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The Effect of Strategic Sourcing Practice on Operational Efficiency: The Case of Ethiopian Airlines

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DECLARATION

I hereby declare that the study which is being presented in this thesis titled "**The Effect of strategic sourcing on Operational Efficiency: The case of Ethiopian Airlines**" is original work of mine. It had not been presented for a partial fulfillment for any educational qualification at this university or any other and in any projects by any means, and all the resource materials used for this thesis have been accordingly acknowledged.

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ABSTRACT

The objective of this study is to analyze the effect of strategic sourcing practice on operational efficiency, the case of Ethiopian Airlines and further determine the extent of Ethiopian Airlines strategic sourcing practice and operational efficiency. The study used descriptive as well as explanatory research designs. In this study, probability sampling method is used. In order to undertake this research, by using simple random sampling techniques sample size at confidence level of 95% and 3% margin of error which is the amount of error from difference in the responses the researcher can tolerate when drawing a conclusion from the data. Primary type of data was collected with the help of open and close ended questionnaires and the collected data was analyzed using SPSS version 20. .

In order to examine the relationships between the variables Pearson's correlation were used. And to determine the effect of strategic sourcing practice on operational efficiency multiple linear regression analysis were used. Finally the research comes up with the following findings.

According to Pearson's correlation rest it was found the relationship between Ethiopian Airlines strategic sourcing practice and operational efficiency; there is a positive and strong relationship between Strategic Elevation of Purchasing Function and Contract Management practice and all component of supply chain efficiency. There is a positive and moderate relationship between supplier development practice and all component of supply chain efficiency. There is positive and very strong relationship between Supplier Relationship Management practice and all component of operational efficiency. Finally the study concluded that the strategic sourcing practice of Ethiopian Airlines is good except Suppler Development and that strategic sourcing practice has a significant effect on operational efficiency. At last the study recommends that Ethiopian Airlines Procurement and supply chain division needs to improve supplier development practice.

Key words: Strategic sourcing Practice, Strategic Elevation of Purchasing Function (SEP), Supplier Development(SD),Supplier Relationship Management (SRM), Early Supplier Involvement(ESI), Contract Management (CM), operational efficiency, Delivery in Time, Short Lead Time, Right Quality and Low Cost/price

CHAPTER 1: INTRODUCTION

1.1.BACKGROUND OF THE STUDY

Operations management is a business function responsible for planning, coordinating, and controlling the resources needed to produce a company's products. It is also the process, which combines and transforms various resources used in the operations subsystem of the organization into value added services in a controlled manner as per the policies of the organization.

The industrial operation system uses operational resources to transform inputs into desired output. Inputs such as material, facilities, technology, labor and capital are transformed into outputs in the form of goods/services through Operations management. The operation system tries to ensure that the transformation process is performed efficiently and that the output is of greater value than the sum of the inputs. Among the several operational inputs which are transformed to output, the material resource is mainly managed by supply chain management. There are numerous definitions for the concept of supply chain management (SCM) in the literature. For instance a supply chain is a network of facilities and distribution options that perform the functions of procurement of materials and transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers."(Ganeshan and Harrison, 1995)

According to, Nigel Slack et.al (2010), Operations management can either 'make or break' any business. Also in most businesses, Operations management is large and represents the bulk of the organization's assets, so efficient operations management gives the ability to compete by providing the ability to respond to customers and by developing the capabilities that will keep the organization ahead of its competitors in the future. Organizations operational efficiency represents the capability of an enterprise to deliver products or services to its customers in the most cost effective manner possible while still ensuring the high quality of its products, service and support. Operational efficiency is often achieved by streamlining a company's core processes in order to more effectively respond to continually changing market force in a cost effective manner. Because of ease of world economic integration (globalization) and turbulent environment, organizations realized the need to look into new paradigm of operation structure to go beyond their organization's boundary and work

with and manage other autonomous organizations in a cooperative fashion- a Supply Chain Management Approach- (Gupta & Sahay, 2007:6)

Organizations strive to successfully identify the value inherent in the goods or services being offered to customers. They then deploy this understanding to guide the decisions that affect the production and delivery of those goods and services. These decisions have an impact on the design, execution, and performance of operations and should be coordinated with decisions made by managers of the sourcing functions. The sourcing function (also called purchasing or procurement) is responsible for finding other organizations to serve as sources and then buying the material and service inputs for the transformation process of the organization operation. Many companies have realized the need for elevating traditional procurement function to modern strategic sourcing for value addition across their operational supply chain. Sourcing costs signify 40 to 80 percent of the total cost of goods traded, and 30 to 50 percent of revenues a ratio that has remained constant in most industries for many years. Companies excelling in strategic sourcing save almost 10 to 20 times as much as it cost to operate their sourcing processes. The effort required to reduce 10 percent of the sourcing cost is much less than gaining similar amount of revenue (Chopra &Meindl, 2003).

According to the International Air Transport Association (IATA) official website newsletter, the global airline industry continues to grow rapidly. Measured by revenue, the industry has doubled over the past decade, from US$369 billion in 2004 to a projected $746 billion in 2014. Though the airline industry is rapidly growing, IATA (2015) has reviled that, getting consistent and healthy profitability is indefinable due to the emergence of companies that has strict cost control. Even much of the current industry growth has been driven by low-cost carriers (LCCs), which now control some 25 percent of the worldwide market and which have been expanding rapidly in emerging markets; yet profit margins still represent a very thin figure with less than 3 percent amount. According to the study made by Rao (1999), the airline industry is a service industry with a low level of profitability because it is labor, capital, and technology intensive. With few exceptions, the most successful airlines are those with the strictest cost controls (Berrittella& La Franca, 2009).

Therefore considering the nature of the airline industry, in order to be competitive and profitable managing operational efficiency is very mandatory strategic move for many airlines companies. In

accordance to this, by taking Ethiopian Airlines as a case study, the purpose of this study is to evaluate the effect of strategic sourcing practice on operational efficiency.

1.2.STATEMENT OF THE PROBLEM

Ethiopian Airlines was originally established in June 1945 and had its first scheduled flight in April 1946. Ethiopian Airlines being a pioneer of African aviation as an aircraft technology leader providing the first jet service in the continent in 1962, has 70 years of service in the airline industry. During these 70 years, the company has been entitled to several achievements such as: availing the first African B-767 in 1984, the first African B777-200LR in 2010 and the first African and second only to Japan B787 Dreamliner in 2012. (Ethiopian Airlines Annual Report 2014/15)

According to Mr. Tewolde Geberemariam, the CEO of Ethiopian Airlines, presentation on the 2011 annual employee meeting, despite the several achievements Ethiopian Airlines enjoys, since 2010 the company is facing a stiff market share competition from different Middle East aircraft operators such as Emirates, Etihad, Qatar. As a matter of fact, due to the fact that these Middle East airline companies have a better financial status which is gained due to several factors, they are dominating the market by providing five and four-star service for the passengers with a low flight fare than Ethiopian Airlines. Tewolde Geberemariam (2011), in his presentation, emphasized that competing with these Middle East airline companies are becoming very challenging to Ethiopian Airlines because providing high- class service just like its competitors to the passengers, will rise the company's operating expense . As a result in order to remain profitable, the company will be forced to charge its customers higher price. However, considering the emerging market leadership war that Ethiopian Airlines is facing, providing high-class service to the customer by charging higher price will not make the organization competitive.

Therefore, in line with this challenge Ethiopian Airlines management team designed and introduced a fifteen years strategic plan called vision 2025. The company formulates this Vision with the objective of becoming the most competitive and leading aviation group in Africa by providing safe, market driven and customer focused passenger and cargo transport, aviation training, flight catering, aircraft maintenance and overhaul and ground services to its customers by the year 2025. Hence, in order to achieve the objectives of the strategic plan, the company started to work on building up the

operational efficiency of all its functional units so that to enable the organization to provide the required service quality to its customers by incurring the possible lowest operational cost.

Thus, the different functional units of Ethiopian Airlines are expected to accomplish their various tasks with a superior quality at the same time keeping and managing their operating efficiency so that the consolidated effect of achieving these parameters can be reflected on the overall company's performance. On due course, Ethiopian airlines Procurement and supply chain division is obligatory to provide a full support for these functional units by managing the organization internal supply chain activity in a very efficient way so that to enhance the organization operational efficiency.

As the findings of previous studies are showing, Supply chain has a big effect on operational efficiency. Managing operating expense without losing competitive advantage requires upgrading the traditional purchasing concept to highly integrated supply chain management concept (Zito, 2009). When we look to the traditional view of the role of purchasing departments, it is to solicit competitive bids and award the contract to the lowest bidder. Unfortunately, this method does not take into account the role of long-term supplier relationships and the opportunity to create an integrated supply chain with strategic partnerships for future purchases of goods and services (Roberts, 2002). In addition Ball (2005) also stated that, 40% of an organization's operating budget is spent on purchased goods and services. Therefore, the decisions made by purchasing professionals can help to determine the financial viability of the organization. Firms can increase the so-called "bottom line" which is profit maximization, by either increasing revenues or by decreasing operational costs. Under economic conditions of strong competition and uncertainty, it is often difficult to increase revenues. Conversely, the competitive environment can provide an advantage to the organization which has the ability to negotiate lower prices for purchased goods and services. The opportunity to increase income without relying on raising revenues and compromising competitive advantage is the essence of strategic sourcing initiatives under the shade of supply chain management philosophy.

As it is discussed previously, by upgrading the traditional purchasing concept to strategic sourcing practice, Ethiopian Airlines can improve its internal supply chain so that to endorse the organization's operational efficiency. However, the number of previous studies conducted to determine, assess or analyze Ethiopian airlines strategic sourcing practice and its operational efficiency is almost unavailable. Therefore, In order to fill this gap, this study is conducted to analyze the effect of strategic sourcing practice over the operational efficiency of Ethiopian Airlines.

1.3.RESEARCH OBJECTIVE

General Objective;

The general objective of this study is to analyze the effect of strategic sourcing practice on operational efficiency, the case of Ethiopian Airlines.

Specific objective;

The study aims to achieve the following specific objectives

- To determine the extent of Ethiopian Airlines strategic sourcing practice
- To determine the extent of Ethiopian airlines Operational efficiency
- To determine the relationship between strategic sourcing practice and Operational efficiency

1.4.RESEARCH QUESTIONS

The research has addressed the following Main research question

The main research Question is

- What is the effect of strategic sourcing practice on airlines operational efficiency?

Sub research questions

- What is the effect of strategic sourcing practice on promoting on time delivery?
- What is the effect of strategic sourcing practice on promoting shorter product lead-time?
- What is the effect of strategic sourcing practice on promoting delivery of high-quality product?
- What is the effect of strategic sourcing practice on promoting delivery of product with the possible lowest cost?

1.5.SIGNIFICANCE OF THE STUDY

Conducting a study to analyze the effect of strategic sourcing practice on operational efficiency has both theoretical and practical significance.

Theoretically: Unlike the availability of several literatures on supply chain management, the available literature and previous studies which provide detailed information regarding operational efficiency and strategic sourcing practice are very few. Hence, undertaking this study is expected to contribute to the advancement of the existing theoretical coverage on strategic sourcing practice and operational efficiency. Also, the finding and conclusion of this study can lead to the initiation of further study by anyone who might be interested in the topic.

Practically: the study has the potential to have significant value for many companies especially for those who use imported materials as their primary resource or input for their business function. If such companies employ unorganized and inappropriate sourcing practice, they could face a multiple problems in their day to day activities such as: incurring a huge amount of cost due to procuring poor quality inputs, facing frequent production interruption and the like. Therefore, the findings of this study can provide the opportunity, for many organizations, to understand the essence of the modern sourcing practice and its effect on operational efficiency. Finally, after completing the study and analyzing the results, proper recommendations will be reported to the concerned bodies of the case study company (Ethiopian Airlines).

1.6.SCOPE OF THE STUDY

The study focused on determining the effect of strategic sourcing practice on operational efficiency through the analysis of ethiopian internal supply chain eficencey. The targeted respondent of the study is represented by Ethiopian Airline's procurement and supply chain department staff. Under this study, operational efficiency is determined based on the capability of Ethiopian Airlines procurement and supply chain department to satisfy customer’s requirement with the possible lowest cost. Also on this study customer refers the different departments that require service from the procurement and supply chain department.

The findings of the study can be extended to similar companies. However, generalization to wider areas requires further investigation.

