



**THE EFFECT OF SUPPLY MANAGEMENT PRACTICE ON
SUPPLY CHAIN PERFORMANCE: THE CASE OF ETHIOPIA
ELECTRIC UTILITY**

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REQUIREMENTS FOR THE DEGREE OF MASTERS OF ARTS
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Advisor

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DECLARATION

I Mesfin Asmamaw declare to the best of my ability that this report is as a result of my own efforts and entitled the effect of supply management Practice on Supply chain performance in EEU that all the sources that I have used or quoted have been indicated and acknowledged means of complete references.

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APPROVAL

This research was carried out under my supervision on the topic “The effect of supply management practices on the Supply chain Performance in EEU.” now hereby ready for submission to the academic Commission of Addis Ababa University, School Of Commerce.

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ABBREVIATIONS& ACRONYMS

EEU- Ethiopian Electric Utility

EPPA- Ethiopian Procurement and Property Administration Agency **report**

SRS- Simpler random sampling

SC- Supply chain

SCM- Supply chain management

SRM- Supplier Relationship management

SIDEN- supplier identification

SE- Supplier evaluation and selection



ABSTRACT

This research was set to examine the effect of supply management practices on supply chain performance in EEU. Managing suppliers is a large part of the job of supply chain professionals. Suppliers are key stakeholders in any organizations. Supply chain since they form a key component of the upstream supply chain partners. Most researchers have looked at supplier management in one dimension, that is, the focus has been on individual aspects of supply management, for example; supplier relations management, supplier evaluation and supplier selection. This study sought to determine the effect of supply management practices on supply chain performance of in EEU. A simple random sampling was used and questionnaires were used to obtain data to answer the following research questions; What is the effect of supply management practices on supply chain performance EEU ?; A total 205 EEU an employees were surveyed yielding a response rate of 92.94%. The study revealed that supply chain performance was significantly influenced by supplier relationship and supplier identification. The study recommended: protecting against inappropriate information offered by fraudulent suppliers. Supplier relationship management practices as well as setting structure to minimize influencer and unskilled interference during supplier identification and selection.

Key words: *supply chain performance, supplier relationship and supplier identification*



CHAPTER ONE

INTRODUCTION

This chapter begins with a brief background to the study, which leads to an introduction of the corporation, Ethiopia electric utility; statement of the Problem of the study, hypothesis, objective and significance of the study will then be presented.

1.1. Background of the Study

Electricity is nowadays a basic need in the world to provide; lighting, cooking, heating, cooling, education, health, information and communications in addition for all that electricity are in need. In order to use electric power for these services; equipment or appliances are necessary; as well as a supply of electricity. Due to increment of demand for better services in the public sector, there is in need to effectively manage the public supply chains. Interrelationships between the partners in the supply chain needs to be managed to enhance performance, enhance continuity and shared sense of value within the whole organization (McAdam, 2005). In today's highly competitive environment, supply chain performance is very vital for the survival of organizations because customers judge the performance of firms basing on their supply chain performance.

Ntayi and Eyaa, (2010) stipulated that, worldwide, national economies are faced with the challenge of improving their supply chains. Intensifying global competition, short life cycles of the products and increased customer expectations have forced the companies to invest and focus their attention on their supply chains. Together with continuous advances in communication and transportation technologies, this has motivated the continuous evolution of supply chain and of effective managing techniques. The success of the companies in the global environment depends highly on supply chain efficiency and its capabilities to provide value to the customers (Simchi, Kaminsky, and Levi, 2008).

This study is aimed at determining the effect of supply management practice on supply chain



performance in Ethiopian electric utility that to use aligned ways of a well-designed supplier management system can support professional purchasing and increase conformity and a systematic way of purchasing. It also has an effect on risk. Risk management is in close contact with supplier management because suppliers are also a source of risk (Östring, 2004).

All in all, supply management can be a great contributor to the success of an organization. You cannot manage what you cannot measure (Chan, 2005).

The organization supply chain unit is organized under the support process unit to supply the requested material to the user department. Proper designed supply chain system allows the supply chain unit to obtain the goods and services at effectively and efficiently. Thus, in this study are tires to evaluated and present Recommendation on the effect of supply management practice on supply chain performance at the Ethiopian electric utility. The study introduces the following parts in the following order, background of the study, statement of the problem, objectives of the study, significance of the study and organization of the study, delimitation of the study, and limitation of the study.

1.2 Statement of the Problem

There is a highly increasing pressure on organizations to find new ways to create and deliver value to customers to improve on their supply chain performance. Supply chain performance is influenced by contingent factors that lie beyond the area of strategy and structure. Poor Supply chain performance can reduce value as much as 8 to 10 percent, or even worse in time-sensitive environments where early market introduction is critical to success (Handfield, 2007). The inefficiency and lack of ability supply management practice in many public or private institutions contributes to loss of cash in million. For example in Kenya the inefficiency and ineptness of overall achievement of procurement performance in many state corporations contributes to loss of over Ksh.50 million annually (Tom, 2009)

The problem is the establishment of poor supply management such as lack of appropriate



supplier identification, supplier evaluation and supplier relationship management. In Ethiopia out of the total public spending, more than 60 percent goes to procuring public goods and services according to the Ethiopian Procurement and Property Administration Agency report (PPA, 2010). Based on the pilot survey; collected from different concerned managers and employees working in EEU; Ethiopian electric utility experience major challenges in the achievement of supply management practice and EEU performance measurement is mostly traditionally focused on financial measurement. EEU procurement units do not have specific standard for evaluation of competitive suppliers, According to this, the selected suppliers comes with different problems and disagreements at the time of final result evaluation process. Most of the stocks aren't available in the store when needed this kinds of problems occurs due to, poor organization strategy, demand management and SCM planning. In addition, transformers and other accessory installed in some part of the areas face an eruption problem repeatedly, due to the quality of material and equipment. This have an effect on exposed for extra cost in short period of time and unsatisfied the end customers from the services of EEU. The above foregoing background reveals that supply management and effective measures are required to keep Ethiopian electric utility supply chain performance. According to top procurement manager and employee in EEU said that there is no more research on the role of supply management strategy on Ethiopian electric utility. This is therefore a major knowledge gap on how Ethiopian electric utility must recognize increased supply chain performance through successful implementation of supplier management. This study tries to determine the effect of supply management practices on the supply chain performance in Ethiopian electric utility.

1.3 Hypotheses and Research Models

The objectives of this study will be fulfill by testing the three hypotheses stated in terms of declarative (positive) hypothesis

- H01. There is positive relationship between supplier identification practices and supply



chain performance in Ethiopian electric utility

- H02. There is positive relationship between supplier evaluation and selection practices and supply chain performance in Ethiopian electric utility
- H03. There is positive relationship between supplier relationship management practices and supply chain performance in Ethiopian electric utility

1.4 Objectives of the Study

1.4.1 General objective

The general objective of this study was to determine the supply management practice on supply chain performance, which can be applied in public sector organizations study in Ethiopian electric utility.

1.4.2 Specific objectives

- 1) To establish the effect of supplier identification practices on supply chain performance In Ethiopian electric utility.
- 2) To determine the effect of supplier evaluation and selection practices on supply chain performance In Ethiopian electric utility.
- 3) To assess the effect of supplier relationship management practices on supply chain performance In Ethiopian electric utility.

1.5 Significance of the Study

The investors and managers in the electric utility industry can benefit from insights into what it takes the industry to thrive and how to leverage the supply management practices in the country to their advantage.

In any organization there is always a need for improvement in every department and system. An effective supply chain performance practice plays a significant role towards enhancing



sustainability of organizational operations.

Organization that successfully manages supplier, provide effective implementation of procurement practices and helps minimizing procurement expenditure and sustaining organization operations continuously. Ethiopian electric utility has to effectively manage supplier to realize supply chain performance. It is important to shed greater light on how Ethiopian electric utility expenditure can be minimized through effective management of supplier practices.

Evaluating the supply chain management performance of EEU will benefit the organization by providing the basis to understand the system, provides information regarding the results of SC system efforts, which are used currently by supply chain members, influence behavior throughout the system and also in effect, performance measurement will give valuable information to organizational decision makers, and it will be used to improve the supply chain management practice. This therefore calls for a more comprehensive study to realize the effect of supplier management on supply chain performance in Ethiopian electric utility.

The study stands to benefit researcher, scholars and academicians interested in the subject of supply chain management and indeed contribute to the body of knowledge in the subject.

1.6 Scope of the Study

The study is undertaken Ethiopian electric utility head office in Addis Ababa. The study was involved all staff in EEU head office in Addis Ababa. The study specifically gathered data on the effect of supply identification, supplier evaluation and selection and supplier relation management on supply chain performance in Ethiopian electric utility head office in Addis Ababa.

1.7 Limitations of the Study

The challenges experienced included some of the respondents not filling or completing the questions and unexpected occurrences like people going on leave before completing the questionnaire. This was diminishing through constant reminder to the respondents during the period the questionnaires were administered to them. Research work requires available of



sufficient time, money and resources. This was major resource affecting the research work.

1.8 Organization of the Study

The study is organized in five chapters. The first chapter presents the introductory part of the study that comprises, among others, the background of the study, statement of the problem along with research questions and objectives of the proposed study.

