Gunasekaran et al., 2004). Determination of costs that are associated with assets and turnover effects is a predetermining factor to the improvement of productivity. This is by establishing the turnover to affect the firm's total cash flow time by decreasing liquidity and increasing levels of inflation.

2.6 Challenges of Supplier Evaluation

Handfield et al (2002) noted uncertainty on how to define supplier performance evaluation and how to weigh the level of importance of different life-cycle performance

indicators is one of problems experienced in supplier evaluations. In addition, lack of knowhow or resources for possible verification and follow up of the performance evaluation of information and insufficient individual capacity is also another challenge faced.

According to Makabira and Waiganjo (2014), public institutions spend huge chunks of their budgets (up to 70 percent) in purchasing goods and services. In developing countries, the procurement function is very important in service delivery and accounts for a large component of total expenditures. For instance, Makabira and Waiganjo (2014) observed that public procurement accounts for 60 percent of public expenditure in Kenya. With the most amounts at stake, there is need for procurement performance so as to ensure that taxpayers get the value for their money. In attempts to reach this objective, procurement undertakes diverse measures ranging from supplier selection, supplier evaluation, setting of selection and evaluation criteria, staff training, among other measures with the intention of improving procurement performance.

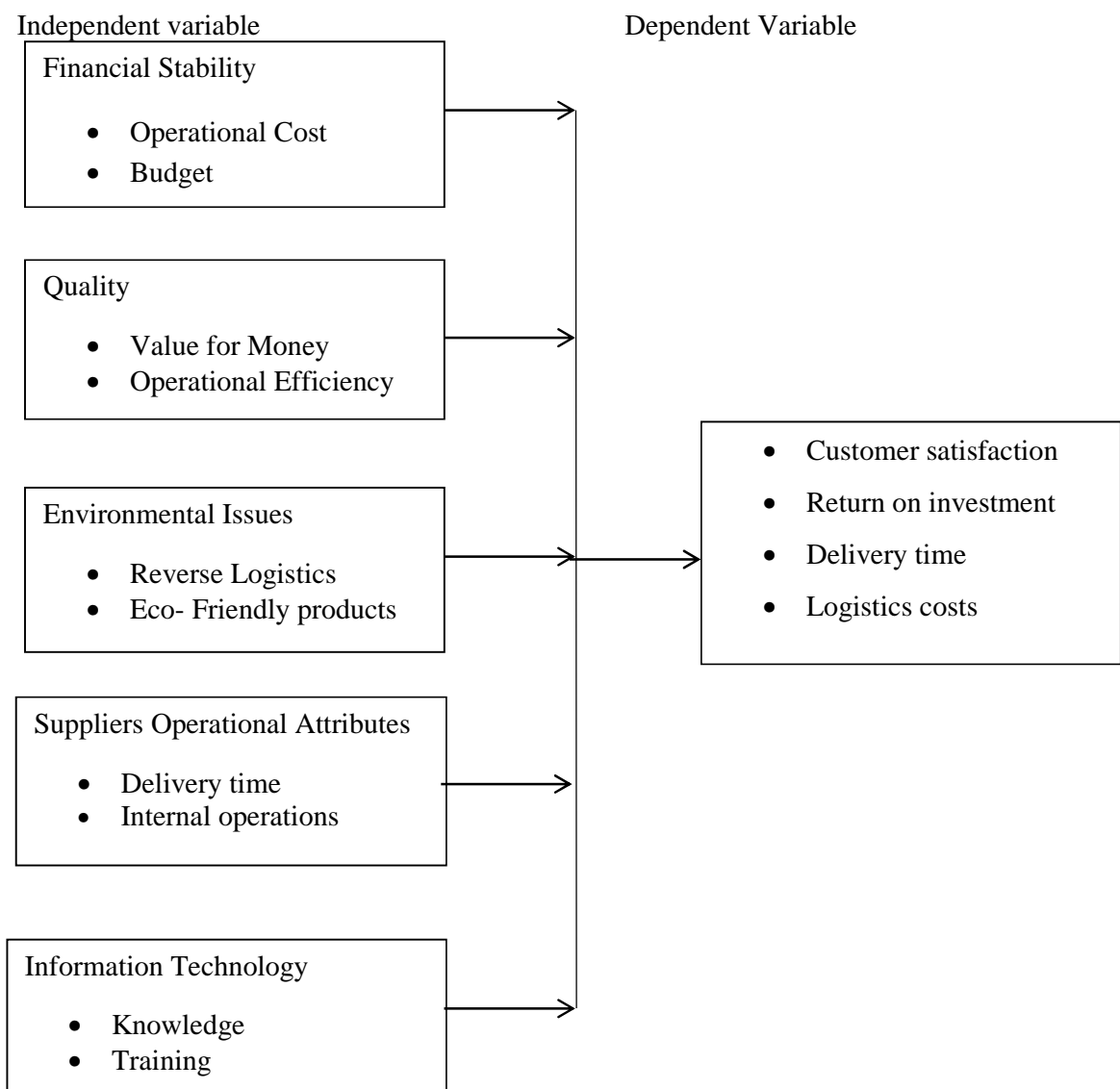
Global warming as an example of an environmental challenge demands high concern by firms in relation to how they manage their environment (Lin et al., 2001). For improvement in the environments to be achieved, there is need for organizations to contribute to their supply chain by stimulating improvements in their supplier's performance (Vachon & Klassen, 2006). Another challenge faced is that organizations need to come up with strategies that improve their supplier evaluation processes and how they are governed to their supply chain partners (Kytte & Ruggie, 2005). According to Walker (2008), he asserted that lack of managerial support and practical tools is also a challenge in the process of supplier evaluation. Bouwer et al., (2006) added that lack of regulations governing procurement processes in the private sector as a major challenge in