1.7.ORGANIZATION OF THE THESIS

The thesis is organized in five chapters including this introductory part. Chapter one contains the introduction part which is dealing with background of the study, the research problem, objectives of the study, significance, and scope of the study. Chapter two deals with the literature review. It gives an overview of the body of knowledge applicable to the research problem. In chapter three, the research methods, materials, and Procedures of the study are presented in detail. Chapter four summarizes results and discussion of the study and finally, chapter five is comprised of three sections which include discussion, conclusions, and recommendations

1.8.LIMITATION OF THE STUDY

The limitations faced by the researcher while conducting the study are:

- Lack of available literature which shows other airline sourcing
- The analysis of the data gathered so that to come up with a valid result, required the use and knowledge of some statistical figures and data, thus the fact that the researcher has no pervious statistical knowledge created some challenges to understand and interpret the figures easily.
- Finally, the research requires the availability of scarce resources like; time and money

CHAPTER 2: LITERATURE REVIEW

2.1 OPERATION MANAGEMENT

Operations management is the activity of managing the resources which produce and deliver products and services. All operations produce products and services by changing inputs into outputs using an 'input-transformation-output' process. 'Operations' as an activity undertakes the management of the processes within any of the organization's functions. Every organization has an operations activity because every organization produces some type of products and/or services. Operations management is important. It is concerned with creating the services and products upon which we all depend. And all organizations produce some mixture of services and products, whether that organization is large or small, manufacturing or service, for profit or not for profit, public or private. Thankfully, most companies have now come to understand the importance of operations. This is because they have realized that effective operations management gives the potential to improve both efficiency and customer service simultaneously. (Nigel Slack, Stuart Chambers and Robert Johnston, 2010)

2.2 OPERATIONS STRATEGY

Strategy is the total pattern of decisions and actions that position the organization in its environment and that are intended to achieve its long-term goals. Operations strategy concerns the pattern of strategic decisions and actions which set the role, objectives and activities of the operation. Operations strategy has content and process. The content concerns the specific decisions which are taken to achieve specific objectives. The process is the procedure which is used within a business to formulate its strategy. (Operation management sixth edition, Nigel Slack, Stuart Chambers, Robert Johnston 2010) Strategy is how the mission of a company is accomplished. It unites an organization, provides consistency in decisions, and keeps the organization moving in the right direction. Operations and supply chain management play an important role in corporate strategy. Operations can be viewed as a transformation process that converts inputs into outputs of greater value. Operations management is the study of processes directly related to the creation and distribution of goods and services. Increasingly, these operations are taking place outside of the boundaries of a traditional enterprise. Thus, while today's managers need to understand how to efficiently manage operations within their own firm, they also need to develop skills in coordinating operations across a global supply chain. Supply chain management is one of the most important, strategic aspects of

operations management because it encompasses so many related functions. Globalization and the evolution of information technology have provided the catalysts for supply chain management to become the strategic means for companies to manage quality, satisfy customers, and remain competitive. (Roberta S. Russell and Bernard W. Taylor III 2011)

2.2.1. SUPPLY CHAIN MANAGEMENT

A supply chain encompasses all activities associated with the flow and transformation of goods and services from the raw materials stage to the end user (customer), as well as the associated information flows. In essence, it is all the assets, information, and processes that provide "supply." It is made up of many interrelated members, starting with raw material suppliers, and including parts and components suppliers, subassembly suppliers, the product or service producer, and distributors, and ending with the end-use customer

SCM is the management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the Supply chain as a whole. (Christopher, 1998)

The area of supply chain management (SCM) has seen a rapid increase in interest among many organizations. Numerous reasons have been offered for this. First, a SCM focus has provided firms with competitive advantage given the diminishing returns that are being derived from inter- enterprise improvement initiatives (Maloni and Benton, 2000). Secondly, a restructuring of industries as a result of technological discontinuities has led to natural evolution to SCM (Reddy and Reddy, 2001). Thirdly, SCM has been seen as a practical response to globalization (Weber et al., 2000), deregulation and dynamic competitive markets (Christopher, 1998). Finally, dependencies that firms have on others as a result of developments such as lean operations, outsourcing and JIT have intensified, leading firms to engage in SCM more strongly (Burt et al., 2003) as quoted in (Buregess& Singh, 2006).

According to Gupta & Sahay (2007:13), the objective of supply chain management is to maximize the overall value generated, minimize the cost, effective and timely distribution of products needed by ultimate customers. Supply chain profitability in the abstract is one of the objectives, which means profit sharing among partner organizations. Profitability due to low cost to all partners creates value to customers. Value is created by means of same or higher quality in lesser costs as compared to competitor's products. Supply chain responsiveness is another most sought supply chain objective.

Responding to a wide range of customers demand, short lead times and wide ranges of products in appropriate cost creates value to customers.

2.2.2. SUPPLY CHAIN MANAGEMENT: A HISTORICAL PERSPECTIVE

Because of ease of world economic integration (globalization) and turbulent environment, Organizations realized the need to look into new paradigm of operation structure to go beyond their organization's boundary and work with and manage other autonomous organizations in a cooperative fashion- a Supply Chain Management Approach(Gupta & Sahay, 2007:6)

As clearly stated by Gupta & Sahay (2007:6) many organizations and professionals misunderstood supply chain. Many people interpret this as another process of an organization, which deals with logistics and shear IT operation. A supply chain consists of various stages, which take part in the conversion of raw material into final products and its delivery to the end customer. It not only includes suppliers and manufacturers but also the distributors, transporters, retailers and customers within each organization. It includes all the important functions i.e. order management, planning, shop-floor operations, inspections, packaging, and dispatch, etc. Moreover, the supply chain is the approach to regulating the flow of material, information, and finances.

The term "supply chain management" arose in the late 1980s and came into widespread use in the 1990s. Prior to that time, businesses used terms such as "logistics" and "operations management". While reference to supply chain management can be traced to the 1980s, it is safe to say that it was not until the 1990s that the term supply chain management captured the attention of senior level management in numerous organizations. The concept of supply chain management (SCM) however, can be traced back to just before the 1960s of the systems theory (1951). Increased study of the field began in the 1980s, with a dramatic increase in the publication rate since 1990 (Wisner et al., 2005; Oliver and Webber, 1982).

Supply chain management represents the third phase of an evolution that started in the 1960swith the development of the physical distribution concept and focused on the outbound side of the firms' logistics system. A number of studies during the 1950s and 1960s indicated the potential of systems concept. The focus was on total systems cost and analyzing trade-off scenarios to arrive at the best or lowest physical distribution system cost (that crosses the organizational boundary and incorporates other firms also. The Origins of Supply Chain Management goes back to during the 1950s and 1960s,

when US manufacturers were employing mass production techniques to reduce costs and improve productivity while relatively little attention was typically paid to creating supplier partnerships, improving process design and flexibility, or improving product quality, (Wisneret al., 2005:10).

In the 1960s and 1970s, material requirements planning (MRP) systems and manufacturing resource planning (MRP II) systems were developed, and the importance of effective materials management was recognized as manufacturers became aware of the impact of high levels of inventories on manufacturing and storage costs. The 1970s were the breakout years for supply chain management. Intense global competition beginning in the 1980s (and continuing today) provided an incentive for manufacturers to offer lower-cost, higher quality products along with higher levels of customer service. Many manufacturers utilized just-in-time (JIT) and Total quality management (TQM) strategies to improve quality, manufacturing efficiency, and delivery times in fulfilling customers' order. (Webster 1992).Over the past ten years or above, many large firms or conglomerate have found that effectively managing all of the business units of their own vertically integrated firm -a firm whose business boundaries extend to include onetime suppliers and/or customers is quite difficult as stated by (Wisner et al., 2005:11)

As competition in the United States intensified further in the 1990s accompanied by increasing logistics and inventory costs and the trend toward market globalization, the challenges associated with improving quality, manufacturing efficiency, customer service, and new product design and development also increased. To deal with these challenges, manufacturers began purchasing from a selected number of certified, high- quality suppliers with excellent service reputations and involved these suppliers in their new product design and development activities as well as in cost, quality, and service improvement initiatives. This is done so by reducing the supply base as much as a single supplier and enter into a long-term agreement as a strategic alliance in doing their business. As companies began implementing supply chain management initiatives, they began to understand the necessity of integrating all key business processes among the supply chain participants enabling the supply chain to act and react as one entity.(Chopra and Meindl, 2001).

2.3 OPERATIONS AND SUPPLY CHAIN EFFICIENCY

Operations management can either ‘make or break’ any business. Also in most businesses Operations management is large and represents the bulk of the organization assets, so efficient operations management gives the ability to compete by providing the ability to respond to customers and by developing the capabilities that will keep the organization ahead of its competitors in the future. By ‘doing things right’, operations seek to influence the quality of the company’s goods and services. Externally, quality is an important aspect of customer satisfaction or dissatisfaction. Internally, quality operations both reduce costs and increase dependability. By ‘doing things fast’, operations seek to influence the speed with which goods and services are delivered. Externally, speed is an important aspect of customer service. Internally, speed both reduces inventories by decreasing internal throughput time and reduces risks by delaying the commitment of resources. By ‘doing things on time’, operations seek to influence the dependability of the delivery of goods and services. Externally, dependability is an important aspect of customer service. Internally, dependability within operations increases operational reliability, thus saving the time and money that would otherwise be taken up in solving reliability problems and also giving stability to the operation. By ‘doing things cheaply’, operations seek to influence the cost of the company’s goods and services. Externally, low costs allow organizations to reduce their price in order to gain higher volumes or, alternatively, increase their profitability on existing volume levels. Internally, cost performance is helped by good performance in the other performance objectives. (Nigel Slack et.al 2010)

Efficiency is the measure of how well the resources expended are utilized according to (Beamon 1999). When having an excellent Supply chain the company can provide products to its customers that are of high quality (De Meyer et al, 1989), at low cost (Goonatilake, 1990), within short lead-times (Haug, 1985) and give the requested customer support, (Hoover et al., 2001).The purpose of Supply Chain Management is to support the company to earn as much money as possible. This means as low cost as possible and at the same time sell as much as possible.

According to Annelie, (2008) the definition of an efficient Supply chain varies between different companies. Annelie, (2008), identified three types of groups which most companies are using to define to efficient Supply chain. The three groups are: performance, cost and a combination of performance and cost. Definitions of efficiency in terms of performance are for example high delivery precision and high customer satisfaction. No cost parts are included when the definition is

classified as a performance based definition. Definition of efficiency in terms of cost means that the definition only relates to cost and no other parts. Efficient Supply chain keeps what is promised, delivery in time, short lead time, and right quality at lowest possible cost. This definition includes both the performance focus and the cost focus.

On this study, the definition of operational supply chain efficiency considered the combination of both the performance focus and the cost focus perspective. On this regard Christopher (1998), emphasized the appropriateness of using the combination of both the performance focus and the cost focus perspective by stating: "The future market leaders are the ones that have sought and achieved the twin peaks of excellence. They should have gained both cost leader ship and service leader ship". In addition Christopher (1998), further elaborated the essentials of efficient supply chain on both performance and cost perspective by stating: "To remain competitive in the new global environment companies will have to seek ways to lower cost and service enhancement. This means that Supply chain efficiency will become even more critical".

2.4 SOURCING AND OPERATION

Organizations that are successful strive to identify the value inherent in the goods or services being offered to customers. They then deploy this understanding to guide the decisions that affect the production and delivery of those goods and services. These decisions have an impact on the design, execution, and performance of operations and should be coordinated with decisions made by managers of the sourcing functions. The sourcing function (also called purchasing or procurement) is responsible for finding other organizations to serve as sources and then buying the material and service inputs for the transformation process of the organization. (Roger G. Schroeder and Susan Meyer Goldstein 2013)

2.4.1. STRATEGIC SOURCING

Strategic sourcing has been defined by several scholars with different perspective:

Strategic Sourcing is an institutional sourcing and supplier management process that continuously improves and re-evaluates the supply chain activities of the company. It is an iterative process that cuts cost and reduces risk, while building better relationships with fewer more critical suppliers. (GE Capital, 2012). Slaight (1999:43), "strategic sourcing is a periodic event that includes the

identification and selection of initial commercial arrangements with a selected supplier that either creates or resets a relationship". Slaight (1999:43), views strategic sourcing as a process whereby organizations divide their total spending into categories and then classify the categories on the basis of the importance of that product and service, and on the complexity of the supplier marketplace. The organization and the supplier must then recognize that various relationships are required. At one end, the least strategic suppliers may be based on cost, while at the other, the most strategic suppliers may be chosen for their ability to create new business opportunities or technological advances. Targeting and searching for suppliers in such a formalized manner is what strategic sourcing is all about. Strategic sourcing leads organizations to join with suppliers, spur innovation, apply joint expertise to product development and create a genuine supply advantage. Roberts (2002:33), defines strategic sourcing as "the use of strategy to rule sourcing decisions". This implies that the supply/sourcing manager makes sourcing decisions consistent with the firm's long-term objectives. This requires careful evaluation of the current supply situation, understanding the organization's objectives and creating a relationship with suppliers that can help to meet those objectives.

Managing operating expense without losing competitive advantage requires upgrading the traditional purchasing concept to highly integrated supply chain management concept. (Zito, 2009). When we look to the traditional view of the role of purchasing departments, it is to solicit competitive bids and award the contract to the lowest bidder. Unfortunately, this method does not take into account the role of long-term supplier relationships and the opportunity to create an integrated supply chain with strategic partnerships for future purchases of goods and services (Roberts, 2002).

The objectives of strategic sourcing move far beyond the traditional belief that the primary goal of purchasing is to obtain goods and services in response to user requirements. Strategic sourcing is not regarded as a narrow functionalism, but a driving force behind organizations' long-term operational success (Russill 1997:20)

2.4.2. ACTIVITIES OF STRATEGIC SOURCING

As per the study made by Russill(1997), activities of strategic sourcing are listed as follows:

- Establish, manage and develop cross functional teams.
- Analyze the total supply market.
- Evaluate the current supply situation of the supply chain.