Chapter two concerned with the review of the present literature related to the topic of inquiry; whereas the third chapter is concerned with methodology of the study, the fourth chapter data presentation, analysis and interpretation and the fifth chapter culminates the thesis by providing brief conclusions and relevant suggestions on the bases of the findings of the study.



CHAPTER TWO

RELATED LITERATURE REVIEW

2.1 Introduction

This chapter reviews relevant literature on the key areas that the study covers. This chapter presents the theoretical underpinning of the study. With a focus on the objectives and theoretical threshold of the study, it examines what various scholars and authors have presented about concept of supply chain management practices.

The theoretical framework introduces and describes the theory which explains why the research problem under study exists. A theoretical framework consists of concepts, together with their definitions, and existing theory/theories that are used for the particular study (Sekaran 2010).

2.1 Theoretical Framework

Theoretical frameworks are used to explain how the independent variables affect the dependent variable. The Study uses supply chain performance as dependent variable and supplier management elements as independent variables.

2.1.1 Identification of suppliers

Supplier identification is the supplier management process within procurement. Companies define their unique supplier identification needed for each supplier to become a supply partner. World class supply chains must continuously identify and qualify suppliers to maintain a healthy supply base to account for normal and unforeseen exists of preferred suppliers. High growth technology companies often find they must identify and qualify new suppliers in order to meet the needs of new technology components. Established companies with preferred supplier lists often find that continuous maintenance, removing under performing suppliers and added new suppliers is a key enabler for maintaining their supply base (Crane, 2016).



2.1.2 Supplier Selection

Some academic papers suggest that supplier selection is a part of the SRM process (Liker & Choi, 2004; Park et al., 2010). Supplier selection is very critical in order to achieve efficient manufacturing and supply chain management (Park et al., 2010). The important role of buyers here is to choose from the available suppliers the best ones that can provide the best combination of value, cost and functionality (Cox, 2004). As mentioned above, suppliers are first evaluated based on some standards, and then either being selected or rejected. Since this activity is highly important as it will set up the whole supplier management process later, there are some problems that buyers have to deal with. First is the single sourcing, where the goal is to meet the requirements with one supplier. The sourcing manager then needs to choose wisely the most suitable one. Another issue is the multiple sourcing, in which it is impossible to satisfy the needs with only one supplier; hence, it will require the sourcing manager to choose several ones and assign the supplies reasonably among them. (Park et al.2010). When selecting suppliers, companies need to take into consideration many criteria (Handfield et al., 2009). According to Leenders et al. (2006), those include financial health, technological capability, geographical location or quality system.

The decision of choosing suppliers also depends on the relative size advantages it has over the suppliers (Handfield et al., 2009). Based on Porter's Five Forces a company's competitive advantages are driven by suppliers and buyers' bargaining power. Therefore, according to Handfield et al. (2009), with regards to the size and the business need of the firms, buyers can decide to select suppliers when it can have relative size advantage or not. A buyer can have bigger impact if they represent a larger share of the supplier's business (Handfield et al., 2009). Moreover, (Lysons 2009) also indicate other issues to be considered when selecting suppliers such as domestic or international

suppliers, low-cost sourcing, competitors as suppliers and the social perceptions towards the



suppliers. Therefore, in order to choose the most suitable suppliers, companies need to set up clearly all these key criteria regarding their own business needs and situation.

Supplier evaluation in SRM is defined as ‘the process of quantifying the efficiency and effectiveness of supplier action’ (Neely et al, 1995). Neely et al. (1997) also state that supplier evaluation is designed to support the decision-making of the buying company about evaluating suppliers. Through that, it is possible for the company to implement or encourage changes in the evaluated supplying company’s behaviors (Neely et al., 1997). Furthermore, this activity is used as a means to make some effects on supplier action (Schmitz and Platts, 2003). Nonetheless, evaluation is a generic term that can refer to different individual activities in any process. Hald and Ellegaard (2011) have mentioned supplier evaluation in terms of a three-phase model, which mainly evaluates the performance of suppliers. In other words, their view on supplier evaluation is supplier performance evaluation and the results of the performance measurement will be reviewed and acted upon. Meanwhile, different researchers have thought of evaluation as the act of segmenting and classifying suppliers based on certain criteria (Olsen & Ellram, 1997; Araz & Ozkarahan, 2007). Therefore, not only the performance but also the segmentation of suppliers should be taken into account in supplier evaluation

2.1.3 Supplier Evaluation

Supplier evaluation is an essential task to manage successfully the relationships between suppliers and buyers. There are two phases when supplier evaluation is carried out. One can be seen in the selection task of the buying company. In this phase, evaluation plays a role in placing preference order for potential suppliers in order to select the better one.

Another phase where supplier evaluation appears is in the end of supplier development activity with the purpose of controlling and evaluating the buyer-supplier relationship. (Oriso et al., 2014).

2.1.4 Supplier Relationship Management

Supplier relationship management concerns the approach to managing a company’s interactions



with its suppliers of goods and services. The goal of SRM is to streamline and make more effective the processes between an enterprise and its suppliers - just as customer relationship management (CRM) is intended to streamline and make more effective the processes between an enterprise and its customers (Owuor and Onyango¹, 2015)

2.1.5 Supply chain performance

A supply chain (SC) is a network of organizations to perform a variety of processes and activities to generate value in the form of products and services to end consumers. Thus Supply Chain Performance (SCP) refers to the overall supply chain's activities in meeting end-customer requirements, including product availability, timely delivery, and all the required inventory and capacity in the supply chain to deliver that performance in a responsive manner. According to Kwai et al (2004) Performance of supply chains looks at it from three perspectives; delivery times, consumer satisfaction and cost reduction. A supply chain encompasses all the parties that involved, directly or indirectly, in fulfilling a customer request. The supply chain includes manufacturer, suppliers, transporters, warehouses, retailers and even customers themselves. Within each organization, such as a manufacturer, the supply chain includes all function involved in receiving and filling a customer request. These functions includes new product development, marketing, operation, distribution, finance, customer service and other function that related to serving customer request (Chopra &Meindl,2007).

2.1.6 Supply management practice on Supply chain performance

In Ethiopia electric utility supply chain is a significant role for the immediate availability of electric materials for the satisfaction of public utilities.

All in all, supplier management can be a great contributor to the success of a company. You cannot manage what you cannot measure (Chan, 2003). Therefore, it is easy to see that supplier evaluation and measurement are vital parts of supplier management. Evaluation can and should take place before anything is purchased from a supplier and continuously during the relationship.



Consequently, a good purchasing and supply chain can make an important contribution to a company's result and to be successful in nowadays competition conditions. Furthermore, continuous improvement programmers' in engineering, logistics and manufacturing management require improving relationships with suppliers that result in lead-time reductions, just-in-time deliveries and zero defects on components. These relationships shall also result in improved value to the end customer. Thus in Ethiopian electric utility supplier relationship management practice is greatly emphasizes to improve supply chain performance

2.2 Empirical Literature

This section reviews the existing empirical studies on the effect of supplier management practice on supply chain performance. This part covers relations studies on; effect of supplier identification on supply chain performance in EEU; effect of supplier selection and evaluation on supply chain performance in EEU; effect of supplier relation management on supply chain performance in EEU.

2.2.1 Supplier Relationship management

Many empirical studies have examined the relationship between supplier relationship and supply chain performance (Peters, 2004) argued that SRM managers should be responsible for managing no more than three supplier relationships, in order to devote sufficient time to each. Staff involved in SRM activities will have a good combination of commercial, technical and interpersonal skills.

Commercial acumen, market knowledge, analytical abilities and project management expertise are important. But "softer" skills around communication, listening, influencing and managing change are critical to developing strong and trusting working relations.

SRM managers understand their suppliers (Cooper, 2004) concurred that SRM includes both business practices and software and is part of the information flow component of supply chain management (SCM). SRM practices create a common frame of reference to enable effective



communication between an enterprise and suppliers who may use quite different business practices and terminology. As a result, SRM increases the efficiency of processes associated with acquiring goods and services, managing inventory, and processing materials in EEU.

2.2.2 Supplier Identification

According to (Stephen, 2009) survive in the intensely competitive global economy; it is often critically important to not only develop existing suppliers but also to discover new suppliers several factors make new suppliers important. First, there may exist new suppliers that are superior in some way to a firm's existing suppliers. For example, a new supplier may have developed a novel production technology or streamlined process which allows it to significantly reduce its production costs relative to predominate production technology or processes. Therefore identify and make a list of suppliers of the goods and/or services needed. If viable substitute products are available, suppliers of these products should be included on the list of potential suppliers for the supply chain base. Potential suppliers can include current suppliers, former suppliers, and new suppliers. Current and former suppliers are clear candidates, with whom the buyer has previous experience. The study thus support to supply chain performance in EEU the management/development of supplier is searching new/existing potential suppliers.

2.2.3 Supplier evaluation and Selection

Potential suppliers must be evaluated to determine their suitability. Supplier evaluation is an expensive and resource-intensive process that should be tailored to the importance of the purchase. Supplier evaluation is also an iterative process that eliminates unsuitable suppliers at each stage. Only qualified suppliers advance to more resource-intensive stages of the market research process.(Nicosia, 2006) Also, Technical evaluation and then selection of potential supplier provide deliver frequent and JIT supply of materials, improved quality, reliability, and delivery by suppliers (Langfield-Smith & Greenwood, 1998; Carr & Pearson, 1999). Furthermore, when the buying firm provides technical evaluation and selection process, the performance



dimensions of the buying firm will improve in terms of cost, quality, productivity, and design (Lee, 1985). To improve supply chain performance in EEU his Potential evaluated suppliers and selection of potential supplier provide deliver frequent and JIT supply of materials, improved quality, and reliability thus in the organization Potential suppliers must be evaluated and selected.