the implementation of supplier evaluation process and for following up the supplier performance.

2.7 Conceptual Framework

It gives the correlation between the dependent and the independent variable (Ravitch & Riggan, 2012).

Figure 2.1 Conceptual Framework



Source Author 2017

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

This chapter highlights various procedures used in conducting the study design and the techniques used in obtaining data and how the data was used to provide information. It also discusses the research design and methodology with specific emphasis on the nature and source of data, study population and sample method and also the data collection tool.

3.1 Research Design

The study used a descriptive research design. Descriptive research is a research design that is used in accurately describing the characteristics of the population under study and is concerned with the what concept (Kothari, 2014). The descriptive research design was chosen based on the research objectives and the fact that data and information could be obtained using the method without changing the environment (Deyrup, 2013). This study is aimed at establishing the relationship between SCM and performance within the telecommunication firms in Kenya.

3.2 Target Population

The target population of this study consisted of 30 telecommunication firms in Kenya (CAK, 2017). Since the population is relatively small, a census survey was done.

3.3 Data Collection

The data for the research was sourced mainly from both primary and secondary data. The primary data was collected through questionnaires administered to the respondents through “drop and pick” method. The questionnaire had four sections; Section A covered the demographics of the participants, Section B covered the evaluation criteria used by

the telecommunication companies, Section C dealt with the extent to which supplier evaluation affects the performance of the supply chain while Section D covered the challenges faced by the organization with regard to supplier selection and evaluation and relates to the third research objective. The respondents were the heads of department in procurement of the firms.

3.4 Data Analysis

Descriptive statistics such as means, percentages was used to establish the supplier's evaluation criteria. Inferential methods were employed to show the relationship between evaluation criteria and the supply chain performance. A regression model was developed to present the relationship while the challenges were analyzed using means and standard deviation. Supply chain performance of the company is the dependent variable while supplier evaluation criteria were the independent variables. The regression model was as follows:

$$Y = \quad + 1X_1 + 2X_2 + 3X_3 + 4X_4 + 5X_5 +$$

Where;

Y –Supply chain performance

- a constant, B1- B5– Coefficients

X1- Xn – Independent variables (criteria for evaluations of suppliers)

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter comprises of data analysis, findings, and interpretation. This section presented the findings on effect of supplier evaluation criteria on supply chain performance of telecommunication firms in Kenya. The study's purpose was to determine the supplier evaluation criteria used by the telecommunication firms in Kenya, to determine the relationship between supplier evaluation and supply chain performance and to find out the challenges of supplier evaluation in telecommunication firms in Kenya. The study target population was 30 telecommunication firms in Kenya, and the questionnaires were administered to the procurement managers and their equivalent in the procurement departments of various telecommunication firms in Kenya. The questionnaires were self-administered by the researcher and follow-ups through phone calls done.

4.2 Response Rate

30 questionnaires were issued and 21 questionnaires were properly filled and returned as shown in Table 4.1.

Table 4.1: Response Rate Distribution

Response	Frequency	Percentage
Returned	21	70%
Not returned	9	30%
Total	30	100%

The findings evidenced that 70% of the questionnaires administered were filled and used in the data analysis. 30% of the total questionnaires administered were not filled and returned. The various respondents were explained to about the high importance of the study information obtained and its importance to the researcher. This ensured a good response rate. A response rate of 50% is considered adequate, 60% good and above 70% rated very well (Mugenda & Mugenda, 2003). The response rate for this study, was 70% where out of 30 questionnaires that were distributed, the response rate was 21 firms. Hence this was considered efficient and will give out substantial information that can be used in generalization of the various aspects of the study being sought and hence the researcher proceeded for data analysis.