- Identify and evaluate the sourcing opportunities of the supply chain.
- Identify cost reduction opportunities from a purchasing and sourcing perspective.
- Formulate strategies for critical commodities of the supply chain.
- Analyze arrangements with the suppliers for the various requirements of the supply chain.
- Analyze the total procurement spending of the supply chain.
- Categorize products/services in terms of the importance and complexity of the market.
- Establish appropriate relationships with suppliers
- Apply "best practices" in the management of the suppliers.
- Make outsourcing decisions about the supply chain.
- Apply continuous tracking and performance management of the partners
- Identify total cost opportunities of the supply chain.

On the other hand, according to Anderson and Katz (1998), Strategic sourcing includes an extensive range of activities such as creating an overall strategy for sourcing, Developing Suppliers, Managing Supplier relationship, Initiating Early Supplier Involvement and Managing Contracts.In addition, Chopra &Meindl (2003), indicated that the activity of strategic sourcing also requires the elevation of traditional procurement function to modern strategic sourcing function. Chopra et al. (2003), said "Many companies have realized the need for elevating traditional procurement function to modern strategic sourcing for value addition across the supply chain".

Hence, in order to analyze the extent of Ethiopian Airlines strategic sourcing practice. By taking the activities listed by Anderson et al. (1998) and considering the need for elevating the traditional procurement function as stated by Chopra et al. (2003), on this study strategic sourcing practice constructs the activity of: Strategic Elevation of Purchasing Function, Supplier Development, Supplier Relationship Management, Early Supplier Involvement and Contract Management.

2.4.2.1. STRATEGIC ELEVATION OF PURCHASING FUNCTION

Business organizations across the world are under increasing pressure than ever to stay dynamic and responsive in all their competitive frontiers. Many companies have realized the need for elevating traditional procurement function to modern strategic sourcing for value addition across the supply chain. Sourcing costs signify 40 to 80 percent of the total cost of goods traded, and 30 to 50 percent of revenues a ratio that has remained constant in most industries for many years. Companies excelling

in strategic sourcing save almost10 to 20 times as much as it cost to operate their sourcing processes. The effort required to reduce 10 percent of the sourcing cost is much less than gaining similar amount of revenue (Chopra &Meindl, 2003).

As part of implementing strategic sourcing practice, senior executives are now seeing that the decision making processes through the purchasing department can have a profound impact on the financial viability of an organization (Reference for Business, 2012).

The responsibilities of purchasing have changed markedly over the last few decades, Purchasing focused heavily on the transactional elements of the procurement process. Purchasing was accepted as a support function that provides for the sourcing needs of other departments. Major changes are currently taking place within purchasing functions of firms. Purchasing is shifting its focus from daily procurement activities to long term, value-adding purchasing and supply chain initiatives (Kanyarat, 2008).

A highly skilled purchasing group equipped with the power and tool to take part in the strategic formation of a company can and does impact firm and eventually supply chain performance. Yet, several challenges have to be faced to enjoy these benefits. Companies need to accept purchasing as one of their primary and critical functions. Purchasing needs to be elevated to a level where it can provide input to the strategic direction of the company. (UngulLaptaned, 2010).

During the past two decades, the purchasing function has changed from playing a supporting role to becoming a strategic activity, and now makes a significant contribution to the competitive advantage of an organization (Quayle, 2002; Carr &Smeltzer, 1997)

2.4.2.2. SUPPLIER DEVELOPMENT

According to Matiwos (2013), a growing trend among firms that practice supply chain management is supplier development where firms assist existing or new suppliers to improve their processing capabilities, quality, delivery, and cost performance by providing the needed technical and financial assistance. Developing suppliers in this manner allows firms to focus more on core competencies, while outsourcing non-core activities to suppliers. Supplier development is defined as “any activity that a buyer undertakes to improve a supplier’s performance and /or capabilities to meet the buyer’s short and /or long time supply needs.

In a Supply chain with external actors itis important to think about that efficiency improvements have to consider the whole Supply chain. There is no good solution when the own company makes profit at the expense of another part for example a supplier. This is short-term profit and will for sure result in an increase of price in the long term. An individual, when optimizing its own success has to consider both how it best utilizes its internal resources and how it best benefits of collaborative efforts in the Supply chain (Simchi –Levi, 2000).

Supplier development is also important because of the following reasons; improves supplier performance, reduces costs, resolves serious quality issues, developing new routes to supply, improving business alignment between the supplier and the buying organization, developing a product or service not currently available in the marketplace and finally generating competition for a high price product or service dominating the marketplace. (Krause & Ellram, 1997)

2.4.2.3. SUPPLIER RELATIONSHIP MANAGEMENT

Supplier Relationship Management is a comprehensive approach to managing an organization's interactions with the firms that supply the products and services it uses. (Tobias and Peter, 2008).

Supplier Relationship Management (SRM) plays an important role in the reduction of costs and the optimization of performance. (Tobias et al., 2008).

Supplier relationship management has become a critical business process as a result of: competitive pressures; the need to consider sustainability and risk; the need to achieve cost efficiency in order to be cost competitive; and the need to develop closer relationships with key suppliers who can provide the expertise necessary to develop innovative new products and successfully bring them to market. Significant benefits are possible from better managing relationships with key suppliers. It has been shown that integration of operations with suppliers can improve firm performance (Swink, 2007; Singh & Power, 2009).

Suppliers are integral part of the supply chain of an organization, and management of suppliers requires specialized negotiating skills, as they are not a part of the organization. Suppliers have to be selected carefully, as they can have a very positive or a very adverse impact on the overall performance of the organization (Ramanathan, 2007).

Supplier relationship management is the process that defines how a company interacts with its suppliers. As the name suggests, this is a mirror image of customer relationship management (CRM). Just as a company needs to develop relationships with its customers, it also needs to foster relationships with its suppliers. The desired outcome is a win-win relationship where both parties benefit. (Supply Chain Management Institute, 2008).

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." (SAP. 2003,)

SRM focused on joint value creation based on trust, open communication and collaboration with a limited number of key suppliers with the Objective of Leveraging on supplier capabilities, reducing cost and security of supply. So far, procurement has always been responsible for running sourcing projects. Functional competencies like negotiation skills, market analyses, and cost & risk management were perceived as the key to success. However, SRM requires completely different skills like influencing, leadership and change management. Traditionally, buyers do not naturally have such skills or are not trained to develop them. World class SRM promotes Real time exchange of operational, tactical and strategic information with suppliers, has proper supplier performance measurement system and requires adequate knowledge and/ or skill on different functional competencies, like: negotiation skill, market analysis. (Remko, 2013).

Long-term relationships with key suppliers transaction cost theory predicts that as environmental uncertainty and frequency of transactions between organizations increase, firms prefer vertical integration in order to reduce transaction costs (Williamson 1989). These costs include the costs associated with negotiating, implementing, coordinating, monitoring, adjusting, enforcing and terminating exchange agreements (Pint & Baldwin 1997).

2.4.2.4. EARLY SUPPLIER INVOLVEMENT

Early supplier involvement is defined as a process in which suppliers provide information and directly participate in decision-making for purchased items in the buying company's new product/process/service development. This involvement can range from consultation for information to full responsibility for developing components or systems as part of the project and can occur in any point in the process. Early supplier involvement is expected to enable improvement of quality, access and application of technology while also reducing costs and development time of the project (Mikkola and Skjøtt-Larsen, 2006; Ragatz, 1997; Wynstra, 2001).According to Petersen (2005), early supplier involvement is "an important coordinating mechanism for decisions that link product design, process design and supply chain design together" (Petersen et al., 2005:372).

Wynstra.(2001) summarized the potential benefits of supplier involvement as the possibility of using the "extra and specialized development potential embedded in the skills, competencies and knowledge of suppliers", which "can make product development more efficient, by decreasing input (less development costs, less design changes, less engineering hours) and increasing the output (a better product, a more innovative product, a faster market introduction)".

ESI also enables shorter product development cycle time, better quality of the products and lower input and production costs. (Petersen et al. 2005)

2.4.2.5. CONTRACT MANAGEMENT

Once contracts are in place, vendor performance against these contracts must be measured and managed. Because companies are narrowing down their base of suppliers, the performance of each supplier that is chosen becomes more important. A particular supplier may be the only source of a whole category of products that a company needs and if it is not meeting its contractual obligations, the activities that depend on those products will suffer (Matiwos, 2013).

A sound contract management of a project revolves around control of cost, time, quality and resources. Cost control means the execution and completion of the project within the agreed time schedule; quality control means execution of the project in conformance with technical requirement and specification; resource control refers to the management resources personnel, equipment, and supplies. (CIPS, 2007)

2.5 ETHIOPIAN AIRLINES STRATEGIC SOURCING OPERATIONAL FUNCTIONS AND ACTIVITIES

According to Ethiopian Airlines Operational Manual, Ethiopian Airlines Strategic Sourcing practice has the following operational functions;

- Develop and implement strategies that will enable Ethiopian attain cost savings. Conducts effective marketplace intelligence, interprets the data correctly, and use the analysis to develop effective strategies to attain desired outcomes for the betterment of P&SCM and, ultimately, ET. Develop supply base, including Low Cost Country qualified suppliers. Manage supply and demand needs to achieve proper "balance".
- Ensure that the supply base meets desired KPI performance standards and achieve improvements where necessary. Negotiates agreements or purchase orders, amendments and manage contract renewals. To manage Supplier Relationships including key supplier governance. Additionally in Ethiopian Airlines Strategic Sourcing practice is responsible to conduct the following operational activities.
- Conduct marketplace intelligence to formulate effective commodity strategy. Validate data gathered with supply base and determine major market factors or drivers that should be considered in the formulation of commodity strategy.
- Initiate purchase consolidation projects including tender and coordinate with users and service providers to keep minimum number of suppliers and optimum stock holding.
- Identify and attain cost savings as described above. Utilize all means of tools to communicate with suppliers regarding their performance, identify corrective action plans, implement actions, measure results and adjust as/where appropriate.
- Conduct vendor analysis as required to develop sound sourcing strategies. Perform marketplace intelligence. Analyze supply conditions and evaluate to ET's demand requirements / expectations/ requirements.
- Support cross-functional teams i.e. Engineering, Supply Chain, Marketing etc
- Play a pivotal role in the identification and selection of Spend Areas that could produce cost reductions or process improvements as well as prioritizing the various spend areas so that the initial areas to evaluate match the goals and objectives of the company

2.6 RESEARCH FRAMEWORK

Conceptual framework is a set of wide ideas and theories that enables the researcher to identify problems in the study, frame questions and discuss the relevant literature for the study (Stratman& Roth, 2004). The independent variable of the study is strategic sourcing practice consisting :Strategic Elevation of Purchasing Function, supplier development, supplier relationship management, Early Supplier Involvement (ESI) and Contract Management, while the dependent variable of the study is o operational Efficiency consisting: Delivery In Time, Short Lead Time, Right Quality and Lowest Possible Cost.

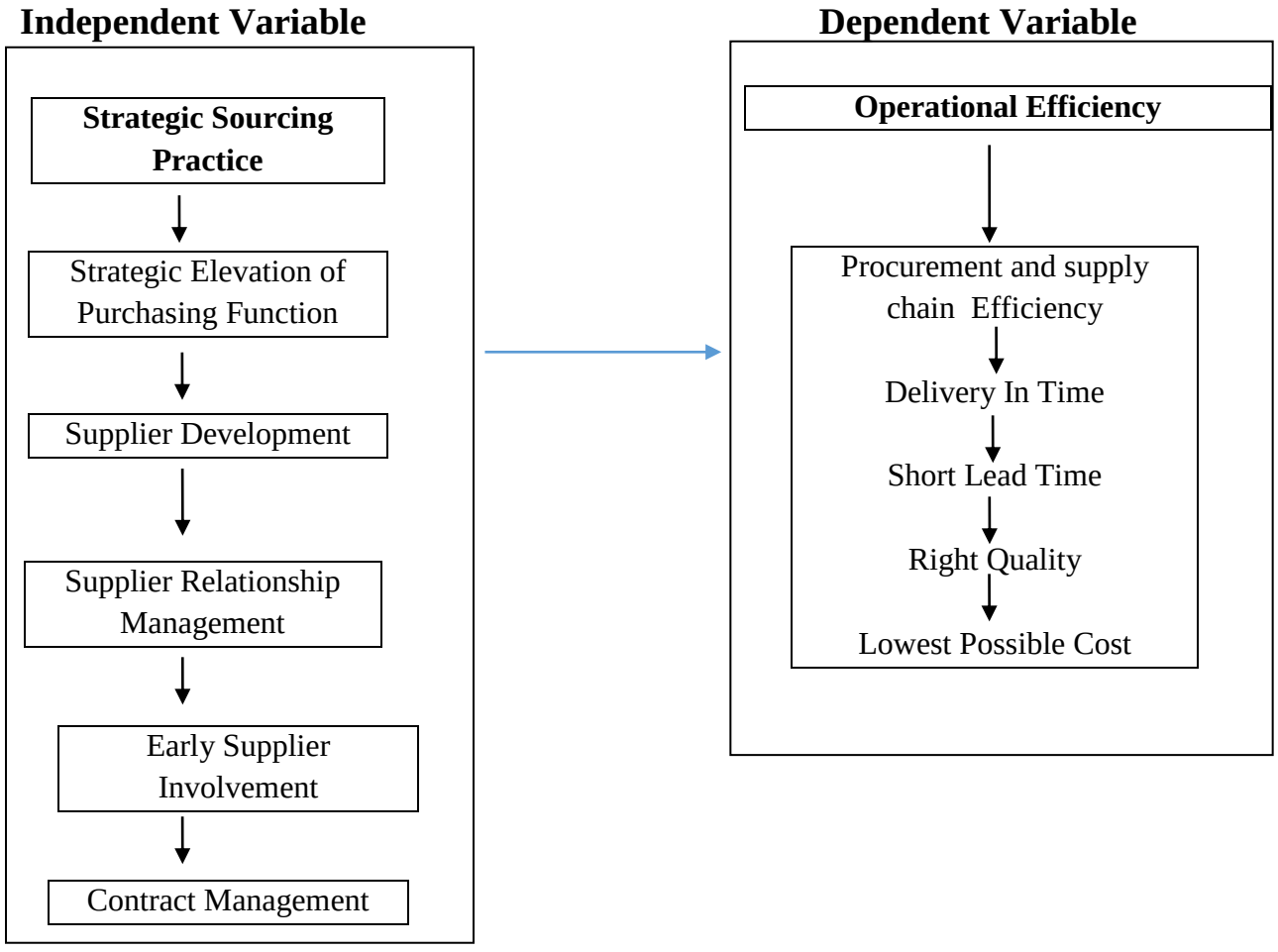

Figure 1: the research model adopted from (Carren. et al., 2015) and (Kanyarat et al., 2008)