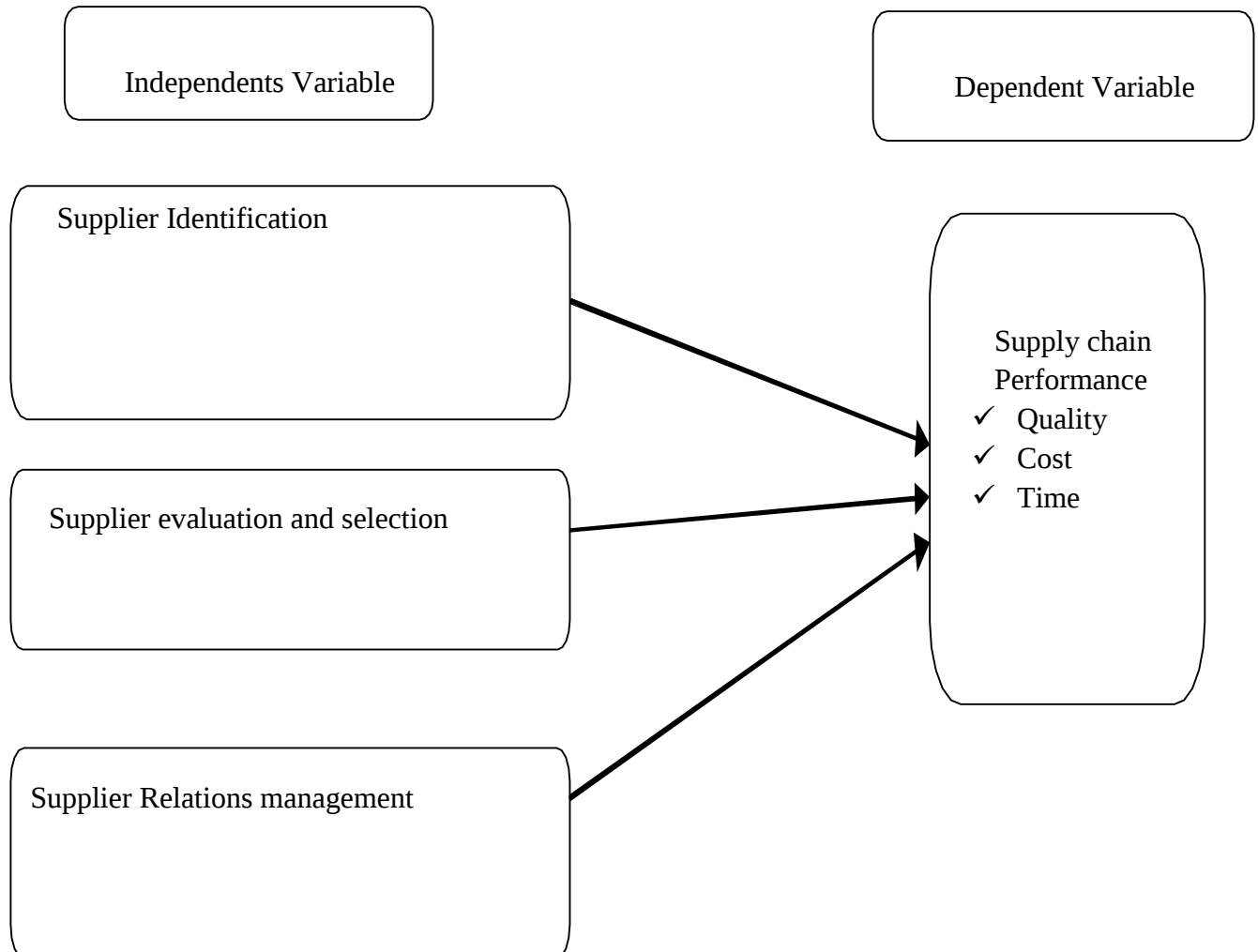
2.2.4 Supply chain Performance

(Biraori, 2015)The study findings indicate that supplier relationship management greatly determines the effectiveness of supply chain management practices in the ministry of finance in Kenya. Supplier collaboration and development enhances effectiveness in SCM in acquiring goods and services. The study noted that lack of a comprehensive approach for managing interactions with suppliers affected realization of increased effectiveness on supply chain processes between an organization and the suppliers. According to Diageo (2011) Kenya has firms which have achieved excellence in supply chain performance through implementation of effective supplier management programs.

All in all, supplier management can be a great contributor to the success of a company. You cannot manage what you cannot measure (Chan, 2003). Therefore, it is easy to see that supplier evaluation and measurement are vital parts of supplier management. Evaluation can and should take place before anything is purchased from a supplier and continuously during the relationship. Consequently, a good purchasing and supply chain can make an important contribution to a company's result and to be successful in nowadays competition conditions. Furthermore, continuous improvement programmers' in engineering, logistics and manufacturing management require improving relationships with suppliers that result in lead-time reductions, just-in-time deliveries and zero defects on components. These relationships shall also result in improved value to the end customer. Thus in Ethiopian electric utility supplier relationship management practice is greatly emphases to improve supply chain performance

2.3 Conceptual Framework

Research Models



2.4 Research Gaps

Despite the importance of public sector supplier management, the number of studies that have investigated the role of public authorities, in effective supply is still small. Studies by (Ghaith 2014) on network perspective draw much emphasis on the impact of supplier relationship management on competitive performance of manufacturing firms but fail to address the effect of supplier management practice adoption of supply chain performance in the manufacturing firms.



Studies by Transaction cost theory attempted to explain the integrative creation of supplier relationship management process In business organization s but does not offer practical solution on how business organization should embrace effective supplier management practices. on study Rough Set Theory in supplier selection found that application of poor sourcing strategies is a key impediment to implementation of effective procurement practices. These studies have not specifically addressed the

Key supply chain performance challenges hence developing a major knowledge gap on the effect of supplier management practice on supply chain performance.



CHAPTER THREE

RESEARCH METHODOGY

3. Introduction

The purpose of this study is to measuring performance of supply chain management on the Supply management practice. This chapter deals with the research design, target Population sample and sampling Procedures, data collection instruments, research ethics, Procedure for data collection, and data analysis techniques

3.1 Description of the Study Area

The study applies a positivism research philosophy. This paradigm was apply it was directly relate with the idea of objectivism. In this type of philosophical approach, researchers give their view point to evaluate social world with the help of objectivity in place of subjectivity (Cooper & Schindler, 2006). According to this philosophy, researchers are interest to collect general information and data from a large social sample instead of focusing details of research. According to this approach, researcher's own beliefs have no value to influence the research study. The positivism philosophical approach is mainly related with the observations and experiments to collect numeric data. Positivistic judge research in terms of its validity that is, extent to which their research tools actually do measure the underlying concept that they are supposed to measure. Positivists aim to work out theories that apply to people or societies broadly. Positivism helps to test the research question and examines the relationship between two or more variables (Sekeran&Bougie2010).

3.2 Research Approach

Quantitative and Qualitative approach is the researcher approach because of, the researcher using participant preservation within their answer of the questionnaire qualitative approach



and also using of large sample participants and focuses more on collecting user “data”, for describe answering the “what” of user behavior. Quantitative research is the systematic and scientific investigation of quantitative properties and phenomena and their relationships.

The objective of quantitative research is to develop and employ mathematical models, theories and hypotheses pertaining to natural phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expressions of an attribute. Quantitative and Qualitative approach employing to test the question from the questionnaires.

3.3 Research Design

According to Green and (Tull, 2009), a research design is the requirement of methods and procedures for acquiring the information need. It is the over-all operational pattern or framework of the project that stipulates what information is to be collected from which source by what procedures. Research design is important as it prepares proper framework within which the research work/activity. The study applies causal research design and descriptive research design. The descriptive design was used the study to gather quantitative and qualitative data that describe the nature and characteristics of the effect of supply management practices on supply chain performance in EEU.

According to (Sekeran 2003), descriptive research design is a type of design used to obtain information concerning the current status of the phenomena to describe "what exists" with respect to variables or conditions in a situation. (Kothari 2003) describes descriptive research as including surveys and fact-finding enquiries adding that the major purpose of descriptive research is description of the state of affairs as it exists.



3.4 Population and Sampling

Target Population

Population is the entire set of units for which the study data are to be used to make inferences (Kothari 2003). Target population defines those units for which the findings of the study are meant to be generalized from (Dempsey 2003). According to the human resource department, the target population comprises the EEU, the estimated number of above 500 employees in EEU Head office. The target respondents comprise supply chain staff, Finance staff, all Engineers, Supervisors, Chief Technician from each of the EEU in head office. The study population thus comprises the entire EEU Employees including managers in head office. The procurement staff are target; they are the ones involved in the execution of key procurement management decisions and hence have technical knowledge and skills on the effect of supply management practices on supply chain performance.