4.3 Biographic Information

The respondents were asked to show their gender, age, experience and education in order to fulfill the objectives of the study which were to get information on supplier evaluation in telecommunication firms in Kenya, its effects on performance and the challenges faced by telecommunication firms in Kenya in supplier evaluation. This information is as evidenced below.

4.3.1 Age

The findings on age distribution of the respondents are evidenced in the table 4.2 below.

Table 4.2: Age Distribution of the Respondents

Age	Frequency	Percentage
18-30 years	6	28.6%
31-40 years	4	19.0%
41-50 years	9	42.9%
Over 51 years	2	9.5%
Total	21	100%

From the findings, 28.6% of the respondents were aged between 18-30 years. 19% of the respondents were aged between 31-40 years, 42.9% of the respondents were aged between 41-50 years and 9.5% of the respondents were aged over 51 years. This was an indication that most of the employees in the telecommunication firms in Kenya were aged between 41-50 years besides these firms had an even distribution in terms of age in telecommunication firms in Kenya. This evidenced that the employees had adverse experience in their duties.

4.3.2 Gender

The findings on the gender of the respondents are as evidenced in table 4.3 below:

Table 4.3: Gender Distribution of the Respondents

Gender	Frequency	Percentage
Male	12	57.1%
Female	9	42.9%
Total	21	100%

From the responses, 57.1% of the respondents were male while 42.9% of the respondents were female. This shows that there is even distribution of staff in telecommunication firms in Kenya. Besides the results evidenced that more than 50% of the respondents were male thus there is equal gender balance in the staff of telecommunication firms in Kenya on gender basis.

4.3.3 Experience

The responses on work experience are as evidenced in the table below:

Table 4.4: Experience Distribution of the Respondents

Experience	Frequency	Percentage
0-4 years	5	23.8%
5-10 years	9	42.9%
11-20 years	6	28.6%
Above 20 years	1	4.7%
Total	21	100%

The findings on the experience of the respondents were that 23.8% of the respondents had 0-4 years' experience, 42.9% of the respondents had 5-10 years' experience, 28.6% of the respondents had 11-20 years' experience and 4.7% of the respondents had over ten years' experience. An indication that most of the respondents had adequate experience in their areas of work and could provide adequate information sought out in the study.

4.3.4 Education Level

The table below represents the findings on educational level:

Table 4.5: Education Level Distribution of the Respondents

Education level	Frequency	Percentage
Masters	5	23.8%
College	7	33.3%
Degree	9	42.9%
Total	21	100%

The findings evidenced that 42.9% of the respondents were degree holders, 23.8 % of the respondents had master’s education level, and 33.3% of the respondents had college education. An indication that most of the respondents had adverse education that enabled them to effectively carry out their duties and they had knowledge on the data sought on supplier evaluation criteria in telecommunication firms in Kenya.

4.4 Supplier Evaluation Process

To establish the supplier evaluation criteria used in telecommunication firms in Kenya was the first objective of the study was. To ascertain this, descriptive statics was carried out of all the data collected on the various supplier evaluation criteria. The level at which the various supplier evaluation criteria had been adopted in telecommunication firms in Kenya is as discussed below:

4.4.1 Financial Stability

The table below represents responses on the use of financial stability in supplier evaluation of telecommunication firms in Kenya.

Table 4.6: Financial Stability

Financial Stability	Mean	Std. Deviation
The evaluation of suppliers financial performance has enabled the organization to reduce its financial risk	3.4286	.67612
The firm always evaluates the suppliers turnover rates, cash flows, and financial standing before selection	3.8095	.74960
The firm usually evaluates position of the suppliers before engaging them	4.1905	.67964

The respondents were asked to show to what extent, financial stability affects supplier evaluation process. The findings evidenced that to a moderate extent, that financial stability is used as a factor in supplier evaluation in telecommunication firms in Kenya evidenced by mean values of above 3.0. From these findings it is an indication that telecommunication firms in Kenya use financial stability of suppliers in the process of supplier evaluation in procurement management processes

4.4.2 Quality

The table below shows response on to what extent, quality was used in the process of supplier evaluation in telecommunication firms in Kenya.

Table 4.7: Quality

Quality	Mean	Std. Deviation
The services offered by the suppliers meet the firm's goals and objectives in terms of quality	3.8095	.81358
Value for money is attained from the suppliers operations	4.4286	6.11205
The suppliers do offer products that are efficient and effective in the firm's operations	4.0476	.86465
The products offered by the supplier are of satisfaction to the customers in terms of quality	3.9048	.70034

The responses evidenced quality had been implemented as criteria in supplier evaluation in telecommunication firms in Kenya. This is evidenced by mean values of 3.8, 4.4, 4.0 and 3.9 hence quality is used to a great extent in supplier evaluation. From these findings it is an indication that telecommunication firms in Kenya use quality of products from various suppliers in the process of supplier evaluation in procurement management processes in order to ensure that the goods supplied to customers by the firms are of the right quality and standards.