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

This thesis describes the methodologies that were used in this study: the choice of particular research designs, data type and source of data, research approach, data gathering technique and instruments, sampling and sampling techniques and data analysis techniques along with an appropriate justification associated with each approach

3.1 RESEARCH DESIGN

This study adopted a descriptive and causal/explanatory case study design to justify the relationship between the independent and dependent variables. A case study is a method used to scale down a wide field of research into one easily researchable topic Kothari (2008). The design enabled the researcher to get the information pertaining current status of the problem under study and describe it in terms of the dependent and independent variables. The descriptive survey used to acquire information so that to analyze the extent of strategic sourcing practice and operational efficiency of the case study. Explanatory or analytical research used to understand phenomena by discovering and measuring causal relations among the independent and dependent variable. Accordingly, a quantitative approach is used to answer the research questions. Since the research objective is to analyze the effect of strategic sourcing practice on operational efficiency, it can be measured objectively. And Chow (1994:26) have noted the importance of quantitative approach in logistics and supply chain management research.

3.2 SAMPLE AND SAMPLING TECHNIQUES

According to Hair et al. (2010), target population is said to be a specified group of people or object for which questions can be asked or observation are made to develop the required data structures and information. Therefore, for this study, the target populations are employees of Ethiopian Airlines, and since this paper has a supply chain management focus and the researcher believed that supply chain personnel were deemed to have the best knowledge on supply chain issues. Therefore, for this study, the target populations are represented by Ethiopian Airlines procurement and supply chain

division professional staff. In general Ethiopian Airlines procurement and supply chain division has 205 staffs.

From the 205 Ethiopian Airlines procurement and supply chain division staffs, 60 of them are temporary daily laborers, hence, they will be excluded from the population size. Thus the total population size for this study was 145.

Therefore, In order for the research to be comprehensive, it is important to ensure a representative sample is drawn which is also adequate for the data collection instrument. Accordingly, the researcher has used confidence interval of 95%, which is the level of certainty whether the response for each question is the true answer or not and 3% margin of error which is the amount of error from difference in the responses the researcher can tolerate when drawing a conclusion from the data. The margin of error is lowered to 3% so that the conclusions drawn from the sample is a representative of the target population. The response distribution probability is set to 90% because supply chain efficiency issue is a major concern for the supply chain division group, the respondents from this group will have 90% probability of agreeing than disagreeing for each question. Based on these parameters the researcher has consulted a sample size determination website, Raosoft. After consulting the below mentioned website, 89 found to be the representative sample for the study.

3.3 SOURCES AND TYPES OF DATA

In this study, both primary and secondary data's were used. The primary data was gathered through field survey using standard questionnaires. Secondary data was obtained through document analysis, annual abstracts, records, research papers, journals, books and online resources.

3.4 DESCRIPTION OF VARIABLES

As it is described on the research conceptual framework, the independent variable is strategic sourcing practice containing five constructs. These are: Strategic Elevation of Purchasing Function, Supplier Development, Supplier Relationship Management, Early Supplier Involvement and Contract Management.

On the other hand the dependent variable of the study is operational Efficiency containing four constructs namely: Delivery in Time, Short Lead Time, Right quality and Low cost.

3.5 INSTRUMENTS OF DATA COLLECTION

Questionnaire techniques were used to collect primary data, open ended and closed ended questionnaire were used to collect information. Besides, different sources of documents were used to collect secondary data. The questionnaires were prepared with covering letter that explains the purpose of study and gives general instructions.

3.6 VALIDITY AND RELIABILITY

Assessing Reliability

According to Bryman and Bell (2007), reliability analysis is concerned with the internal consistency of the research instrument. As multiple items in all constructs were used, the internal consistency/reliabilities of Strategic sourcing practices and Supply Chain efficiency were assessed with Cronbach's Alpha and the reliability values for all constructs are confirmed as greater than 0.7, which are considered acceptable (Nunnally, 1978). The following table shows the summary of reliabilities of all construct.

Table 1 Reliability Analysis for Strategic Sourcing Practices and Supply Chain Efficiency

VARIABLE	RELIABILITY
Strategic Sourcing Practices	
Strategic Elevation of Purchasing Function	
The Top Management gives emphasis for the strategic role of the purchasing function.	
The role of purchasing function is visible within the firm	
The Top Management acknowledges the Importance of purchasing function relative to other function in the firm	$\alpha = 0.988$

The Top Management involves procurement professionals in corporate-level strategic planning	
Supplier Development	
We provide regular technical or financial assistance for our suppliers to enable them improve their product quality	
We provide regular technical or financial assistance for our suppliers to enable them improve their lead-times	
We provide regular technical or financial assistance for our suppliers to enable them improve their product cost/ pricing	α =0.994
We provide regular technical or financial assistance for our suppliers to enable them improve their delivery reliability	
We reward good performing suppliers by Promising and considering in future businesses	
Supplier Relationship Management	
We exchange real time operational, tactical and strategic information with our suppliers	
We took different trainings to develop adequate knowledge and/ or skill on different functional competencies, like: negotiation skill, market analysis.	α = 0.998
We conduct supplier performance measurement system to manage our suppliers	
Our organization develops a long term partnership with suppliers who supply strategic items	
Early Supplier Involvement	

We involve suppliers early before contract award	α = 0.976
Contract Management	
We develop contractual agreement with most of our suppliers	α = 0.999
After signing the contract agreement we evaluate the performance of the supplier	
Management of disputes with suppliers is incorporated on the contract document	
Operational Efficacy	
On Average ____% of our customers' orders are delivered in time.	α = 0.997
On Average we provide ____% of our customers' orders with the possible short lead-time.	
On Average we provide ____% of our customer orders with the right quality.	
On Average we provide ____% of our customer orders with the lowest possible cost.	

Analysis of Validity

Malhotra (2010) mentioned about three types of validity in his study: content validity, predictive validity, and construct validity. This study addressed content validity through the review of literature and adapting instruments used in previous research specifically by Carren. et al., (2015) and Kanyarat et al., (2008) for Strategic sourcing practice and Supply Chain Efficiency respectively.

3.7 MEASUREMENT OF VARIABLES

Effective measurement instrument should cover all content domains of constructs (Parasuraman, 1991). As in any empirical study, it will not be possible to test a relationship without valid and reliable measurement instruments for the constructs involved in the relationships. The measurement instruments for the Strategic sourcing practices from (Carren. et al.,2015) and measurement instruments for Supply Chain efficiency form (Kanyarat et al.,2008) proposed model are adopted with modifications from earlier studies and available literatures. Thus, to analyze the extent of Strategic sourcing practices on the case study company, five points Likert rating scale ranging from Never (1)

to Always(5) have been used in the study. As well to analyze the case study company Supply Chain efficiency, a percentage measurement ranging from 0% to 100% have been used in the study. Accordingly, the total items of Strategic sourcing practices reaches 18 and items for Supply Chain efficiency reaches 4. The questionnaire has three parts and is prepared in English version. The first part of the questionnaire is about the respondents' personal and professional information. The second part focuses on analyzing the level of Strategic sourcing practices and final part focuses on analyzing operational efficiency of Ethiopian Airlines.

3.8 DATA ANALYSIS AND PRESENTATION

In order to answer the research questions, the researcher used both Descriptive and Inferential Statistic to analyze the collected data. Descriptive Statistic in term of frequency, percentages, mean, and standard deviation were used to analyze the extent of strategic sourcing practice and supply chain efficiency of the case study. Inferential statistics such as Pearson's Correlation coefficient and multiple linear regressions were used to analyze the relationship between the independent variable (Strategic sourcing practice) and dependent variable (Supply Chain efficiency). Accordingly with the intention of undertaking the above stated statistical analysis, a program called SPSS (Statistical Package for Social Sciences) version 10 were employed by the researcher.

In statistics, linear regression is an approach for modeling the relationship between a dependent variable Y and one or more explanatory variables (or independent variables) denoted X. The case of one explanatory variable is called simple linear regression. For more than one explanatory variable, the process is called multiple linear regressions.

On this research paper both the Independent variable (Strategic Sourcing Practice) and Dependent variable (Supply Chain Efficiency) contains five and four sub-variables respectively. Strategic Sourcing Practice contains; Strategic Elevation of Purchasing Function (SEP), Supplier Development (SD), Supplier Relationship Management (SRM), Early Supplier Involvement (ESI) and Contract Management (CM). And Supply Chain Efficiency contains; Delivery in time, Short lead-time, Right quality and Low cost/price. Therefore in line with the research objective, by conducting multiple linear regression analysis, the researcher one by one analyzed the relationship between all components of the independent variable with one component of the dependent variable. The organization of the variables is as follows

Delivery in time as Y_1 and **SEP** as X_1, **SD** as X_2, **SRM** as X_3 , **ESI**as $X_4$and **CM** as X_5

$$Y_1 = B \pm C_1 X_1 + C_2 X_2 + C_3 X_3 + C_4 X_4 + C_5 X_5 + e$$

Short lead-time as Y_2 and **SEP** as X_1, **SD** as X_2, **SRM** as X_3, **ESI**as $X_4$and **CM** as X_5

$$Y_2 = B \pm C_1 X_1 + C_2 X_2 + C_3 X_3 + C_4 X_4 + C_5 X_5 + e$$

Right Quality as $Y_3$and **SEP** as X_1, **SD** as X_2, **SRM** as X_3, **ESI**as $X_4$and **CM** as X_5

$$Y_3 = B \pm C_1 X_1 + C_2 X_2 + C_3 X_3 + C_4 X_4 + C_5 X_5 + e$$

Low cost/price as $Y_4$and **SEP** as X_1, **SD** as X_2, **SRM** as X_3, **ESI**as $X_4$and **CM** as X_5

$$Y_4 = B \pm C_1 X_1 + C_2 X_2 + C_3 X_3 + C_4 X_4 + C_5 X_5 + e$$

CHAPTER FOUR: DATA ANALYSIS & INTERPRETATION

4.1.INTRODUCTION

As discussed in previous chapter, the aim of this study is to examine the Effect of Strategic Sourcing practices on Supply Chain Efficiency in the case of Ethiopian Airlines.

Therefore, the findings of the study are presented and discussed in this Chapter. To measure the extent of strategic sourcing practice of the case study, the questionnaire were developed in five scales ranging from five to one; where 5 represents “Always”, 4 “Very often”, 3 “Sometimes”, 2 “Rarely”, and 1 “Never”. In addition to measure the case study’s Supply Chain efficiency, the questionnaire was developed in the form of open ended format by presenting the contracts to be answered in the form of percentage (from 0% to 100%). In order to assess the extent of Strategic sourcing practice and the level of Supply chain efficiency under the case study company descriptive statistics were conducted. In addition, to assess the relationship between Strategic sourcing practice and Supply chain efficiency, Correlation and regression analysis were conducted. A total of 89 questionnaires were distributed to employees and 86(96%) questionnaire were obtained valid and used for analysis. The collected data were presented and analyzed using SPSS (version 20) statistical software.

4.2.DEMOGRAPHIC INFORMATION OF RESPONDENTS

Under this section, the research analysis focused on the examination of the targeted sample members / respondents personal and professional profiles. Analyzing the respondents profile will provide an insight whether or not the collected data is gathered from a group of people who has an adequate knowledge on the subject.