EEU are interesting to the study because they play a major role in the country's transmitting, distributing and selling of electricity nationwide; hence, they spend huge amounts of funds to procure electric line construction materials in supply chain functions.

3.5 Sample size and Sampling Technique

Simple random sampling is a sampling technique. Simple random sampling (SRS) is a method of selection of a sample comprising a number of sampling units out of the population. Every sampling unit has an equal chance of being chosen. The sample size is from the entire population, estimated number of above 500 employees; the sample size will be by the formula as follows. (Charles. 2007).

$$n = \frac{N}{1 + N(e^2)}, \frac{500}{1 + 500(0.05)^2} = \frac{500}{2.25} = 222$$



First write name of employee from list of payroll and put 500 names of employee's pieces of paper into a box. Select 222 piece of paper from the box without looking and bias, thus select the name of the respondents distributing the questioner.

3.6 Instruments and data collection Technique

The study collects both primary and secondary data. According to (Morris 2001), data collection technique is the process of gathering pieces of information that are necessary for research process. Primary data present the actual information obtains for the purpose of the research study. Data Collection instrument is a device use to collect data in an objective and a Systematic manner for the purpose of the research. Data collection instruments can be questionnaires, interviews, and available records. The main data collection instruments use to collect data including questionnaires containing open-ended and closed-ended questions with the quantitative section of the instrument utilizing an ordinal scale format and Rating scale question format. The ordinal format was select because this format yields equal-interval data, a fact that allows for the use of more powerful statistical tools to test research Variables. A questionnaire will prefer because according to (Dempsey2003) they are effective data collection instruments that allow respondents to give much of their opinions pertaining to the research problem. According to Kothari (2003), the information obtained from questionnaires is free from bias and researchers influence and thus accurate and valid data will gather. Interview also uses to compliment questionnaires data.

The questions was address by the questionnaires and interview with procurement manager, finance officer and warehouse manager of EEU guide sought the effect of supply management practice on supply chain performance. Primary data are gathering through the use of questioning method in the form of a semi structured questionnaire (open and closed-ended questions). Secondary data is collected through the review of both conceptual and



theoretical literature source from books, journals and internet on supplier management practices.

3.7 Research Ethics

Research ethics deals with the interaction between researcher and the people they study. To do this the study have a brief instruction and purpose of the research will be attach in the questionnaire and will also include a statement about respondents' identities being anonymous in order to protect their privacy and to ensure they will feel free to participate in the survey. To have a research is ethical respect the principle of basic research ethics.

3.8 Methods of Data analysis and Interpretation

This section deals with the presentation, analysis and interpretation of the effect of supply management practices on supply chain performance in EEU. Descriptive statistics method was applied to analyze quantitative data and data are score by calculate the percentages, mean' STD deviation and Variance. This was using Statistical Package for Social Sciences (SPSS) computer software. SPSS is consider appropriate at the same time as it allows following clear set of quantitative data analysis procedures that leads to increase data validity and reliability and demonstrates the relationship between the research variables. SPSS also assists in producing frequency tables for descriptive analysis. Inferential statistics was applied through correlation analysis and the use of multiple regression analysis. The correlation analysis is used to establish with statistical significance, the nature of the existing relationship between the dependent variable and the in dependent variables. There aggression an analysis is used to determine with statistical significance, the influence or effect that the independent variables have in the supply chain performance.

The multiple regression models will be applied in the form



$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + e$$

Where; β_0 = Constant

Y= Supply Chain Performance

X1= Supplier Identification

X2=Supplier Evaluation and Selection

X3=Supplier relationship management

β_i = Coefficients of regression for the independent variables X_i (for $i = 1, 2, 3, 4, 5$)

e. = error term

The regression analysis test the variation of the dependent variable explains by the variation in the independent variables by calculation of the R² and adjusted R² statistics. ANOVA for

Regression will be also use to determine the goodness of fit of the produce. Correlation analysis and linear regression were applied.

3.9 Reliability and validity tests

The study adopted effect analysis in order to reduce the number of indicators or effects under each research variable and retain the indicators capable of explaining the effect of supply management practices on supply chain performance in Ethiopian electric utility. The retained factors had factor loading values of above 0.7 and were used for further analysis. Hair, Tatham, Anderson and Black (1998) recommend use of factors with factor loadings of above 0.4. Stevens (1992) suggests using a cut-off of factors with factor loading above 0.4, irrespective of sample size, for interpretative purposes. This also supports suggestion by Tabachnick and Fidell (2007) using more stringent cut-offs going from 0.32 (poor), 0.45 (fair), 0.55 (good), 0.63 (very good) or 0.71 (excellent). To measure the reliability of the gathered data Cronbach's alpha was applied. Cronbach's alpha is a coefficient of reliability that gives an unbiased estimate of data generalizability (Zinbarg 2005).



An alpha coefficient of 0.80 or higher indicates that the gathered data are reliable and are relatively high internal consistency and can be generalized to reflect opinions of all respondents in the target population (Zinbarg 2005).

Table: 3.1 Reliability Analysis Results

Indicators	No of Items	Cro bach's Alpha
Identification of supplier	5	0.733
Supplier Evaluation and selection	5	0.759
Supplier Relationship Management	5	0.801
Supply Chain Performance	5	0.8

Source: Own survey, 2019



CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1. Introduction

The study employed different statistical techniques aided by SPSS to determine the effect of supplier management practices on the supply chain performance in Ethiopian electric utility.

This chapter describes the analysis of data followed by a discussion of the research findings.

The findings relate to the research hypothesis that guided the study. The chapter begins with the analysis of the response rate and then explains factor analysis and reliability techniques adopted by the study. Factor analysis was adopted in order to reduce the number of indicators or factors under each research variable and retain the indicators capable of explaining the effect of supplier management practices on the supply chain performance in Ethiopian electric utility. Reliability analysis was carried out using Cronbach alpha which is a coefficient of reliability that gives an unbiased estimate of data generalize ability.

4.2. Response Rate

The study sampled consisted of 222 Employees. Out of the 222 employees the questionnaires were filled and returned by 205 employees the individual respondents translating to a response rate of 92.34%. The high response rate of 92.34% facilitated gathering sufficient data that could be generalized to determine the effect of supply management practices on the supply chain performance in Ethiopian electric utility. This was in line with Orodho (2009) that a response rate above 50% contributes towards gathering of sufficient data that could be generalized to represent the opinions of respondents about the study problem in the target population.

These response rates are presented on table 4.1below.



Table: 4. 1 Individual Response Rate

	Sampled	Responded	Response Rate
EEU	222	205	92.34%

Source: Own survey, 2019

4.3 Multicollinearity

Further to the reliability tests a multicollinearity test was done to ensure that the accepted independent variables did not explained by the other independent variable. A situation in which there is a high degree of relationship between independent variables is said to be a problem of multi-collinearity which results into large standard errors of the coefficients associated with the affected variables. From table 4.6, two values are given the tolerance and variance inflation factor. If the Tolerance value is very small/less than .10/, it indicates that the multiple correlation with other variable is high multi collinearity occur. The other value given is VIF which is just the inverse of the Tolerance value (1 divided by tolerance) VIF value above 10 would be a concern here, indicating multi collinearity. In the table below the tolerance value for each independent variable are 0.435, 0.125 and 0.128 which is not less than 0.10 and VIF value which is 2.300, 7.983 and 7.819 which is below 10 the accepted variables were therefore determined not to exhibit multi collinearity. Since the accepted variables did not exhibit multi collinearity, they were fit to be used for analysis.

Table: 4.2. Collinearity Statistics

Variable	Tolerance	VIF
Identification of Supplier	0.435	2.300
Supplier Evaluation And Selection	0.125	7.983
Supplier relationship	0.128	7.819

Source: Own survey, 2019



4.4. Descriptive Statistics

Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data. The study used descriptive statistics to present the frequency and the percentages of the gathered data and the mean and

Standard deviation is shown to indicate the rank in which factors are influence supply chain performance in EEU.