4.4.3 Environmental Issues

The respondents were asked to show whether environmental issues are used in supplier evaluation.

Table 4.8: Environmental Issues

Environmental issues	Mean	Std. Deviation
The firm engages suppliers who use reverse logistics in their operations	3.6190	1.02353
The firm does evaluate suppliers who use eco-friendly products in their operations	3.4762	.51177
The firm has adhered to the ISO 14001 certification the environmental performance	3.8095	.67964

The respondents agreed to a moderate extent, that environmental issues had been used as criteria in supplier evaluation in telecommunication firms in Kenya evidenced by mean values of 3.6, 3.4, 3.8, and 3.7 an indication that to a large extent environmental issues is used in supplier evaluation in telecommunication firms. From these findings it is an indication that telecommunication firms in Kenya use environmental issues in the process of supplier evaluation in procurement management processes. This facilitates adherence to the regulations and provision of energy efficient products.

4.4.4 Supplier Operational Attributes

The table below represents the responses on what extent supplier operational attributes had been used as a supplier evaluation criterion in telecommunication firm in Kenya.

Table 4.9: Supplier Operational Attributes

Supplier Operational Attributes	Mean	Std. Deviation
The firm considers the suppliers' shipment and delivery accuracy in its supplier evaluation	4.0000	.83666
The firm considers internal processes while evaluating the supplier	3.6667	.79582
The firm puts into consideration the suppliers location during supplier evaluation	3.8571	.72703
The firm checks the suppliers supply chain experience in the evaluation process	3.4286	.87014

The respondents evidenced that supplier operational attributes had been used as criteria in supplier evaluating evidenced by mean values of: 4.0, 3.6, 3.8 and 3.4. An indication that it is used by the telecommunication firms to a great extent. From these findings it can be concluded that telecommunication firms in Kenya use supplier operational attributes in the process of supplier evaluation in procurement management processes. This facilitates efficiency and effectiveness of the whole procurement management process.

4.4.5 Supplier Information Technology

The extent to which suppliers' information technology had been used as criteria in telecommunication firms in Kenya was evaluated and the responses are as evidenced below:

Table 4.10: Supplier Information Technology

Supplier Information Technology	Mean	Std. Deviation
The company considers if the suppliers supply chains is integrated in terms of technology	3.9048	.62488
There is information sharing between the suppliers and the company	3.7619	.88909
The suppliers has kept up to date with the technology trends	3.8571	.72703
The suppliers are conversant with the technology of the company	4.0476	.80475

The responses evidenced that it has been implemented to a large extent, evidenced by mean values of 3.9, 3.7, 3.8 and 4.0 hence use of supplier technology had been adapted to a great extent in the telecommunication firms in Kenya. From these findings it is an indication that telecommunication firms in Kenya use supplier information technology in the process of supplier evaluation of procurement management processes. The firms ensure that the various suppliers chosen have adequate knowledge of use of IT and have IT systems in their operations.

4.5 Summary of Supplier Evaluation Criteria in Telecommunication Firms in Kenya

The table below represents the descriptive statistics of summary of the various criteria in telecommunication firms in Kenya. This is to ascertain which of the four supplier evaluation criteria had been adopted in telecommunication firms to a great extent and which was the least adopted.

Table 4.11: Sample t-test Summary of Supplier Evaluation Criteria

Evaluation Criteria	T	df	Sig	95% Confidence Interval of the Difference	
				Lower	Upper
Financial stability	23.238	20	.000	3.1208	4.7363
Quality	21.458	20	.000	3.4392	4.1799
Environmental issues	16.203	20	.000	3.1531	4.0850
Supplier information technology	21.909	20	.000	3.6192	4.3808
Supplier operational attributes	28.636	20	.000	3.6203	4.1892

The responses show that financial stability is used as a criteria in supplier evaluation, evidenced by a mean value of 4.4, quality showed a mean value of 3.8, environmental issues evidenced a mean value of 3.6, supplier information technology was evidenced by a mean value of 4.0 and supplier operational attributes evidenced a mean value of 3.6. From this findings it was established that all the supplier evaluation criteria considered in this study had been implemented in the telecommunication firms in Kenya. Based on the mean values greater than 3.0 and the significance levels were all 0.000 which is lower than the critical value of 0.05 at 95% confidence level.

From the above findings it was attained that all the supplier evaluation criteria had been adopted in telecommunication firms in Kenya. Besides financial stability was the most used due to high mean values which shows that financial stability is very key in supplier evaluation in telecommunication firms in Kenya. Environmental issues was least implemented, an indication that it was least in importance in supplier evaluation of telecommunication firms in Kenya.