4.2.1. PROFILES OF RESPONDENTS

Table 2: Age of Respondents

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	From 21-30 years	46	51.7	53.5	53.5
	From 31 to 40 years	34	38.2	39.5	93.0
	From 41- 50 years	6	6.7	7.0	100.0
	Total	86	96.6	100.0	
Missing	System	3	3.4		
Total		89	100.0		

As it can be seen from Table 2: 53.5% of the respondents are between the age of 21-30 years, 39.5% are between the age of 31- 40 years and only 7 % of the of the respondents are between the age of 41-50 years. Hence, out of the 86 questionnaires which are received and analyzed, 83 of them are collected from the respondents who are at the age of between 21and40 years. This can help to understand that the collected data is a representative of the productive group of the company.

Table 3: Education Level of Respondents

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First Degree	76	85.4	88.4	88.4
	Second degree	10	11.2	11.6	100.0
	Total	86	96.6	100.0	
Missing	System	3	3.4		
Total		89	100.0		

As it can be seen from Table 3: 88.4 % of the respondents are first degree holders and the remaining 11.4% of the respondents are second degree holders. Hence, this can help to understand that the research primary data is collected from a group of people who has good educational background to have the required knowledge on supply chain phenomena.

Table 4: Work Experience of Respondents

Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 to 5 years	35	39.3	40.7	40.7
	5 to 10 years	26	29.2	30.2	70.9
	10 to 15 years	20	22.5	23.3	94.2
	15 to 20 years	5	5.6	5.8	100.0
	Total	86	96.6	100.0	
Missing	System	3	3.4		
Total		89	100.0		

As it can be seen from Table 4: 40.7 % of the respondents have 1 to 5 years of working experience,30.2 % of the respondents have 5 to 10 years of working experience,23.3 % of the respondents have 10 to 15 years of working experience and 5.8 % of the respondents have 15 to 20 years of working experience. Hence, around 59.3% of the respondents have more than 5 years of work experience. Therefore, out of the 86 questionnaires which are used for the research analysis, 51 of them are distributed to a group of people who have at least 5 years of work experience. Hence this can imply that most of the respondents have the required working experience to describe the case study's strategic sourcing practice and level of supply chain efficiency.

Table 5: Professional Position of Respondents

Position

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Officer	35	39.3	40.7	40.7
	Senior Officer	39	43.8	45.3	86.0
	Supervisor	7	7.9	8.1	94.2
	Manager	4	4.5	4.7	98.8
	Director	1	1.1	1.2	100.0
	Total	86	96.6	100.0	
Missing	System	3	3.4		
Total		89	100.0		

As it can be seen from table 5: 40.7% of the respondents are Procurement Officers and 45.3% of the respondents are Senior Procurement Officers. The data gathered from these two group of people will help to have the right information which reflects, the actual strategic sourcing practice that are followed by Ethiopian supply chain professionals in their day to day activity and the level of supply chain efficiency the supply chain professionals actually achieve while processing and handling customers order. In addition, 8.1 % of the respondents are Supervisors, 4.7 % of the respondents are Managers and 1.2 % of the respondent is the Supply Chain Director. The data gathered from these three groups will help to have right information which reflects sectional, departmental and divisional level activities, practices and achievements.

4.3.DESCRIPTIVE STATISTICS DATA ANALYSIS

Descriptive data analysis is used to determine the extent of Ethiopian Airlines strategic sourcing practice and the extent of Ethiopian airlines supply chain efficiency.

4.3.1. IMPLEMENTATION LEVEL OF STRATEGIC SOURCING PRACTICE

Under this sub section, descriptive data analysis is used to determine the extent of Ethiopian Airlines strategic sourcing practice. Accordingly the respondents were asked to select one of the alternatives, which represent their organization strategic sourcing practices in view of Strategic Elevation of Purchasing Function, Supplier Development, Supplier Relationship Management, Early Supplier Involvement and Contract Management, from the questions arranged in five point Likert scale method, where, 1 is “Never”, 2 is “Rarely”, 3 is “Sometimes”, 4 is “Very often” and 5 is “Always”.

4.3.1.1.STRATEGIC ELEVATION OF PURCHASING FUNCTION (SEP)

The respondents were asked to describe, Ethiopian Airlines practice on Strategic elevation of purchasing function in terms of the top management emphasis for the strategic role of the purchasing function, the visibility of the role of purchasing function within the firm, the top management attitude towards understanding the importance of purchasing function relative to other function in the firm and the involvement of Procurement professionals in corporate-level strategic planning.

Table 6: Extent of Strategic Elevation of Purchasing Function

Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
The Top Management gives emphasis for the strategic role of the purchasing function.	86	1.00	5.00	3.7209	1.13398
The role of purchasing function is visible within the firm	86	1.00	5.00	3.7326	1.08925
The Top Management acknowledges the Importance of purchasing function relative to other function in the firm	86	1.00	5.00	3.6977	1.14860
The Top Management involve Procurement professionals in corporate-level strategic planning	86	1.00	5.00	3.7326	1.07839
Valid N (listwise)	86				

As it can be seen from table 6, the mean for strategic elevation of purchasing function practice of Ethiopian Airlines ranges from 3.69 to 3.73 which indicates that very often Ethiopian Airlines top management: gives emphasis for the strategic role of the purchasing function, acknowledges the importance of purchasing function relative to other function in the firm, involve procurement professionals in corporate-level strategic planning and that very often the role of purchasing function is visible within the firm.

As it is indicated on the literature review; Kanyarat (2008), states that the responsibilities of purchasing have changed markedly over the last few decades, Purchasing focused heavily on the transactional elements of the procurement process. Purchasing was accepted as a support function that provides for the sourcing needs of other departments. In addition according to Chopra et al.(2003) Business organizations across the world are under increasing pressure than ever to stay dynamic and

responsive in all their competitive frontiers. Many companies have realized the need for elevating traditional procurement function to modern strategic sourcing for value addition across the supply chain. Sourcing costs signify 40 to 80 percent of the total cost of goods traded, and 30 to 50 percent of revenues a ratio that has remained constant in most industries for many years. Companies excelling in strategic sourcing save almost 10 to 20 times as much as it cost to operate their sourcing processes. The effort required to reduce 10 percent of the sourcing cost is much less than gaining similar amount of revenue. Therefore, the overall average result of the descriptive statistics is indicating that strategic elevation of purchasing function practice of Ethiopian Airlines is at a good level

4.3.1.2.SUPPLIER DEVELOPMENT (SD)

The respondents were asked to describe Ethiopian Airlines Supplier Development practice in terms of the technical and financial assistance the firm provides to its suppliers to improve the suppliers' product quality, lead time, cost and delivery reliability and the practice of rewarding good performing suppliers by Promising and considering in future businesses

Table 7: Extent of Supplier Development Practice

Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
We provide regular technical or financial assistance for our suppliers to enable them improve their product quality	86	1.00	4.00	2.2558	.78495
We provide regular technical or financial assistance for our suppliers to enable them improve their lead-times	86	1.00	4.00	2.2674	.77345
We provide regular technical or financial assistance for our suppliers to enable them improve their product cost/ pricing	86	1.00	4.00	2.2907	.78014
We provide regular technical or financial assistance for our suppliers to enable them improve their delivery reliability	86	1.00	4.00	2.2791	.77689
We reward good performing suppliers by Promising and considering in future 1businesses	86	1.00	4.00	2.2674	.77345
Valid N (listwise)	86				

As it is seen from table 7, the mean value for all variables under supplier development practice, is 2.2 which shows that, Ethiopian Airlines rarely provide technical or financial assistance to its suppliers.

According to Matiwos (2013), a growing trend among firms that practice supply chain management is supplier development where firms assist existing or new suppliers to improve their processing capabilities, quality, delivery, and cost performance by providing the needed technical and financial assistance. In addition, Krause et al (1997) elaborate the importance of Supplier development with the following reasons; supplier development improves supplier performance, reduces costs, resolves serious quality issues, developing new routes to supply, improving business alignment between the supplier and the buying organization, developing a product or service not currently available in the marketplace and finally generating competition for a high price product or service dominating the marketplace. As mentioned earlier, despite the importance of supplier development practice in the supply chain, Ethiopian Airlines has a weak Supplier development practice.

4.3.1.3.SUPPLIER RELATIONSHIP MANAGEMENT (SRM)

The respondents were asked to describe Ethiopian Airlines Supplier Relationship Management Practice in terms of: developing long term partnership with suppliers, the level of information exchange between the firm and suppliers, the level of personnel's adequate knowledge and/ or skill on different functional competencies, like: negotiation skill, market analysis and the availability of suppliers performance measurement system.

Table 8: Extent of Supplier Relationship Management Practice

Descriptive Statistics

	N	Min	Maxi	Mean	Std. Deviation
Our organization develops a long term partnership with suppliers who supply strategic items	86	1.00	5.00	3.5233	1.15531
We exchange real time operational, tactical and strategic information with our suppliers	86	1.00	5.00	3.5581	1.15407
We took different trainings to develop adequate knowledge and/ or skill on different functional competencies, like: negotiation skill, market analysis.	86	1.00	5.00	3.5581	1.15407
We conduct supplier performance measurement system to manage our suppliers	86	1.00	5.00	3.5581	1.15407
Valid N (listwise)	86				

As it is seen from table 8, the mean value for all variables of Supplier Relationship Management Practice is3.5 which indicate that Ethiopian Airlines very often conduct Supplier Relationship Management Practice.

As it is stated on the literature review, Supplier relationship management has become a critical business process as a result of competitive pressures; the need to consider sustainability and risk; the need to achieve cost efficiency in order to be cost competitive; and the need to develop closer relationships with key suppliers who can provide the expertise necessary to develop innovative new products and successfully bring them to market. Significant benefits are possible from better managing relationships with key suppliers. It has been shown that integration of operations with suppliers can improve firm performance (Swink et al., 2007; Singh & Power, 2009). Supplier Relationship Management (SRM) plays an important role in the reduction of costs and the optimization of performance (Tobias et al., 2008). World class SRM promotes Real time exchange of operational, tactical and strategic information with suppliers, has proper supplier performance

measurement system and requires adequate knowledge and/ or skill on different functional competencies, like: negotiation skill, market analysis (Remko, 2013). Therefore even though Ethiopian Airlines have some level of Supplier Relationship Management Practice, considering the potential benefit of the Supplier Relationship Management, the extent of Ethiopian airlines Supplier Relationship Management Practice needs some more improvement.

4.3.1.4.EARLY SUPPLIER INVOLVEMENT (ESI)

The respondents were asked to describe Ethiopian Airlines Early Supplier Involvement Practice in terms of the involvement of suppliers on new product specification development and involvement of suppliers early before contract award.

Table 9: Extent of Early Supplier Involvement Practice

Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
We involve our suppliers to provide information on new product specification development	86	1.00	5.00	2.9535	1.29167
We involve suppliers early before contract award	86	1.00	5.00	2.9651	1.28748
Valid N (listwise)	86				

As it is seen from table 9, the mean value for all variables of Early Supplier Involvement Practice is 2.9 which show Ethiopian Airlines sometimes involves supplies early to get their information on new product development and early before contract award.

Wynstra. (2001) summarized the potential benefits of supplier involvement as the possibility of using the “extra and specialized development potential embedded in the skills, competencies and knowledge of suppliers”, which “can make product development more efficient, by decreasing input (less development costs, less design changes, less engineering hours) and increasing the output (a

better product, a more innovative product, a faster market introduction)". ESI also enables shorter product development cycle time, better quality of the products and lower input and production costs. (Petersen et al. 2005).

Therefore, when looking in to Ethiopian Airlines Early Supplier Involvement practice, it is on the average level and it is not sufficient to enjoy the potential benefits of ESI.

4.3.1.5.CONTRACT MANAGEMENT (CM)

The respondents were asked to describe Ethiopian Airlines contract Management practice in terms of contractual agreement development, management of disputes with supplier and evaluation of supplier performance after signing of contract agreement.

Table 10: Extent of Contract Management Practice

Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
We develop contractual agreement with most of our suppliers	86	1.00	5.00	3.6163	1.14961
Management of disputes with suppliers is incorporated on the contract document	86	1.00	5.00	3.6163	1.14961
After signing the contract agreement we evaluate the performance of the supplier	86	1.00	5.00	3.6279	1.14836
Valid N (listwise)	86				

As it is seen from table 10, the mean value for all variables under contract management practice is 3.6 which show Ethiopian Airlines very often conducts contract management practice. According to Matiwos (2013), once contracts are in place, vendor performance against these contracts must be measured and managed. Because companies are narrowing down their base of suppliers, the performance of each supplier that is chosen becomes more important. A particular supplier may be

the only source of a whole category of products that a company needs and if it is not meeting its contractual obligations, the activities that depend on those products will suffer.

A sound contract management revolves around control of cost, time, quality and resources. Cost control means the execution and completion of the project within the agreed time schedule; quality control means execution of the project in conformance with technical requirement and specification; resource control refers to the management resources personnel, equipment, and supplies (CIPS, 2007). Therefore the level of contract management practice at Ethiopian Airlines is at good level.