Background Information

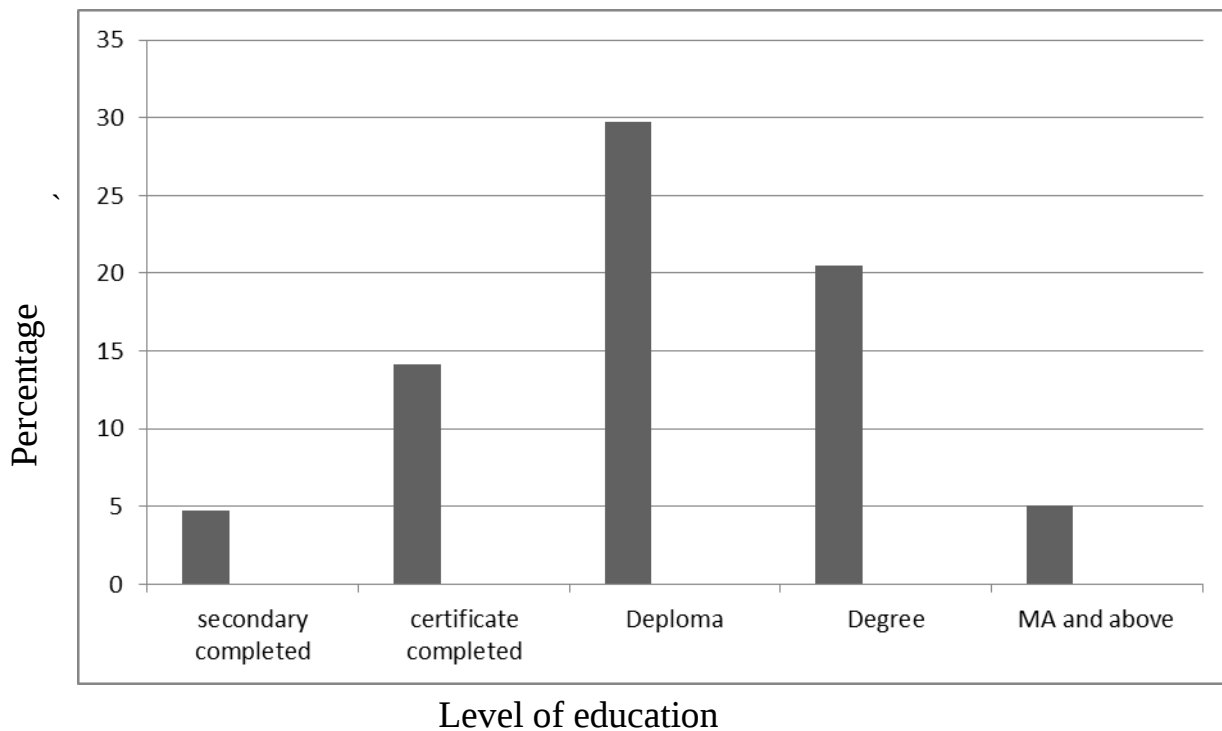
This part presents personal information of the respondents who participated in the research study

4.4.1. Education Level of the Respondents

It was important to establish the education level held by the study respondents in order to find out if they were set with relevant knowledge and skills on supply chain functions. As presented in table figure 4.1, majority (29.7%) had Diploma level, 20.5% had Degree level, 14.1% had certificate level, 5.1% had MA and above level and 4.7% had Secondary completed level.

These findings implied that most of the respondents were qualified to understand the nature of the study problem. This agrees with Joppe (2000) that during research process, respondents with technical knowledge on the study problem assist in gathering reliable and accurate data on the problem under investigation. This demonstrated that most of the organization employees were qualified professionals with technical knowledge and skills on the study problem and thus provided the study with reliable information on the effect of supplier management practices on the supply chain performance in Ethiopian electric utility.

Figure 4.1 Education Level of the respondents



Source: Own survey, 2019

4.4.2. Working Experience of the Respondents

The study determined the working experience held by the respondents in order to find out the extent to which their responses could be relied upon to make conclusions on the study problem using their working experience. From the findings in table 4.3, (36.6%) indicated to have a working experience of 6-10 years, 32.2% had a working experience of 11-15 years, 10.7 % had a working experience of ≤ 5 years and 20.5 % had a working experience of 16 years and above. These findings that respondents with a high working experience assist in providing reliable data on the study problem since they have technical experience on the problem being investigated by the study. This indicates that 50% of the respondents had worked in the organization for a long time and thus understood technical issues on the effect of supplier management practices on the supply chain performance in Ethiopian electric utility in Head Office.



Table: 4.3. Working experience of the respondents

Working Experience	Frequency	Percent
<=5 years	22	10.7
6-10 years	75	36.6
11-15 years	66	32.2
16 years and above	45	20.5
Total	205	100.00

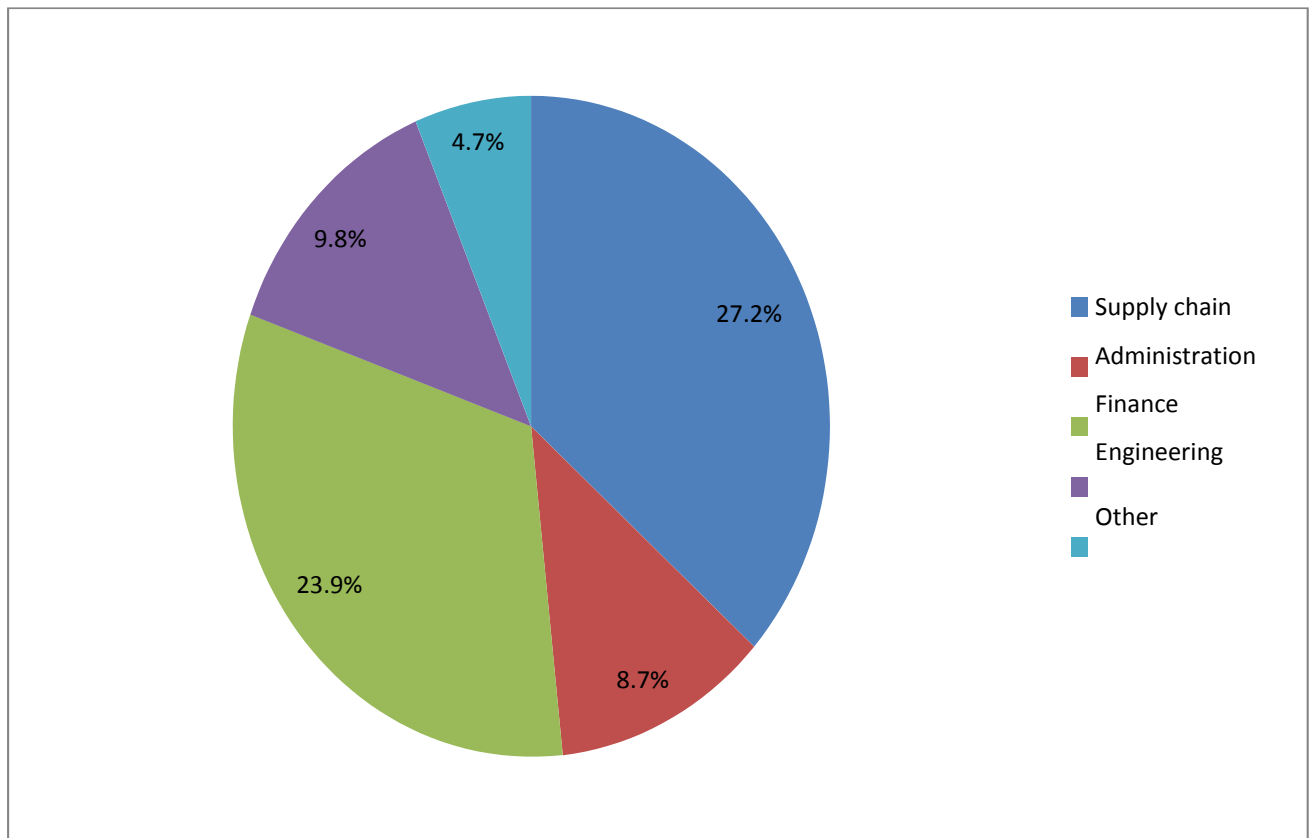
Source: Own survey, 2019

4.4.3. Respondents from Respective Departments

The study further sought to establish the respondents departments in order to determine if the respondents were from the key departments concerned with the execution of supply chain management functions. As presented in figure 4.2, majority (27. %) of the respondents were from supply chain department, 8.7% were from administration department and 23.9% were from finance department, 9.8% were from engineering and 4.7% were from other department.

This demonstrated that all the respondents were directly involved in the execution of supply chain functions and this helped in gathering reliable data on the effect of supplier management practices on the supply chain performance in Ethiopian electric utility in Head Office.

Figure.4.2 Respondents' Respective Department



Source: Own survey, 2019

4.4.4. Respondents' Position in EEU

The study further found that it was important to establish the management position held by the respondents in order to determine the extent to which respondents were involved in the implementation of Supply chain functions in the organization. From the findings presented in figure 4.3., majority (32.2%) of the respondents were junior Supply chain staff, 19.9 % respondents were Other staff ,15.9% were middle level supply chain staff, and 6.2% were top management supply chain staff.

Figure 4.3. Respondents Position in EEU



Source: Own survey, 2019

4.4.5. The Effect of Supplier Identification Practices on Supply Chain Performance

Identification of supplier is identified and qualifies suppliers to maintain a healthy supply base to account for normal and unforeseen exists of preferred suppliers. High growth technology companies often find they must identify and qualify new suppliers in order to meet the needs of new technology components. A properly designed and implemented identification of supplier plays an essential role in providing a guiding framework for the improving of supply chain performance. Respondents were asked various questions that are indicators of the effect of Supplier identification practices. The following are specified practices to improve performance were as presented in table 4.4.



Table: 4.4: The rate of using supplier identification practices in improving supply chain performance

	Minimum	Maximum	Mean	Std. Deviation
➤ using reference checks with other procuring entities	1	5	3.34	1.217
➤ using market survey	1	5	3.41	1.248
➤ requesting information from suppliers	1	5	3.62	0.855
➤ using request for proposal from suppliers	1	5	3.62	0.882
➤ Use of competitive bidding Valid N(list wise)	1	5	3.87	0.975

Rating scale

5-Very great extent 4- great extent 3-moderate 2- little extent 1- very little extent

Table: 4.4: demonstrate that the extent of using some of the supplier identification practices. The mostly used practices that contribute to performance of the supply chain were: requesting information from suppliers ; requesting for proposal from suppliers and Use of competitive bidding process; which had an approximate average score of 4.0 (Grate Extent) using market survey, and using reference checks with other procuring entities which had an approximate average score of 3.0 (Moderate). Proper identification practices were further regarded as very crucial in acquiring the right suppliers. The respondents expressed that proper identification was limited by: false information offered by suppliers. According to Monczkaet *al.* (2005) supplier identification needs to be performed with care to avoid errors that may have long-lasting effects to a company.