4.6 Challenges Faced by Telecommunication Companies

The third aim of the study was to ascertain the challenges faced by telecommunication firms in the process of supplier evaluation.

Table 4.12: Challenges in Supplier Evaluation

Challenges	Mean	Std. Deviation
Corruption	4.9048	0.86449
Pressure of implementing PPOA and PPAD guidelines on procurement personnel	4.6048	0.73725
Lack of expertise in evaluation among supply chain staff	3.9524	0.11697
Lack of clear goals towards procurement	3.6190	0.02353
Cost of maintaining the procurement system	3.7619	0.76842
Lack of management support	3.5714	0.67612
Level of transparency	3.9524	0.86465

The responses evidenced that to a great extent all the challenges evidenced in this study affected telecommunication firms in Kenya. Corruption as a challenge evidenced the highest mean value of 4.9 an indication that corruption is the greatest challenge in supplier evaluation in telecommunication firms in Kenya. Pressure of implementing PPOA and PPAD guidelines on procurement personnel evidenced a mean value of 4.6, lack of expertise in evaluation among supply chain staff mean value of 3.9, lack of clear goals towards procurement evidenced by a mean value of 3.6, cost of maintaining the procurement system evidenced a mean value of 3.7 and level of transparency as a challenge evidenced a mean value of 3.9 an indication that to a large extent all the telecommunication firms had been experienced in the telecommunication firms in

Kenya. From these findings it is an indication that telecommunication firms in Kenya face a number of challenges in their urge to adopt supplier evaluation criteria in supplier evaluation. Hence there is need for top management to work with the employees and suppliers in these firms to ensure that all the challenges are addressed. This is in line with the goal setting theory where customers are given the ability to manage challenges facing them through various goals set to curb such challenges to improve general performance.

Table 4.13: Correlation matrix

Correlation analysis was carried out as follows:

		Performance				
Performance	Pearson Correlation	1				
	Sig. (2-tailed)					
Financial stability	Pearson Correlation	.810	1			
	Sig. (2-tailed)	.000				
Quality	Pearson Correlation	.614	-.386	1		
	Sig. (2-tailed)	.004	.084			
Environmental issues	Pearson Correlation	.808	.370	-.031	1	
	Sig. (2-tailed)	.000	.099	.892		
Supplier operational attributes	Pearson Correlation	.750	.377	.082	-.180	1
	Sig. (2-tailed)	.001	.092	.724	.434	
Supplier informational technology	Pearson Correlation	.574	-.003	.387	-.062	.338
	Sig. (2-tailed)	.002	.990	.083	.790	.134

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

The results revealed that financial stability, and supply chain performance were positively related ($r=0.810$, $p=0.000$). The results evidenced that quality and supply chain performance were related positively was significant ($r=0.614$, $p=0.004$). It was further established that environmental issues and supply chain performance were positively related and significant ($r=0.808$, $p=0.000$). Similarly, the results showed that supplier attributes and supply chain performance was positively related and significant ($r=0.750$, $p=0.001$). Finally the study established that there was a positive and significant correlation between supplier information technology and supply chain performance ($r=0.456$, $p=0.006$). This implies that an increase in any unit of the variables leads to an increase in supply chain performance. Besides the p-values were all less than 0.05 an indication that all the supplier evaluation criteria had a positive impact on performance of telecommunication firms in Kenya. From these findings it was concluded that quality, financial stability, environmental issues, supplier operational attributes and supplier information technology, all have a positive impact on performance as evidenced by positive correlation values, and hence management needs to put them in practice when carrying out supplier evaluation.

4.7 Supplier Evaluation and Performance of Telecommunication Firms in Kenya.

This section aimed at identifying the impact of category management practices on supply chain performance. The indicators that were scrutinized were those of increase in profits, quality of products, reduced risk of supplier failure, efficiency improvement in the supply chain performance, lower lead times, customer satisfaction, reliability in deliveries, on time deliveries and returns on investment.

Table 4.14: Supplier Evaluation and Supply Chain Performance

	Mean	Std. Deviation
Increase in profits	3.4286	.50709
High quality products	4.0000	.83666
Reduced risks of supplier failure	3.7619	.83095
Efficiency in the supply chain performance	3.8095	.81358
Lower lead times	3.8571	1.01419
Rate of customer satisfaction	4.0952	.76842
Reliability on delivery	4.0476	.74001
Return on investment	4.0000	.70711

Supplier evaluation criteria affect the quality of products in the firms. Reduced risk of supplier failure was evidenced by a mean value of 3.7, efficiency in supply chain performance was evidenced by a mean value of 3.80, lower lead times was attained to a moderate extent evidenced a mean value of 3.85, rate of consumer satisfaction was achieved by a mean value of 4.09, reliability on delivery was evidenced by a mean value of 4.04, on time delivery in telecommunication firms in Kenya was evidenced by a mean value of 4.04 and returns on investments was evidenced by a mean value of 4.00. From the findings it was an indication that supplier evaluation in telecommunication firms has impact on supply chain performance of telecommunication firms in Kenya. The findings were in agreement with those of O'Brien (2012) who argued that supplier evaluation not only brings together the procurement department, but the entire organization which leads

to improved supply chain performance processes, resources, activities and knowledge for a certain commodity.