4.3.2. LEVEL OF OPERATIONAL EFFICIENCY

Under this sub section, descriptive data analysis is used to determine the Level of Ethiopian Airlines Supply Chain Efficiency. Accordingly the respondents were asked to measure the supply chain efficiency using percentage figures ranging from 0% to 100% for all of the four supply chain efficiency variables namely: Delivery in time, Short lead time, Quality and Low cost/Pri

Table 11: Level of operational Efficiency

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
On Average % of our customer orders are delivered with	86	18.43	97.00	70.1730	25.00065
On Average % of our customers' orders are delivered in time.	86	20.00	99.00	72.9813	25.16612
On Average % of our customers' orders are delivered with the possible short lead-time.	86	20.00	100.00	74.2519	24.84936
On Average % of our customer orders are delivered with the lowest possible cost.	86	25.33	100.00	75.6431	24.17829
Valid N (listwise)	86				

As it can be seen from table 11; the man value for the first variables is 70.17. This means on average the existing supply chain practice of Ethiopian Airlines delivers or fulfills 70.17% of its customer's order with the right quality. On the other hand this shows that 29.83% of the customers' orders may have or will experience some quality issue.

When looking for the second variable, the mean value is 72.98. This means on average Ethiopian Airlines Supply Chain delivers 72.98% of its customers' orders on time. On the other hand the remaining 27.02% of customer's orders may or will experience delay in delivery.

The mean value for the third variable is 74.25. This means that on average 74.25% of customer's orders are delivered or fulfilled with short lead time. On the other hand the remaining 25.75% of customer's orders may have long lead time.

The mean value for the final variable is 75.64. This means that on average Ethiopian Airlines Supply Chain delivers/fulfills 75.64% of its customer's orders with low cost/price. On the other hand Ethiopian Airlines Supply Chain may have the difficulty to deliver the remaining 24.36% of its customers' orders with low cost/price.

4.4. INFERENTIAL STATISTICS DATA ANALYSIS

On the pervious section of the analysis, descriptive statistics data analysis was used to understand the extent of Ethiopian Airlines Strategic Sourcing Practice and level of Supply Chain Efficiency. Under this sub section inferential statistics data analysis is conducted in order to determine; if there is a relationship between the Independent variable, Strategic Sourcing Practice, and the Dependent variable, Supply Chain Efficiency and to determine the level and type of relationship between the independent and dependent variable.

After analyzing the existing relationship between the two variables, another inferential statistics data analysis is conducted to determine the effect the independent variable has on the dependent variable.

4.4.1. PEARSON CORRELATION

Correlations are the measure of the linear relationship between two variables. A correlation coefficient has a value ranging from -1 to 1. Values that are closer to the absolute value of 1 indicate that there is a strong relationship between the variables being correlated whereas values closer to 0 indicates that there is little or no linear relationship. Therefore on this research, Pearson Correlation analysis is conducted to determine the relationship between the Independent variable, Strategic Sourcing Practice, and the Dependent variable, Supply Chain Efficiency. In order to determine the level of relationship between variables, the researcher followed Evans (1996), suggestion for the absolute value of "r" which is; 0.00-0.19 "very weak", 0.20-0.39 "weak", 0.40-0.59 "moderate", 0.60-0.79 "strong" and 0.80-1.0 "very strong

4.4.1.1.PEARSON CORRELATION BETWEEN STRATEGIC SOURCING PRACTICE AND OPERATIONAL EFFICIENCY

The below table shows the result of Pearson Correlation between all Strategic Sourcing practice variables (Strategic Elevation of Purchasing Function, Supplier Development, Supplier Relationship

Management, Early Supplier Involvement and Contract Management) and all operational Efficiency variable (Delivery in Time, short lead time , quality and low cost/price).

Table 12: Pearson Correlation between Strategic Sourcing practice and operational efficiency

Correlations

		(SEP)	(SD)	(SRM)	(ESI)	(CM)
Delivery in time	Pearson Corr	.758**	.486**	.817**	.419**	.716**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	86	86	86	86	86
Short lead-time	Pearson Corr	.751**	.479**	.824**	.416**	.728**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
Short lead-time	N	86	86	86	86	86
Right quality	Pearson Corr	.734**	.489**	.822**	.438**	.720**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
Right quality	N	86	86	86	86	86
Low cost/ price.	Pearson Corr	.738**	.490**	.819**	.415**	.737**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
Low cost/ price.	N	86	86	86	86	86

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

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

As it can be seen from table 12; the p-value, denoted by “Sig. (2-tailed)”, is 0.00 which means the relationships between the variables are statistically significant because the p-value is less 0.05.

The Pearson correlation value for SEP (Strategic Elevation of Purchasing Function) with Delivery in time is 0.758. The result shows that there is a strong and positive relation between SEP and one of the Supply Chain Efficiency variables, Delivery in time. The Pearson correlation value for SD (Supplier Development) with Delivery in time is 0.486.The result shows that there is moderate and positive relation between SD and Delivery in time. The Pearson correlation value for SRM (Supplier Relationship Management) with Delivery in time is 0.817.The result shows that there is a very strong and positive relation between SRM and Delivery in time. The Pearson correlation value for ESI (Early Supplier Involvement) with Delivery in time is 0.419.The result shows that there is a moderate and positive relation between ESI and Delivery in time. The Pearson correlation value for CM (Contract Management) with Delivery in time is 0.716. The result shows that there is a strong and positive relation between CM and Delivery in time.

The Pearson correlation value for SEP (Strategic Elevation of Purchasing Function) with short lead time is 0.751. The result shows that there is a strong and positive relation between SEP and one of the Supply Chain Efficiency variables, Short Lead Time. The Pearson correlation value for SD (Supplier Development) with short lead time is 0.479. The result shows that there is a moderate and positive relation between SD and Short Lead Time. The Pearson correlation value for SRM (Supplier Relationship Management) with short lead time is 0.824.The result shows that there is a very strong and positive relation between SRM and Short Lead Time. The Pearson correlation value for ESI (Early Supplier Involvement) with short lead time is 0.416.The result shows that there is a moderate and positive relation between ESI and Short Lead Time. The Pearson correlation value for CM (Contract Management) with short lead time is 0.728.The result shows that there is a strong and positive relation between CM and Short Lead Time.

The Pearson correlation value for SEP (Strategic Elevation of Purchasing Function) with right quality is 0.734. The result shows that there is a strong and positive relation between SEP and one of the Supply Chain Efficiency variables, Right Quality. The Pearson correlation value for SD (Supplier Development) with right quality is 0.489. The result shows that there is a moderate and positive relation between SD and Right Quality. The Pearson correlation value for SRM (Supplier Relationship Management) with right quality is 0.822. The result shows that there is a very strong and positive relation between SRM and Right Quality. The Pearson correlation value for ESI (Early Supplier Involvement) with right quality is 0.438.The result shows that there is a moderate and

positive relation between ESI and Right Quality. The Pearson correlation value for CM (Contract Management) with right quality is 0.720.The result shows that there is a strong and positive relation between CM and Right Quality.

The Pearson correlation value for SEP (Strategic Elevation of Purchasing Function) with low cost/price is 0.738. The result shows that there is a strong and positive relation between SEP and one of the Supply Chain Efficiency variables, Low cost/price. The Pearson correlation value for SD (Supplier Development) with low cost/price is 0.490. The result shows that there is a moderate and positive relation between SD and Low cost/price. The Pearson correlation value for SRM (Supplier Relationship Management) with low cost/price is 0.819. The result shows that there is a very strong and positive relation between SRM and Low cost/price. The Pearson correlation value for ESI (Early Supplier Involvement) with low cost/price is 0.415. The result shows that there is a moderate and positive relation between ESI and Low cost/price The Pearson correlation value for CM (Contract Management) with low cost/price is 0.737.The result shows that there is a strong and positive relation between CM and Low cost/price.

4.4.2 MULTIPLE LINEAR REGRESSION ANALYSIS RESULT

4.4.2.1 MULTIPLE LINEAR REGRESSION ANALYSIS FOR STRATEGIC SOURCING PRACTICE AND DELIVERY IN TIME

Table 13: Regression model summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.915[a]	.837	.827	10.46512

a. Predictors: (Constant), CM, ESI, SD, SEP, SRM

b. b. Dependent Variable: delivery in time

Table 16 shows the results of model summary of the multiple linear regression analysis. Multiple linear regression analysis has been used to identify the effect of Ethiopian Airlines strategic sourcing practices (Strategic Elevation of Purchasing Function (SEP), Supplier Development (SD), Supplier Relationship Management (SRM), Early Supplier Involvement (ESI) and Contract Management (CM)) on Ethiopian Airlines supply chain efficiency in terms of delivery in time. As can be seen from

table 16, the value of R-square is 0.837, this indicates that the relative contribution of strategic sourcing practices dimensions in interpreting the supply chain efficiency in terms of delivery in time. In other word, about 83.7% of the variation in supply chain efficiency in terms of delivery in time can be explained by strategic sourcing practices(SEP,SD,SRM,ESI and CM).

Table 14: ANOVA TABLE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45071.851	5	9014.370	82.309	.000[b]
	Residual	8761.500	80	109.519		
	Total	53833.351	85			

a. Delivery in time.

b. Predictors: (Constant), CM, ESI, SD, SEP, SRM

Table 17 shows the **ANOVA** results of the multiple regression analysis. The p value denoted as "Sig." in the **ANOVA** table tests whether the independent variables are statistically significant to predict the dependent variable. If p value is > 0.05 the model is statistically insignificant, but if p value is < 0.05 the model is statistically significant.

Hence the above **ANOVA** table shows the regression model is a good fit of the data. (p=0.00, which is < 0.05).

Table 15: Coefficients

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-13.856	4.701		-2.947	.004	-23.212	-4.501
	SEP	7.764	1.328	.354	5.845	.000	5.120	10.407
	SD	-.683	1.756	-.021	-.389	.698	-4.179	2.812
	SRM	10.223	1.354	.469	7.552	.000	7.529	12.917
	ESI	2.481	.942	.127	2.634	.010	.606	4.356
	CM	4.379	1.340	.200	3.267	.002	1.712	7.047

a. Dependent Variable: Delivery in time.

Table 18 shows the results of coefficients of multiple linear regression analysis for the effect of strategic sourcing practices (Strategic Elevation of Purchasing Function (SEP), Supplier Development (SD), Supplier Relationship Management (SRM), Early Supplier Involvement (ESI) and Contract Management (CM)) on the supply chain efficiency in terms of delivery in time.

Out of the five variables of strategic sourcing practice, the effect of Supplier Development (SD) on the supply chain efficiency in terms of delivery in time found to be statistically insignificant because the p value with is denoted as “Sig.” is above the statistics limit which is 0.05. This shows that because Ethiopian Airlines Supplier Development practice is very low, its impact on supply chain efficiency cannot be statistically explained.

The p value for the remaining variables (SEP, SRM, ESI and CM) are below 0.05. This shows that each variables of strategic sourcing practice will have an impact on Ethiopian Airlines supply chain efficiency in terms of Delivery in time by their respective B value.

Hence by taking the formula:

$$\mathbf{Y_1 = B \pm C_1 X_1 + C_3 X_3 + C_4 X_4 + C_5 X_5 + e}$$

Delivery in time as $\mathbf{Y_1}$ = **SEP** as $\mathbf{X_1}$, **SRM** as $\mathbf{X_3}$, **ESI**as $\mathbf{X_4}$and **CM** as $\mathbf{X_5}$

$$\mathbf{Y_1 = 7.764X_1 + 10.223 X_3 + 2.48X_4 + 4.379 X_5 + e}$$

According to the above result, a one unite increase or improvement on **X_1(SEP)** will result a**7.764%**increase on Ethiopian Airlines supply chain efficiency in terms of Delivery in Time; a one unite increase or improvement on **X_3(SRM)** will result a**10.223%**increase on Ethiopian Airlines supply chain efficiency in terms of Delivery in Time; a one unite increase on **X_4(ESI)** will result a**2.48%**increase on Ethiopian Airlines supply chain efficiency in terms of Delivery in Time; finally a one unite increaseor improvement on **X_5(CM)** will result a**4.379%**increase on Ethiopian Airlines supply chain efficiency in terms of Delivery in Time

4.4.2.2. MULTIPLE LINEAR REGRESSION ANALYSIS FOR STRATEGIC SOURCING PRACTICE AND SHORT LEAD TIME

Table 16: Regression model summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.919[a]	.844	.834	10.11321

a. Predictors: (Constant), CM, ESI, SD, SEP, SRM

b. Dependent Variable: short lead-time.

Table 19 shows the results of model summary of the multiple linear regression analysis. Multiple linear regression analysis has been used to identify the effect of Ethiopian Airlines strategic sourcing practices (Strategic Elevation of Purchasing Function (SEP), Supplier Development (SD), Supplier Relationship Management (SRM), Early Supplier Involvement (ESI) and Contract Management (CM)) on Ethiopian Airlines supply chain efficiency in terms of short lead time. As can be seen from table 19, the value of R-square is 0.844, this indicates that the relative contribution of strategic sourcing practices dimensions in interpreting the supply chain efficiency in terms of short lead time. In other word, about 84.4% of the variation in supply chain efficiency in terms of short lead time can be explained by strategic sourcing practices(SEP,SD,SRM,ESI and CM).