4.4.6. The Influence of Supplier Selection and Evaluation Practices on Supply Chain Performance

The study aimed at establishing the influence of supplier selection and evaluation practices on supply chain performance. The respondents' rating on the use of a number of specified practices was as presented in table 4.5.

Table: 4.5: The rate of using Supplier Evaluation and Selection practices improving supply chain performance

	No	Minimum	Maximum	Mean	Std. Deviation
level of basing evaluation and selection on quality of goods /service	205	1.00	5.00	3.5073	1.23915
Use of delivery schedules	205	1.00	5.00	3.088	1.26706
Use of price of goods/services	205	1.00	5.00	3.5220	1.21903
Use of terms of payment agreeable by supplier	205	1.00	5.00	3.4976	1.17834
Using technical support and after sales service	205	1.00	5.00	3.1902	1.27106

Rating scale

5-Very great extent 4- great extent 3-moderate 2- little extent 1- very little extent

Table 4.5 show that the most rated supplier selection and evaluation practices were: level of basing evaluation and selection on quality of goods /service and Use of price of goods/services which had an approximate average score of 4.0(Grate Extent), evaluation, Use of terms of payment agreeable by supplier, Use of delivery schedules and Using technical support and after sales service which had an approximate average score of 3.0(Moderate). The respondents further suggested that the key checkpoints during supplier selection were: the price of the supplier and supplier tract record through tender committee. However it was



expressed by some respondents that proper selection was inhibited with the member of unskilled and influenced Technical evaluation committee, false documents given by suppliers and inadequate risk estimation practices. Supplier selection was further said to be very crucial in meeting the contractual targets and mitigating risk. Kannan and Choon(2002) postulate that, supplier selection is important because it includes the performance criteria on which the supplier later is evaluated. Therefore, an effective selection process with the use of the right performance criteria can reduce or prevent risk.

4.4.7. Supplier Relationship Management Practices and Supply Chain Performance

The effect of supply relationship management practices was also evaluated. The study aimed at finding EEU had supplier relationship management practices and which practices were mostly used to enhance supply chain performance. The respondent's results were as follows:

Table: 4.6: The rate of using Supplier relationship management practices improving supply chain performance

	No	Minimum	Maximum	Mean	Std. Deviation
Cooperation and collaboration with suppliers	205	1.00	5.00	3.5220	1.20284
Understanding, agreeing and codifying the Interactions between supplier and the organization	205	1.00	5.00	3.0732	1.26782
Clear commitment between the organization and suppliers	205	1.00	5.00	3.4829	1.18237
Involvement of supplier through pre-bid meetings	205	1.00	5.00	3.2780	1.28938
Conducting suppliers debriefs after tendering	205	1.00	5.00	3.1561	1.06413



Rating scale

5-Very great extent 4- great extent 3-moderate 2- little extent 1- very little extent

Table 4.6, shows that the supplier relationship management practices that were used to enhance supply chain performance were: Cooperation and collaboration with suppliers which had an approximate average score of 4.0(Great Extent)with and Clear commitment between the organization and suppliers, conduction of supplier examines after tendering, Understanding, agreeing and codifying the Interactions between supplier and the organization; and Involvement of supplier through pre-bid meetings which had an approximate average score of 3.0(Moderate) .

However it was expressed by some respondents that Conducting suppliers examines after tendering was not properly expressed it was only express list price of the bidder and Understanding, agreeing and codifying the Interactions between supplier and the organization was simply use as a document not clear understanding between them. According to Hughes and Wadd (2012), supplier relationship practices is more than merely part of the enterprise resource planning system or playing golf with supplies. A proper supplier relationship practice requires that a company systematically manages all the interactions across the business with suppliers.

4.4.8. Supply Chain Performance

On the extent to which supply chain performance were Employed in EEU, respondents were asked to indicate the extent to which supplier management practices factors determined the improvement of the supply chain performance. Supply chain performance is the entire chain's Ability to meet end-customer needs through product availability and responsive, on-time delivery (Ndambuki, 2013). The study tried to evaluate the influence of supplier management practices on the attribute of supply chain performance such as: Cost reduction, lead time reduction, quality of goods and services and Customer satisfaction. From table 4.7, supplier



management practices had most influence on customer satisfaction and illustrated by appropriate average score of 4.0 or Great Extent respondents who agreed to such influence.

Table: 4.7: The rate of using supply chain performance

	N	Minimum	Maximum	Mean	Std. Deviation
Cost reduction	205	1.00	5.00	3.1415	1.30778
Shorter lead time	205	1.00	5.00	3.4293	1.21717
Customer satisfaction	205	1.00	5.00	3.5171	1.21104
Quality of goods and Services	205	1.00	5.00	3.1561	1.19486

Rating scale

5-Very great extent 4- great extent 3-moderate 2- little extent 1- very little extent

The Table shows that; , Customer satisfaction which had an approximate average score of 4.0(Great Extent) , the rest Quality of goods and services ,Cost reduction and Shorter lead time which had an approximate average score of 3.0(Moderate).

4.4.9. Comparison of the Independent and Dependent Constructs

The descriptive statistics for each first order dimensions of the three independent constructs are presented in Table 4.8. The purpose of this analysis was to determine the extent to which the identified factors influence SCP. In the table, the mean and standard deviation are shown to indicate the rank in which factors are influence SCP



Table: 4.8 Independent Constructs Analysis

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis	
							Std. Error
Siden	205	1.00	5.00	3.5756	0.72942	-0.238	0.338
Se	205	1.00	5.00	3.3532	0.88171	-0.100	0.338
SRM	205	1.00	5.00	3.3024	0.89850	-0.224	0.338

Table 4.8 shows how the 205 respondents rated the supplier management practices on an average. The three factors are ranked by mean score. According to the mean values, the following factors can be regarded as the most significant factors of SCP:

- . **Siden**- supplier identification (1st);
- . **Se**- Supplier evaluation and selection (2nd); and
- . **SRM**- Supplier relationship management (3rd)

4.5. Results of Inferential Statistics

The research findings present by inferential statistical techniques which were carry out to reach reliable conclusions on the information gathered. Correlation analysis and linear regression were applied.

4.5.1 Correlation Analysis

Correlation analysis also known as the Pearson's correlation coefficient is to examine the relationship between two variables. Specifically, a correlation coefficient finds out the degree to which variation in one variable is related to variation in another variable. In this study, Pearson's Product Moment Correlation Coefficient was used to find out whether there is significant relationship between each independent and dependent variable.

Gravetter and Wallnau define the Pearson correlation as, "measures the degree and direction



of linear relationships between two variables”. A correlation score of -1.00 means that there is a perfect negative relationship between the two variables while a correlation score of 1.00 means there is a perfect positive relationship between the two variables. A Correlation score of 0.00 means that there is no relationship between the two variables. Table 4.9 the results of Pearson correlation presents on the relationship between the three independent constructs are linear, perfectly positive and ranging from substantial to strong correlation coefficients.

Table: 4.9-Correlations

		Siden	Se	SRM	SCP
Siden	Pearson Correlation	1	0.742**	0.735**	0.794**
	Sig. (2-tailed)		.000	.000	.000
	N	205	205	205	205
Se	Pearson Correlation	0.742**	1	0.932**	0.854**
	Sig. (2-tailed)	.000		.000	.000
	N	205	205	205	205
SRM	Pearson Correlation	0.735**	0.932**	1	0.866**
	Sig. (2-tailed)	.000	.000		.000
	N	205	205	205	205
SCP	Pearson Correlation	0.794**	0.854**	0.866**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	205	205	205	205

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

4.5.2. Combined Effect Model

4.5.2.1 Regression Analysis

The study further carried out regression analysis to establish the statistical significance relationship between the independent variables notably, Identification of Supplier, Supplier Selection and Evaluation and supplier management Relationship practices, on the dependent variable which was Supply chain Performance. According to Green and Salkind (2003),



regression analysis is a statistics process of estimating the relationship between variables. Regression analysis helps in generating equation that describes the statistics relationship between one or more predictor variables and the response variable. The regression analysis results were presented using a scatter plot diagrams, regression model summary tables, Analysis Of Variance (ANOVA) table and beta coefficients tables. The objectives of the regression analysis were to come up with a suitable regression equation that can be used to explain the variables that influence supply chain performance in EEU.