4.8 Regression Analysis

The table below represents the findings of regression analysis:

Table 4.15: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
1	.840 ^a	.706	.607	.52424	.706	7.188	.001

Predictors: (Constant), financial stability, quality, supplier operational attributes, supplier information technology, environmental issues.

Financial stability, quality, supplier operational attributes, supplier information technology, and environmental issues which represent supplier evaluation criteria explain 70.6 % of the variations in the dependent variable which is supply chain performance. Besides the significance levels of 0.001 evidenced that the variables have a significant effect on performance since it is lower than the significance level of 0.05 at 95% confidence level.

4.9 Analysis of Variance (ANOVA)

The results are as evidenced in the table below:

Table 4.16: ANOVA

	Model	Sum of Squares	Df	Mean Square	F	Sig.
	Regression	9.878	5	1.976	7.188	.001 ^b
1	Residual	4.122	15	.275		
	Total	14.000	20			

a. Dependent Variable: Supply Chain Performance

b. Predictors: (Constant), financial stability, quality, supplier operational attributes, supplier information technology, environmental issues

The results show that the model was significant at $F(1.9, 0.275) = 7.188$. The results on the analysis of the variance (ANOVA) show that the overall model was statistically significant since the p-value was lower than the critical value. The coefficients of supplier evaluation against performance are as evidenced in the table below:

Table 4.17: Coefficients

Model	Unstandardized		Standardized	T	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	1.389	1.422		.977	.344
Financial stability	.800	.187	.166	1.097	.041
Quality	.794	.151	.772	5.266	.000
Environmental issues	.543	.121	.128	.863	.061
Supplier operational attributes	.765	.158	.041	.258	.003
Supplier information technology	.771	.217	.048	-.296	.004

a. Dependent Variable: Performance

b. Independent variables : (Constant), financial stability, quality, supplier operational attributes, supplier information technology, environmental issues

Based on the results of these study evidenced in the table above,

$Y = 0 + 1X_1 + 2X_2 + 3X_3 + 4X_4 + 5X_5 + 6X_6$ becomes;

$$Y = 1.389 + 0.8000X_1 + 0.794X_2 + 0.543X_3 + 0.765X_4 + 0.771X_5$$

X_1 =Financial stability

X_2 =quality

X_3 =Environmental issues

X_4 =supplier operational attributes

X5=supplier information technology

Regression of coefficients results in Table 4.17, financial stability was positively related to performance ($r=0.800$, $p=0.041$). An increase in the unit change in financial stability would lead to an increase in supply chain performance by 0.800 units. The results further showed: ($r=0.794$, $p=0.000$). These results imply that an increase in the unit change in quality would lead to an increase in the supply chain performance by 0.794 units. It was further established that environmental issues and supply chain performance were positively and insignificantly related ($r=0.534$, $p=0.081$). This meant that a unit change in promotion would lead to 0.534 units in supply chain performance, since the p-value was less than 0.05 at 95% confidence level.

Supplier operational attributes and supply chain performance were related positively and significantly ($r=0.765$, $p=0.028$) an indication that an increase in the supplier operational attributes by one unit results in an increase in the supply chain performance by 0.765. Supplier information technology and supply chain performance were related positively and significantly ($r=0.771$, $p=0.004$). This shows that an increase in the unit change in supplier information technology would lead to an increase in supply chain performance by 0.456. Hence all the supplier evaluation criteria in the study above affect supply chain performance.

This study corresponds to a study carried out by Thairu (2012), who established that quality, financial stability; environmental issues when adopted in the supplier evaluation have positive impact on performance.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter addressed the summary of the findings, the conclusions and the recommendations. This was carried out in conjunction with the objectives of the study. The study objectives was to ascertain the extent to which the supplier evaluation criteria had been used in telecommunication firms in Kenya, to establish the effect of supplier evaluation criteria on supply chain performance of telecommunication firms in Kenya and the challenges faced by telecommunication firms in the adoption of supplier evaluation criteria.