Table 17: ANOVA TABLE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44304.550	5	8860.910	86.636	.000[b]
	Residual	8182.156	80	102.277		
	Total	52486.706	85			

a. Dependent Variable: On Average % of our customers' orders are delivered with the possible short lead-time.

b. Predictors: (Constant), CM, ESI, SD, SEP, SRM

Table 20 shows the **ANOVA** results of the multiple regression analysis. The p value denoted as "Sig." in the **ANOVA** table tests whether the independent variables are statistically significant to predict the dependent variable. If p value is > 0.05 the model is statistically insignificant, but if p value is < 0.05 the model is statistically significant.

Hence the above **ANOVA** table shows the regression model is a good fit of the data. (p=0.00, which is < 0.05).

Table 18: Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-11.446	4.543		-2.519	.014	-20.487	-2.405
	SEP	7.224	1.284	.333	5.628	.000	4.669	9.778
	SD	-1.022	1.697	-.032	-.602	.549	-4.400	2.356
	SRM	10.360	1.308	.481	7.920	.000	7.756	12.963
	ESI	2.318	.910	.120	2.546	.013	.506	4.130
	CM	4.828	1.295	.223	3.727	.000	2.250	7.405

a. Dependent Variable: short lead-time.

Table 21 shows the results of coefficients of multiple linear regression analysis for the effect of strategic sourcing practices (Strategic Elevation of Purchasing Function (SEP), Supplier Development (SD), Supplier Relationship Management (SRM), Early Supplier Involvement (ESI) and Contract Management (CM)) on the supply chain efficiency in terms of short lead time.

Out of the five variables of strategic sourcing practice, the effect of Supplier Development (SD) on the supply chain efficiency in terms of short lead found to be statistically insignificant because the p

value with is denoted as "Sig." is above the statistics limit which is 0.05. This shows that because Ethiopian Airlines Supplier Development practice is very low, its impact on supply chain efficiency cannot be statistically explained.

The p value for the remaining variables (SEP, SRM, ESI and CM) are below 0.05. This shows that each variables of strategic sourcing practice will have an impact on Ethiopian Airlines supply chain efficiency in terms short lead time by their respective B value.

Hence by taking the formula:

$$\mathbf{Y_2 = B \pm C_1 X_1 + C_2 X_2 + C_3 X_3 + C_4 X_4 + C_5 X_5 + e}$$

Short lead-time as $\mathbf{Y_2}$ and **SEP** as $\mathbf{X_1}$, **SD** as $\mathbf{X_2}$, **SRM** as $\mathbf{X_3}$, **ESI**as $\mathbf{X_4}$and **CM** as $\mathbf{X_5}$

$$\mathbf{Y_2 = 7.224X_1 + 10.36\ X_3 + 2.318X_4 + 4.828\ X_5 + e}$$

According to the above result, a one unite increase or improvement on **X_1(SEP)** will result a**7.224%**increase on Ethiopian Airlines supply chain efficiency in terms of short lead time; a one unite increase or improvement on **X_3(SRM)** will result a**10.36%**increase on Ethiopian Airlines supply chain efficiency in terms of short lead time; a one unite increase on **X_4(ESI)** will result a**2.31%**increase on Ethiopian Airlines supply chain efficiency in terms of short lead time; finally a one unite increase or improvement on **X_5(CM)** will result a**4.828%**increase on Ethiopian Airlines supply chain efficiency in terms of short lead time.

4.4.2.3. MULTIPLE LINEAR REGRESSION ANALYSIS FOR STRATEGIC SOURCING PRACTICE AND RIGHT QUALITY

Table 19: Regression model summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.913[a]	.833	.823	10.52856

a. Predictors: (Constant), CM, ESI, SD, SEP, SRM

b. Dependent Variable: right quality.

Table 22 shows the results of model summary of the multiple linear regression analysis. Multiple linear regression analysis has been used to identify the effect of Ethiopian Airlines strategic sourcing practices (Strategic Elevation of Purchasing Function (SEP), Supplier Development (SD), Supplier Relationship Management (SRM), Early Supplier Involvement (ESI) and Contract Management (CM)) on Ethiopian Airlines supply chain efficiency in terms of Right Quality. As can be seen from table 22, the value of R-square is 0.833, this indicates that the relative contribution of strategic sourcing practices dimensions in interpreting the supply chain efficiency in terms of Right Quality. In other word, about 83.3% of the variation in supply chain efficiency in terms of Right Quality can be explained by strategic sourcing practices(SEP,SD,SRM,ESI and CM).

Table 20: ANOVA TABLE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44259.726	5	8851.945	79.855	.000[b]
	Residual	8868.046	80	110.851		
	Total	53127.773	85			

a. Dependent Variable: right quality.

b. Predictors: (Constant CM, ESI, SD, SEP, SRM

Table 23 shows the **ANOVA** results of the multiple regression analysis. The p value denoted as "Sig." in the **ANOVA** table tests whether the independent variables are statistically significant to predict the dependent variable. If p value is > 0.05 the model is statistically insignificant, but if p value is < 0.05 the model is statistically significant.

Hence the above **ANOVA** table shows the regression model is a good fit of the data. (p=0.00, which is < 0.05).

Table 21: Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-16.138	4.730		-3.412	.001	-25.550	-6.726
	SEP	6.609	1.336	.303	4.946	.000	3.950	9.268
	SD	-.354	1.767	-.011	-.200	.842	-3.870	3.163
	SRM	10.466	1.362	.483	7.685	.000	7.756	13.176
	ESI	2.858	.948	.148	3.016	.003	.972	4.744
	CM	4.663	1.349	.214	3.458	.001	1.980	7.347

a. Dependent Variable: right quality.

Table 24 shows the results of coefficients of multiple linear regression analysis for the effect of strategic sourcing practices (Strategic Elevation of Purchasing Function (SEP), Supplier Development (SD), Supplier Relationship Management (SRM), Early Supplier Involvement (ESI) and Contract Management (CM)) on the supply chain efficiency in terms of Right Quality.

Out of the five variables of strategic sourcing practice, the effect of Supplier Development (SD) on the supply chain efficiency in terms of Right Quality found to be statistically insignificant because the p value with is denoted as “Sig.” is above the statistics limit which is 0.05. This shows that because

Ethiopian Airlines Supplier Development practice is very low, its impact on supply chain efficiency cannot be statistically explained.

The p value for the remaining variables (SEP, SRM, ESI and CM) are below 0.05. This shows that each variables of strategic sourcing practice will have an impact on Ethiopian Airlines supply chain efficiency in terms Right Quality by their respective B value.

Hence by taking the formula:

$$\mathbf{Y_3 = B \pm C_1 X_1 + C_2 X_2 + C_3 X_3 + C_4 X_4 + C_5 X_5 + e}$$

Right Quality as $\mathbf{Y_3}$and **SEP** as $\mathbf{X_1}$, **SD** as $\mathbf{X_2}$, **SRM** as $\mathbf{X_3}$, **ESI**as $\mathbf{X_4}$and **CM** as $\mathbf{X_5}$

$$\mathbf{Y_3 = 6.609X_1 + 10.446\ X_3 + 2.858X_4 + 4.663\ X_5 + e}$$

According to the above result, a one unite increase or improvement on **X_1(SEP)** will result a**6.609%**increase on Ethiopian Airlines supply chain efficiency in terms of Right Quality; a one unite increase or improvement on **X_3(SRM)** will result a**10.446%**increase on Ethiopian Airlines supply chain efficiency in terms of Right Quality; a one unite increase on **X_4(ESI)** will result a**2.858%**increase on Ethiopian Airlines supply chain efficiency in terms of Right Quality; finally a one unite increaseor improvement on **X_5(CM)** will result a**4.663%**increase on Ethiopian Airlines supply chain efficiency in terms of Right Quality.

4.4.2.4. MULTIPLE LINEAR REGRESSION ANALYSIS FOR STRATEGIC SOURCING PRACTICE AND LOW COST / PRICE

Table 22: Regression model summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.913[a]	.834	.824	10.14364

a. Predictors: (Constant), CM, ESI, SD, SEP, SRM

b. Dependent Variable: low cost/price.

Table 25 shows the results of model summary of the multiple linear regression analysis. Multiple linear regression analysis has been used to identify the effect of Ethiopian Airlines strategic sourcing practices (Strategic Elevation of Purchasing Function (SEP), Supplier Development (SD), Supplier Relationship Management (SRM), Early Supplier Involvement (ESI) and Contract Management (CM)) on Ethiopian Airlines supply chain efficiency in terms of Low cost/price. As can be seen from table 25, the value of R-square is 0.834, this indicates that the relative contribution of strategic sourcing practices dimensions in interpreting the supply chain efficiency in terms of Low cost/price. In other word, about 83.4% of the variation in supply chain efficiency in terms of Low cost/price can be explained by strategic sourcing practices(SEP,SD,SRM,ESI and CM).

Table 23: ANOVA TABLE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41458.641	5	8291.728	80.586	.000[b]
	Residual	8231.467	80	102.893		
	Total	49690.108	85			

a. Dependent Variable: low cost/price.

b. Predictors: (Constant), CM, ESI, SD, SEP, SRM

Table 26 shows the **ANOVA** results of the multiple regression analysis. The p value denoted as "Sig." in the **ANOVA** table tests whether the independent variables are statistically significant to predict the dependent variable. If p value is > 0.05 the model is statistically insignificant, but if p value is < 0.05 the model is statistically significant.

Hence the above **ANOVA** table shows the regression model is a good fit of the data. (p=0.00, which is < 0.05).

Table 24: Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-7.753	4.557		-1.701	.093	-16.821	1.315
	SEP	6.367	1.287	.302	4.945	.000	3.805	8.929
	SD	-.316	1.702	-.010	-.186	.853	-3.704	3.072
	SRM	9.818	1.312	.469	7.483	.000	7.207	12.429
	ESI	2.192	.913	.117	2.401	.019	.375	4.009
	CM	5.262	1.299	.250	4.050	.000	2.676	7.847

a. Dependent Variable: low cost/price.

Table 27 shows the results of coefficients of multiple linear regression analysis for the effect of strategic sourcing practices (Strategic Elevation of Purchasing Function (SEP), Supplier Development (SD), Supplier Relationship Management (SRM), Early Supplier Involvement (ESI) and Contract Management (CM)) on the supply chain efficiency in terms of Low cost/price.

Out of the five variables of strategic sourcing practice, the effect of Supplier Development (SD) on the supply chain efficiency in terms of Right Quality found to be statistically insignificant because the p value with is denoted as “Sig.” is above the statistics limit which is 0.05. This shows that because Ethiopian Airlines Supplier Development practice is very low, its impact on supply chain efficiency cannot be statistically explained.

The p value for the remaining variables (SEP, SRM, ESI and CM) are below 0.05. This shows that each variables of strategic sourcing practice will have an impact on Ethiopian Airlines supply chain efficiency in terms Low cost/price by their respective B value.

Hence by taking the formula:

$$\mathbf{Y_4 = B \pm C_1 X_1 + C_2 X_2 + C_3 X_3 + C_4 X_4 + C_5 X_5 + e}$$

Low cost/price as $\mathbf{Y_4}$and **SEP** as $\mathbf{X_1}$, **SD** as $\mathbf{X_2}$, **SRM** as $\mathbf{X_3}$, **ESI**as $\mathbf{X_4}$and **CM** as $\mathbf{X_5}$

$$\mathbf{Y_4 = 6.367X_1 + 9.818 X_3 + 2.192X_4 + 5.262 X_5 + e}$$

According to the above result, a one unite increase or improvement on $\mathbf{X_1}$**(SEP)** will result a**6.367%**increase on Ethiopian Airlines supply chain efficiency in terms of Low cost/price; a one unite increase or improvement on $\mathbf{X_3}$**(SRM)** will result a**9.818%**increase on Ethiopian Airlines supply chain efficiency in terms of Low cost/price; a one unite increase on $\mathbf{X_4}$**(ESI)** will result a**2.192%**increase on Ethiopian Airlines supply chain efficiency in terms of Low cost/price; finally a one unite increase or improvement on $\mathbf{X_5}$**(CM)** will result a**5.262%**increase on Ethiopian Airlines supply chain efficiency in terms of Low cost/price.

4.5.SUMMARY OF FINDINGS

4.5.1. ETHIOPIAN AIRLINES IMPLEMENTATION LEVEL OF STRATEGIC SOURCING PRACTICE

As it is discussed on the pervious chapter in order to determine the extent of Ethiopian Airlines strategic sourcing practice, the researcher analyzed the implementation level of Ethiopian Airlines; Strategic Elevation of Purchasing Function practice, Supplier Development practice, Supplier Relationship Management practice, Early Supplier Involvement practice and Contract Management practice.

4.5.1.1. ETHIOPIAN AIRLINES STRATEGIC ELEVATION OF PURCHASING FUNCTION PRACTICE

Considering the need for strategic elevation of purchasing function, the research findings are showing that Ethiopian Airlines top management very often; gives emphasis for the strategic role of the purchasing function, acknowledges the importance of purchasing function relative to other function

in the firm and involve procurement professionals in corporate-level strategic planning. Also the result shows that very often the role of purchasing function is visible within the firm.