A multiple regression model was fitted to determine whether independent variables notably, X1= Identification of supplier, X2=Supplier Evaluation and selection and X3= Supplier relationship management, simultaneously affected the dependent variable Y= Supply chain performance; as a result, this subsection examines whether the multiple regression equation can be used to explain the nature of the relationship that exists between the independent variables and the dependent variable. The multiple regression models were the form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \text{ Where; } \beta_0 = \text{Constant}$$

Y= Supply Chain Performance X1= Supplier Identification

X2=Supplier Evaluation and Selection X3= Supplier relationship management

β_i = Coefficients of regression for the independent variables X_i (for $i = 1, 2, 3, 4, 5$)

e. = error term

Model Summary, Multiple regressions

Table: 4. 10 Multiple regressions

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.900 ^a	.810	.807	.44048	.810	285.594	3	201	.000

Table 4.10 above indicates an overall P-value of 0.000 which is less than 0.05 (5%). This



shows that the overall regression model is significant at the calculated 95% level of significance. It further implies that the studied independent variables namely supplier identification, Supplier evaluation and selection and Supplier relationship, have significant effect on Supply Chain Performance of EEU. Table 4.10 shows the regression model summary indicating the coefficient of determination R Square as 0.810. This means that 81% of the relationship is explained by the identified three factors namely supplier identification, Supplier evaluation and selection and Supplier relationship. This shows that the model has a good fit since the value is above 80% the rest 19% is explained by other factors not studied in this research. In summary the three factors studied namely, supplier identification, Supplier evaluation and selection and Supplier relationship determines 81% of the relationship while the rest 19% is explained or determined by other factors.

4.5.2.2. ANOVA, Multiple Regressions

The study used ANOVA to establish the significance of the regression model. In testing the significance level, the statistical significance was considered significant if the p-value was less or equal to 0.05. The significance of the regression model is as per Table 10 below with P-value of

0.000. Which is less than 0.05. This indicates that the regression model is statistically significant in Supply chain performance in EEU.

Basing the confidence level at 95% the analysis indicates high reliability of the results obtained. The overall Anova results indicates that the model was significant at $F = 285.594$, $p = 0.000$.

ANOVA^a

**Table 4.11: Analysis of Variance**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	166.236	3	55.412	285.594	.000 ^b
	Residual	38.999	201	.194		
	Total	205.235	204			

a. Dependent Variable: SCP b. Predictors: (Constant), SRM, Siden, Sue

4.5.2.3. Coefficients of Overall Regression Model

Table: 4.12 Coefficients of Overall Regression Model

Coefficients								
Model ^a		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Hypotheses	Result
		B	Std. Error	Beta				
1	(Constant)	-.574	.155		-3.715	.000		
	Suid	.432	.064	.314	6.735	.000	H1	Accepted
	Sue	.255	.099	.224	2.575	.011	H2	Accepted
	Srm	.476	.096	.427	4.963	.000	H3	Accepted

?

$$Y = -0.574 + .432x_1 + .255x_2 + .476x_3 + 0.19$$

The regression equation above has established that taking all factors into account (Supply chain performance as a result of, supplier identification, Supplier evaluation and selection and Supplier relationship) constant at zero Supply chain performance among employees of Ethiopian electric utility in Head Office Will be -.574. The findings presented also shows that taking all other independent variables at zero, a unit increase in supplier identification will lead to a 0.432 increase in the scores of supply chain performance among employees of ;



Ethiopian electric utility a unit increase in will lead to a Supplier evaluation and selection 0.255 increase in supply chain performance among employees of , Ethiopian electric utility a unit increase in will lead to Supplier relationship a 0.476 increase in the scores of supply chain performance among employees of Ethiopian electric utility. This therefore implies that all the three variables have a positive relationship with supply chain performance with supplier relationship management contributing most to the dependent variable.²³

4.5.3 HYPOTHESES TESTING AND DISCUSSION

Hypothesis 1

H01. There is positive relationship between supplier identification practices and supply chain performance

$$\beta_1 > 0$$

HA₁. There is negative relationship between supplier identification practices and supply chain performance

$$\beta_1 < 0$$

In relation to the variable identification practices, the results in Table 8 above indicate that identification practice has a significant influence on supply chain performance. This is supported by regression analysis ($\beta = 0.432$ with $p < 0.05$), the study accepted the declarative hypothesis that there is There is positive relationship between supplier identification practices and supply chain performance.

Hypothesis 2

H02. There is positive relationship between supplier evaluation and selection practices and supply chain performance in Ethiopian electric utility

$$\beta_1 > 0$$

HA₁. There is negative relationship between supplier evaluation and selection practices and supply chain performance



$\beta_1 < 0$

In relation to the variable supplier evaluation and selection practices, the results in Table 8 above indicate that supplier evaluation and selection practices has a significant influence on supply chain performance. This is supported by regression analysis ($\beta = 0.255$ with $p < 0.05$) the study accepted the declarative hypothesis that There is positive relationship between supplier evaluation and selection practices and supply chain performance in Ethiopian electric utility

This is in agreement with Stock et al. (2013) who argue that for an organization to operate efficiently, its supply chain activities should flow smoothly to create value to customers hence it should minimize delays by avoiding poor and outdated equipment

Hypothesis 3

H03. There is positive relationship between supplier relationship management practices and supply chain performance in Ethiopian electric utility in Head Office

$\beta_1 > 0$

HA1. There is negative relationship between supplier relationship management practices and supply chain performance in Ethiopian electric utility in Head Office

$\beta_1 < 0$

In relation to the variable supplier relationship management practices, the results in Table 8 above indicate that supplier relationship management practices has a significant influence on supply chain performance in Ethiopian electric utility in Head Office. This is supported by regression analysis ($\beta = 0.476$ with $p < 0.05$) the study accepted the declarative hypothesis that there is positive relationship between supplier relationship management practices and supply chain performance.



CHAPTER FIVE

Summary, Conclusion and Recommendations

5.1. Introduction

This chapter discusses the summary of the key findings along the study objectives and the corresponding hypothesis. It then draws conclusions based on these findings and discussions are put forth for the recommendations of the study based on both the supply management practices and supply chain performance. Finally, the chapter presents the study limitations and recommendations for further areas of research.

5.2 Summary of Major Findings

The general objective of the study was to determine the influence of supply management practices on supply chain performance in EEU. The study specifically determined the influence of supplier identification; Supplier evaluation and selection and supply management practices on supply chain performance in EEU. The reviewed literature showed that supply chain performance plays an important role in delivery of quality goods and services.

Further, it was revealed that the type of the employed supplier identification; Supplier evaluation and selection practice and supply management practices significantly influence the supply chain performance.

The major findings summarized from the three specific objectives are as follows:

5.2.1 Supplier identification practice and Supply chain performance

The study sought to examine the effect of supplier identification practice on supply chain performance in EEU. The study found out that supplier identification practice have a correlation with supply chain performance of 0.432. The coefficients correlation of the study showed that supplier identification practice have a significant influence of 0.432 on supply



chain performance. Increasing levels of supplier identification practice by a unit would increase the levels of supply chain performance by 0.432.

5.2.2. Supplier Selection and Evaluation practice and Supply chain performance

The study aimed to assess the effect of Supplier selection and evaluation practice on supply chain performance in EEU. According to the findings, Supplier selection and evaluation have positive significant correlation with supply chain performance of 0.255. This implies that Supplier selection and evaluation has relationship with supply chain performance. Further analysis also showed that Supplier selection and evaluation has significant influence of 0.255 on supply chain performance. Increasing levels of Supplier selection and evaluation in would have significance effect on supply chain performance by 0.255.

5.2.3 Supplier relationship Management and Supply chain performance

The study sought to evaluate the effect of supplier relationship management practice on supply chain performance. The study findings revealed that supplier relationship management has a positive correlation with supply chain performance of 0.476.

This implies that there is a positive relationship between supplier relationship management and supply chain performance. The correlation coefficient model of the study shows that supplier relationship management has a significant influence of 0.476 on supply chain performance. Increasing levels of supplier relationship management by a unit would increase the levels of supply chain performance shows that supplier relationship management has a positive influence on supply chain performance. The three-variable regression model was significant at a 0.01 level ($p=0.000$) and explained 81% (R^2) of the total variation.

Supplier relationship management was the most significant variable in explaining supply chain performance and it solely explained 47.6% of total variation. Supplier relationship management is the most closely related to supply chain performance and it ultimately realizes performance improvement. For all constructs, the B-values indicate positive relationship



between the predictors and outcome. Since the value of beta Coefficients for all is positive.

5.3 Conclusions

Based on the study findings, the study concludes that supply chain performance in EEU is affected by supplier relationship management followed by identification of supplier and then supplier evaluation and selection are the major factors that mostly influence supply chain performance in EEU.

The study concludes that supplier relationship management is the first important factor that affects supply chain performance in EEU. The correlation coefficient model of the study shows that supplier relationship management practices has a significant influence of 0.476 on supply chain performance. This implies that increasing levels of supplier relationship management by a unit would increase the levels of supply chain performance by 0.476. This shows that supplier relationship management has a positive influence on supply chain performance.

Supplier relationship management factors such as Cooperation and collaboration with suppliers, Understanding, agreeing and codifying the Interactions between supplier and the organization,

Clear commitment between the organization and suppliers, Involvement of supplier through pre-bid meetings and Conducting suppliers examines after tendering affects supply chain performance in EEU. Identification of supplier is the second important factors that affect supply chain performance. The study shows that increasing levels of Identification of supplier by a unit would increase the levels of supply chain performance by 0.432.

According to the study findings, Identification of supplier factors such as using reference checks with other procuring entities, using market survey, requesting information from suppliers, using request for proposal from suppliers and Use of competitive bidding to a large extent affected supply chain performance.