5.2 Summary of Findings

The findings of the study established that telecommunication firms in Kenya had adopted use of financial stability as a supplier evaluation criteria to a large extent evidenced by mean value of four point four, quality as a supplier evaluation criteria was used in the telecommunication firms to a moderate extent as evidenced by a mean value of three point eight, environmental issues was used by telecommunication firms to a moderate extent as evidenced by a mean value of three point six one. In addition supplier operational attributes were used to a large extent as evidenced by a mean value of four and finally supplier information technology had been adapted to a large extent as evidenced by a mean value of three point nine as per the descriptive statistics carried out by the respondents.

The second objective of this study was to establish the impact of supplier evaluation criteria on supply chain performance of telecommunication firms in Kenya. The results ascertained that supplier evaluation criteria had a positive impact on supply chain

performance. This was evidenced by a positive correlation between the supplier evaluation criteria and supply chain performance which was measured by profitability, quality, return on investment, lead times, reduced risks, on time deliveries and customer satisfaction. Besides the regression analysis findings evidenced that a substantial; 70.4% of the independent variable which was performance was well explained by the supplier evaluation criteria used in telecommunication firms in Kenya.

The third objective of this study was to find out the challenges that affect supplier evaluation in telecommunication firms in Kenya. The study findings evidenced that corruption, pressure of implementing PPOA guidelines, lack of expertise, lack management support, low level of transparency and lack of expertise in evaluation among supply chain staff are the major challenges facing telecommunication firms in Kenya as it was evidenced by mean values above three as per the descriptive statistics that were carried out by the telecommunication firms in Kenya in the process of supplier evaluation.

5.3 Conclusion

Effectiveness in operations of a firm is highly attributed to adoption of supplier evaluation in their supply chain management processes. Telecommunication firms in Kenya have become very essential in the day to day life of the Kenyan population based on the fact that they have specialized services, fast internet service in the current digitalized economy. Due to this fact, this aroused interest in ascertaining what is the idea behind this effectiveness in provision of services timely, with high levels of flexibility and enhancing high levels of customer satisfaction by telecommunication firms in Kenya. In conclusion, the study was aimed at establishing the extent to which supplier evaluation criteria had been used in the telecommunication firms in Kenya, their

impact on performance and the challenges faced in the implementation of supplier evaluation criterion in telecommunication firms in Kenya.

The findings evidenced that to a large extent, all the supplier evaluation criteria had been adopted in telecommunication firms in Kenya. This was evidenced by positive mean values above three indications that all the practices had been implemented to a large extent. The findings from the regression analysis evidenced that supplier evaluation criteria to a moderate extent have effect on supply chain performance in the telecommunication firms in Kenya. The results of the study ascertained a positive correlation between the various supplier evaluation criteria and performance of telecommunication firms in Kenya. The value of coefficient of Multiple Determination (R²) of 0.704 implying that up to seventy percent of the changes in the level of supply chain performance of the telecommunication firms in Kenya is attributed to by the various supplier evaluation criteria in Kenya. In addition to that the p-value evidenced a 0.000 value which was an indication that the various supplier evaluation criteria implemented in telecommunication firms in Kenya were statically significant based on the fact that the value is less than the 0.05 level at 95% confidence level.

5.4 Recommendations

From these study findings, it was established that most of the telecommunication firms in Kenya had implemented supplier evaluation criteria. However a few have not implemented the various supplier evaluation criteria used in this study, there is need for the management to incorporate the practices into their system in order to improve their performance and competitiveness.

The study recommends that organizational employees especially from the supply chain should be trained further on the various aspects of supplier evaluation and the need for

the same towards boosting overall firm performance of firms. In addition, senior managers of various telecommunication firms should lead all these trainings to ensure that there is cutting of costs through efficient procuring processes. The telecommunication firms should therefore invest resources on training of employees so as to boost their performance through supplier evaluation.

The study further recommends that management, suppliers either existing or intending to venture in the area of tendering should equip themselves with supplier evaluation if they are to improve their supply chain performance. This study found that supplier evaluation account for more than half of changes in supply chain performance and therefore there is need for various procurement managers and officers having adequate knowledge on supplier evaluation.

5.5 Limitations of the Study

The study findings were applicable to the telecommunication setting, specifically those in Kenya only. Therefore, the findings cannot be used as representative of all other telecommunication firms without considering telecommunication firms in Kenya. An inadequate resource such as finances was a challenge in this study leading to non-exhaustive exposition of majority of the supplier evaluation criteria applied by telecommunication firms. Similarly, there was constrained time resource. Reluctance of some respondents in giving out information on the study was also a challenge in the study due to the rules and regulations of the firms however the researcher communication to the respondents that the study was to be used for study purposes only.

Some of the respondents had very tight working schedules and were therefore not available for the interview. However, the researcher tried as much as possible and got 70% response rate which was considered an adequate representative sample of the target

population. Some of the respondents did not accept the questionnaires thus making it a challenge to effectively carry out the study.