Finally the study concludes that supplier evaluation and selection in EEU. The correlation coefficient of the study shows that supplier evaluation and selection have a significant influence of 0.255 on supply chain performance. Increasing levels of supplier evaluation and selection by a unit would increase the levels of supply chain performance by 0.255. supplier evaluation and selection factors such as level of basing evaluation and selection on quality of goods/service, Use of delivery schedules, Use of price of goods/services, Use of terms of payment agreeable by supplier and Using technical support and after sales service to a large extent affects supply chain performance in EEU.

5.4 Recommendations

To ensure that supplier evaluation and selection supports supply chain performance in EEU, the management of the organization and there employee should improve on the Use of delivery schedules, Use of terms of payment agreeable by supplier and Using technical support and after sales service apply better evaluation and selection method , improve on;

Relationship between evaluation committee and employ, better methods of managing organization evaluation and selection practice to avoid influencer and unskilled evaluator.

Supply chain performance in the organization is delayed by the employed in identification of supplier the organization should proper intervention in protecting against inappropriate information offered by fraudulent suppliers. The management of EEU head offices should embraces effective Supplier relationship management strategies in order to support supply chain performance. Understanding, agreeing and codifying the Interactions between supplier and the organization, use as a document to govern both the supplier and the organization and improve skill fully to answer Conducting suppliers examines after tendering. In relation with the findings and discussions the study recommends: proper intervention in protecting public institutions against inappropriate information offered by fraudulent suppliers, emphasizing on performance measurement and laying down proper checks for all



contracts, setting supplier selection structures that avoid political interference and augmenting of supplier relationship management practices to ensure supplier and public institutions work towards the same goal.



Reference

- Biraori, O. J. 2015. The effect of supplier relationship on the supply chain. effectiveness management in the Keneya, PUBLIC SECTOR. *International Journal of Managing Value and Supply Chains*, 6, 18.
- Chan, F. 2003. Performance measurement in a supply chain. *The international journal of advanced manufacturing technology*, 21, 534-548.
- Charles.T. 2007. Mixed Methods Sampling: A Typology With Examples. *Journal of Mixed Methods Research*, 1, 1-25.
- Cooper, J. 2004. *Supply Chain Management Practices*. Second Edition ed. Pearson Publishers.
- Crane, W. 2016. *Supplier Identification & Qualification Keys to Efficiently Finding the Right Partners*. pp. 1-3. Diageo, 2011. *Partnering with Suppliers: Diageo's Standards of Business Ethics and Sustainability for Suppliers*.
- Doney, P. &. 1997. An Examination of the Nature of Trust in Buyer-Seller Relationships. *Journal of Marketing*, 61, 35–51.
- Donlon, J. 1996. Maximizing value in the supply chain. *Chief Executive*, 117, 54-63.
- Drucker, P. 1998. Strategic dimension of the supply chain. *Journal of Transport and Logistics* , Emerson, R. 1962. Power-dependence relations. *American. sociological review* , 31-41.
- Ford, D. 1980. The Development of Buyer-Seller Relationships in Industrial Markets. *European Journal of Marketing*. , 14, 339-353.
- Friedman, H. 2006. Drivers of Supply Chain Vulnerability: an integrated framework,. *International Journal of Physical Distribution & Logistics Management*., 35, 210-231.
- Ghaith M. Al-Abdallah, A. B. 2014. The Impact of Supplier Relationship Management on Competitive Performance of Manufacturing Firms. *International Journal of Business and Management*, 9, 1-11.



- Handfield, R. 2007. Reducing the Impact of Disruptions to the Supply Chain. *Industry Issues Sascom Magazin*, 58. 44
- Heikkila, J. 2002. From supply to demand chain management: efficiency and customer satisfaction. *Journal of Operations Management*, 20(6), 747–767.
- Kumar, N. S. 1995. The effects of perceived interdependence on dealer attitudes. *Journal of Marketing Research*, , 32, 348-356.
- Lee, S. &. 1985. Comparative analysis of Japanese just-in-time purchasing and traditional US purchasing system. *International Journal of Operations and Production Management*,
- Li s, B. R.-N.-N. 1997. 2006. The impact of supply chain management practices on competitive advantage and organizational performance. *The International Journal of Management Science*, 107-124.
- MacDuffie, J. &. 1997. Creating Lean Suppliers: Diffusing Lean Production Through the Supply Chain. *California Management Review*, 39, 118-151.
- McAdam, R. H. 2005. Performance management in the UK public sector: Addressing multiple stakeholder complexity. , *The International Journal of Public Sector Management*, , 18, 227
- Morgan, R. &. 1994. The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing*,,
- Nicosia, N. 2006. Implementing Purchasing. Ntayi.J, E. a. 2010. .Procurement practices and supply chain performance of smes in Kampala. *Asian Journal of Business Management*, 82-88.
- Östring, P. 2004. Profit –Focused Supplier management. New York, Amacom. Owuor Joel Onyango1, M. B. 2015. Effect of Strategic Supplier Relationship Management on Internal Operational Performance of Manufacturing Firms: A Case of East African Breweries Limited, Kenya. *International Journal of Economics, Finance and Management Sciences*, 3, 115-124.



Peters, M. 2004. Peters, M. 2004. Logistics Management. . Journal of Supply Chain Management. , 55.

Sarkis., C. B. (2009). . A Grey Rough Set Evaluation. Supplier Selection and Sustainability. Working Paper.

Simchi-Levi D, K. P.-L. 2008. Designing and Managing the Supply Chain: concepts, strategies, and case studies. McGraw-Hill/Irwin, Boston. Stephen, D. B. (2009). Supplier Selection. pp. 1-21. 45

Stump., J. H. 1997. Performance Implications of Buyer-Supplier Relationships in Industrial Markets. Journal of Business Research,, 32, 57-66.

Tran, H. 2015. A Case Study of Integrative Creation of Supplier Relationship Management Process. Case Study.

Williamson, E. 1996. The Mechanisms of Governance. New. York, Oxford University Press.



APPENDICES

Appendix 1: Introduction Letter

To Whom It May Concern

Dear Sir/Madam,

COLLECTION OF DATA

Time Allowed 30 minute

I am a Master of student in the Department of Logistics and Supply chain management Addis Ababa University of School of commerce. As part of the requirement for the award of the degree, I am expected to undertake a research study on the effect of Supplier management Practice on Supply chain Performance in Ethiopia Electric Utility. I'm therefore, seeking your assistance to fill the questionnaires attached. Kindly answer all the questions. The research results will be used for academic purposes only and will be treated with utmost confidentiality. No one, except the institution will have access to these records. you can going on leave before completing the questionnaire to enjoy and back for completing. Should you require the summary, kindly indicate so at the end of the questionnaire. A self-addressed envelope is provided for your reply. Your cooperation will be appreciated.

Yours sincerely,

Mesfin Asmamaw



Appendix II: Questionnaire

SECTION 1: GENERAL INFORMATION

(Instruction -Tick where appropriate)

1. Highest Education Level

- Secondary level
- Certificate
- Diploma BA
- MA and above
- (Specify.....)

1. Working Experience

- Less than 5 years
- 6-10 Years
- 11-15years
- 16 years and above

2. Department

- Supply chain
- Administration
- Finance
- Engineer
- Other.....

3. Position

- Top management procurement staff
- Middle level procurement staff
- Junior procurement staff
- Other



A. Identification of Supplier

What is your level of agreement with the following statements that relate to the effect of supplier identification practice on supply chain performance? Use a scale of 1-5, 1=Very great extent 4=great extent 3=moderate 2=little extent 1-=very little

	1	2	3	4	5
5.using reference checks with other procuring entities					
6.using market survey					
7.requesting information from suppliers					
8.using request for proposal from suppliers					
9.Use of competitive bidding					

10. In your own opinion, what are the main resources your organization uses for identifying the pool of potential suppliers?

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B. Supplier Selection and Evaluation

What is your level of agreement with the following statements that relate to The Influence of Supplier Selection and Evaluation Practices on Supply Chain Performance? Use a scale of 1-5, 1=Very great extent 4=great extent 3=moderate 2=little extent 1=very little

	1	2	3	4	5
11.level of basing evaluation and selection on quality of goods /service					
12.Use of delivery schedules					
13.Use of price of goods/services					
14.Use of terms of payment agreeable by supplier					
15.Using technical support and after sales service					

16. In your own opinion what criteria do you use to assess potential suppliers at each stage.....

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C. Supplier Relationship Management

What is your level of agreement with the following statements that relate to the effect of Supplier Relationship Management Practices and Supply Chain Performance? Use a scale of 1-5, 1=Very great extent 4=great extent 3=moderate 2=little extent 1=very little

	1	2	3	4	5
17.Cooperation and collaboration with suppliers					
18.Conducting periodic suppliers conferences on your organization requirements					
19.Clear commitment between the organization and suppliers					
20.Involvement of supplier through pre-bid meetings					
21.Conducting suppliers debriefs after tendering					

22. In your own opinion, how could the management of EEU improve on Supplier Relationship management systems?

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D. Supply Chain Performance

What is your level of agreement with the following statements that relate to factors determine

Supply Chain Performance? Use a scale of 1-5, 1=Very great extent 4=great extent

3=moderate 2=little extent 1=very little

	1	2	3	4	5
23. Cost reduction					
24. Shorter lead time					
25. Customer satisfaction					
26. Quality goods and services					
27. Customer satisfaction					



Thank you