5.6 Suggestions for Further Research

The study sought to determine the supplier evaluation criteria used in telecommunication firms in Kenya. Further studies need to be carried out on other sectors other than telecommunication firms in Kenya. In addition, future studies should consider other supplier evaluation criteria with an aim of establishing their effect on supply chain performance. This therefore means that a different industry apart from telecommunication firms should be considered in future studies.

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APPENDICES

Appendix 1: Questionnaire

Section A: Demographic

Gender;

- a) Male ----- []
b) Female ----- []

What is your age bracket?

- a) 18-30 years..... []
b) 31-40 years..... []
c) 41-50 years..... []
d) Over 51 years..... []

What is your highest level of education?

- a) PhD..... []
b) Masters..... []
c) Bachelors..... []
d) Diploma..... []
e) A-level..... []
f) O-level..... []
g) Others specify..... []

State the name of your organization.

.....

What is your job title in the organization?

.....

Indicate by ticking () in the relevant box below how long you have worked in your organization

- (0-4) years..... []
- (5-10) years..... []
- (11-20) years..... []
- Above 20 years..... []

Section B: Supplier Evaluation

Indicate the degree to which each of the following statements regarding the evaluation process that applies in your company. (Use the scale to tick the most appropriate response)

- 1) Strongly disagree 2) Disagree 3) Neutral 4) Agree 5) Strongly Agree

Financial Stability	1	2	3	4	5
The evaluation of suppliers financial performance has enabled the organization to reduce its financial risk					
The organization always evaluates the suppliers turnover rate, cash flows and financial standing before selection					
The organization always evaluates the financial position of the supplier before engaging them					

Quality	1	2	3	4	5
The services offered by the suppliers meet the company’s goals and objectives in terms of quality					
Value for money is attained from the suppliers operations					
The suppliers do offer products that are efficient and effective in the organization operations					

Products offered by the supplier are of satisfaction to the customers in terms of quality					
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Environmental Issues	1	2	3	4	5
The organization engages suppliers who use reverse logistics in their operations					
The company does evaluate suppliers who use eco-friendly products in their operation					
The organization has adhered to the ISO 14001 certification on the environmental performance					
The suppliers to the organization have to show compliance with particular regulations such as emissions caps, hazardous materials labeling, product specification and environment related documents					

Supplier Operational Attributes	1	2	3	4	5
The company considers the supplier's shipment and delivery accuracy in its suppliers' evaluation					
The company considers the supplier's internal processes while evaluating the supplier					
The company puts into consideration the supplier's location or country of origin during its supplier evaluation process					
The organization checks the supplier's supply chain experience the evaluation process					

Supplier Information Technology	1	2	3	4	5
The company considers if the suppliers supply chain is integrated in terms of technology					
There is information sharing between the suppliers and the company					
The supplier has kept up to date with technology trends					
The supplier is conversant with the technology of the company					

Section C: Supplier Evaluation and Supply Chain Performance

Indicate the degree to which each of the following statements regarding the evaluation process affects performance in your company. (Use the scale to tick the most appropriate response)

1) Strongly disagree 2) Disagree 3) Neutral 4) Agree 5) Strongly Agree

Relationship factors	1	2	3	4	5
Increase in profit margins					
High quality products					
Reduced risk of supplier failure					
Efficiency improvement in the supply chain performance					
Lower lead times					
Rate of customer satisfaction					
Reliability in delivery					
On time delivery					
Return on investment					

Section D: Challenges faced by the Telecommunication Companies

Indicate the degree to which each of the following statements regarding the evaluation process that applies in your company. (Use the scale to tick the most appropriate response)

- 1) Strongly disagree 2) Disagree 3) Neutral 4) Agree 5) Strongly Agree

Challenges	1	2	3	4	5
Corruption					
Pressure of implementing PPOA and PPDA guidelines on procurement personnel					
Lack of expertise in evaluation among supply chain staffs					
Lack of clear goals towards procurement					
Cost of maintaining the procurement system					
Lack of management support					
Level of transparency of suppliers					

Appendix II: List of Telecommunication Firms

Access Group Kenya

African Mobile Money

Africa Online

Airtel Kenya Limited

Airtel money

Bandwidth & Cloud services Limited

Equitel Kenya

Inter-Connect Ltd

Jambonet

Jambo Pay

Jamii Telecommunications Limited

Kenya Data Networks

Kenya Internet Exchange

Kenya Posts and Telecommunications Corporation

Mobitelea Ventures Limited

Money Gram

Mobicash

Mpesa

MTN Business Kenya

Pesa Pal

Safaricom

Seacom Limited

The Firm Limited

Telkom Kenya Limited

Tespok Kenya Internet exchange

Western Union

Yu Cash

Xtranet Telecommunication

Zuku limited

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