4.5.1.2.ETHIOPIAN AIRLINES SUPPLIER DEVELOPMENT PRACTICE

As per the research finding in Ethiopian Airlines the practice of providing regular technical or financial assistance for the firm's suppliers to enable them improve their product quality, lead-time, product cost/ pricing and delivery reliability is rare. Also good performing suppliers are rarely rewarded by promising and considering them in future businesses

4.5.1.3. ETHIOPIAN AIRLINES SUPPLIER RELATIONSHIP MANAGEMENT PRACTICE

Considering the characteristics of world class supplier relationship management, the research findings are showing that in Ethiopian Airlines; developing long term relation with suppliers, exchanging real time information with suppliers and measuring supplier's performance practice is very often. Also Ethiopian Airlines procurement and supply chain professionals very often took different trainings to develop adequate knowledge and/ or skill on different functional competencies, like: negotiation skill, market analysis.

4.5.1.4.ETHIOPIAN AIRLINES EARLY SUPPLIER INVOLVEMENT PRACTICE

When looking in to the research finding, Ethiopian Airlines procurement and supply chain professionals sometimes involve suppliers; to provide information on new product specification development and early before contract award.

4.5.1.5.ETHIOPIAN AIRLINES CONTRACT MANAGEMENT PRACTICE

As per the research finding in Ethiopian Airlines the practice of; developing contractual agreement with most suppliers, evaluating supplier performance after signing contract agreement and incorporating the management of disputes with suppliers on the contract document is very often.

4.5.2. ETHIOPIAN AIRLINES INTERNAL SUPPLY CHAIN EFFICIENCY LEVEL

In accordance to the research finding, Ethiopian Airlines supply chain delivers ; 72.98% of its internal customers' orders in time, 74.25% with short lead time, 70.17% with right quality and 75.64% with low cost/price.

4.5.3. RELATIONSHIP BETWEEN ETHIOPIAN AIRLINES STRATEGIC SOURCING PRACTICE AND DELIVERY IN TIME

As per Pearson Correlation result;

- There is a strong and positive relation between SEP and Supply Chain Efficiency variables, Delivery in time.
- There is moderate and positive relation between SD and Delivery in time.
- There is a very strong and positive relation between SRM and Delivery in time
- There is a moderate and positive relation between ESI and Delivery in time
- There is a strong and positive relation between CM and Delivery in time.

Also as per the multiple linear Regression Model result:

- About 83.7% of the variation in supply chain efficiency in terms of delivery in time can be explained by strategic sourcing practices (SEP, SD, SRM, ESI and CM).

A one unite increase or improvement on **X1 (SEP)** will result a **7.764%** increase on Ethiopian Airlines supply chain efficiency in terms of Delivery in Time; a one unite increase or improvement on **X3 (SRM)** will result a **10.223%** increase on Ethiopian Airlines supply chain efficiency in terms of Delivery in Time; a one unite increase on **X4 (ESI)** will result a **2.48%** increase on Ethiopian Airlines supply chain efficiency in terms of Delivery in Time; finally a one unite increase or improvement on **X5 (CM)** will result a **4.379%** increase on Ethiopian Airlines supply chain efficiency in terms of Delivery in Time.

Out of the five variables of strategic sourcing practice, the effect of Supplier Development (SD) on the supply chain efficiency in terms of delivery in time found to be statistically insignificant

4.5.4. RELATIONSHIP BETWEEN ETHIOPIAN AIRLINES STRATEGIC SOURCING PRACTICE AND SHORT LEAD TIME

As per Pearson Correlation result;

- There is a strong and positive relation between SEP and one of the Supply Chain Efficiency variables, Short Lead Time.
- There is a moderate and positive relation between SD and Short Lead Time.

- The result shows that there is a very strong and positive relation between SRM and Short Lead Time.
- That there is a moderate and positive relation between ESI and Short Lead Time
- There is a strong and positive relation between CM and Short Lead Time.

Also as per the multiple linear Regression Model result;

- About 84.4% of the variation in supply chain efficiency in terms of short lead time can be explained by strategic sourcing practices (SEP, SD, SRM, ESI and CM).

A one unite increase or improvement on **X1 (SEP)** will result a **7.224 %** increase on Ethiopian Airlines supply chain efficiency in terms of short lead time; a one unite increase or improvement on **X3 (SRM)** will result a **10.36 %** increase on Ethiopian Airlines supply chain efficiency in terms of short lead time; a one unite increase on **X4 (ESI)** will result a **2.31%** increase on Ethiopian Airlines supply chain efficiency in terms of short lead time; finally a one unite increase or improvement on **X5 (CM)** will result a **4.828 %** increase on Ethiopian Airlines supply chain efficiency in terms of short lead time.

Out of the five variables of strategic sourcing practice, the effect of Supplier Development (SD) on the supply chain efficiency in terms of short lead found to be statistically insignificant.

4.5.5. RELATIONSHIP BETWEEN ETHIOPIAN AIRLINES STRATEGIC SOURCING PRACTICE AND RIGHT QUALITY

As per Pearson Correlation result;

- There is a strong and positive relation between SEP and one of the Supply Chain Efficiency variables, Right Quality
- There is a moderate and positive relation between SD and Right Quality.
- There is a very strong and positive relation between SRM and Right Quality.
- There is a moderate and positive relation between ESI and Right Quality
- There is a strong and positive relation between CM and Right Quality.

Also as per the multiple linear Regression Model result;

- About 83.3% of the variation in supply chain efficiency in terms of Right Quality can be explained by strategic sourcing practices(SEP,SD,SRM,ESI and CM).

one unite increase or improvement on **X1 (SEP)** will result a **6.609%** increase on Ethiopian Airlines supply chain efficiency in terms of Right Quality; a one unite increase or improvement on **X3 (SRM)** will result a **10.446 %** increase on Ethiopian Airlines supply chain efficiency in terms of Right Quality; a one unite increase on **X4 (ESI)** will result a **2.858%** increase on Ethiopian Airlines supply chain efficiency in terms of Right Quality; finally a one unite increase or improvement on **X5 (CM)** will result a **4.663 %** increase on Ethiopian Airlines supply chain efficiency in terms of Right Quality.

Out of the five variables of strategic sourcing practice, the effect of Supplier Development (SD) on the supply chain efficiency in terms of Right Quality found to be statistically insignificant.

4.5.6. RELATIONSHIP BETWEEN ETHIOPIAN AIRLINES STRATEGIC SOURCING PRACTICE AND LOW COST/PRICE

As per Pearson Correlation result;

- There is a strong and positive relation between SEP and one of the Supply Chain Efficiency variables, Low cost/price.
- There is a moderate and positive relation between SD and Low cost/price.
- There is a very strong and positive relation between SRM and Low cost/price.
- There is a moderate and positive relation between ESI and Low cost/price
- There is a strong and positive relation between CM and Low cost/price.

Also as per the multiple linear Regression Model result;

- About 83.4% of the variation in supply chain efficiency in terms of Low cost/price can be explained by strategic sourcing practices (SEP, SD, SRM, ESI and CM).

A one unite increase or improvement on **X1 (SEP)** will result a **6.367%** increase on Ethiopian Airlines supply chain efficiency in terms of Low cost/price; a one unite increase or improvement on **X3 (SRM)** will result a **9.818 %** increase on Ethiopian Airlines supply chain efficiency in terms of Low cost/price; a one unite increase on **X4 (ESI)** will result a **2.192%** increase on Ethiopian Airlines supply chain efficiency in terms of Low cost/price; finally a one unite increase or improvement on **X5 (CM)** will result a **5.262 %** increase on Ethiopian Airlines supply chain efficiency in terms of Low cost/price.

Out of the five variables of strategic sourcing practice, the effect of Supplier Development (SD) on the supply chain efficiency in terms of Right Quality found to be statistically insignificant.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1. CONCLUSION

As it is discussed in the previous chapters, this study is conducted to analyze the effect of strategic sourcing practice on operational efficiency in the case of Ethiopian Airlines. Accordingly, the practice of Strategic sourcing in Ethiopian Airlines found to be good except the practice of Supplier Development and on average Ethiopian Airlines Procurement and Supply Chain Operational process is 73.3% efficient on providing support to its internal customers so that to boost the companies operational efficiency.

In Addition, the practice of Strategic sourcing in Ethiopian Airlines has around 6% effect on improving the operational efficiency of the organization. Therefore this study concluded that in order to overcome and be competent on the existing market leadership challenge that Ethiopian Airlines is facing, working on and improving the level of strategic sourcing practice will enable the Airline to improve its internal operational efficiency and can be able to achieve its 15 years strategic plan.

5.2. RECOMMENDATIONS

Based on the results of the study, the following recommendations are suggested for consideration:

- Considering the need to elevate purchasing function, Ethiopian Airlines Top management should increase the level of their practice on giving emphasis for the strategic role of the purchasing function, acknowledging the importance of purchasing function relative to other function in the firm and involving procurement professionals in corporate-level strategic planning.
- Ethiopian Airlines Procurement and Supply chain management division in line with the top most management should ensure that the company should have a supplier development program which is in line with the corporate objectives of the organization. The organization should further ensure that they develop their suppliers not only by financial support but including things such as sharing of their expertise which will result in win-win outcome with the suppliers and can play a greater role in improving operational efficiency.

- Ethiopian Airlines Procurement and Supply chain management division should ensure that they partnered with suppliers, who supply strategic items, in order to ensure that they are assured of delivery and commitment by suppliers. The study further recommends that procurement should take advantage of transactional kind of relationship especially with those suppliers who supply routine items like stationeries in order to take advantage of best available price in the market

- Ethiopian Airlines Procurement and Supply chain management division should ensure that they involve suppliers especially those who supply strategic items like electronic item, creative works which will be used for marking and other commercial activities and another recommendation is that they should emphasize the issue of supplier site visits in order to ensure that a competent supplier is selected.

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APPENDIX 1

Questionnaire

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Dear Participants:

My name is Fasil Birru conducting a thesis entitled "**The Effect of strategic sourcing practice on Operational Efficiency:** The case of Ethiopian Airlines" for partial fulfillment of my M.A. in logistics and supply chain management at AAU.

The information that you provide will be used only for the purpose of this study and will be kept strictly confidential. Thus, I kindly request you to genuinely reply for the questions. You are not expected to inform your name.

With sincerity I would like to extend my deep appreciation to youfor the willingness and cooperation in undertaking this valuable research. I request your kind cooperation in answering the questions as truthfully as possible and your response will be highly confidential.

If you would like to get a copy of the executive summary of results, please provide the information requested on the last page of the questionnaire.

Thank you for giving your valuable information

If you have any questions, please contact:Fasil Birru

MOB: - +251-911-445-602

EMAIL: - fslbrr@gmail.com

Section1. Demographic Information

Instruction: For the following questions, please check the appropriate response and select/circle only ones at a time.

1.1 Age:

A. Under 20 years
B. From 21-30 years
C. From 31 to 40 years
D. From 41- 50 years
E. Above 50 years

1.2 Your education level:

A. Below diploma
B. Diploma
C. First Degree
D. Second degree
E. PHD

1.3 How long have you been working for the company?

A. 1 to 5 years
B. 5 to 10 years
C. 10 to 15 years
D. 15 to 20 years
E. above 20 years

1.4 Your position in the company:

A. Joiner Level
B. Associate
C. Officer
D. Senior Officer
E. Supervisor
F. Manager
G. Director
H. Other, please specify _____

Section II

Unless otherwise specifically requested, please use the following scale to answer each item:

Never	Rarely	Sometimes	Very often	Always
1	2	3	4	5

1. Strategic Sourcing (SS)

Strategic Sourcing: Defined as an institutional sourcing and supplier management process that continuously improves and re-evaluates the supply chain activities of the company. It is an iterative process that cuts cost and reduces risk, while building better relationships with fewer more critical suppliers. Strategic sourcing includes an extensive range of activities such as creating an overall strategy for sourcing, Developing Suppliers, Managing Supplier relationship, Initiating Early Supplier Involvement and Managing Contracts.

Please circle the number that accurately reflects the extent of your company current level of SS practices.

A. Strategic Elevation of Purchasing Function (SEP)

Strategic Elevation of Purchasing Function: Many companies have realized the need for elevating traditional procurement function to modern strategic sourcing for value addition across the supply chain.

Variables	1	2	3	4	5
The Top Management gives emphasis for the strategic role of the purchasing function.					
The role of purchasing function is visible within the firm					
The Top Management acknowledges the Importance of purchasing function relative to other function in the firm					
The Top Management involve Procurement professionals in corporate-level strategic planning					

B. Supplier Development (SD)

Supplier development: Is where firms assist existing or new suppliers to improve their processing capabilities, quality, delivery, and cost performance by providing the needed technical and financial assistance.

Variables	1	2	3	4	5
We provide regular technical or financial assistance for our suppliers to enable them improve their product quality					
We provide regular technical or financial assistance for our suppliers to enable them improve their lead-times					
We provide regular technical or financial assistance for our suppliers to enable them improve their product cost/ pricing					
We provide regular technical or financial assistance for our suppliers to enable them improve their delivery reliability					
We reward good performing suppliers by Promising and considering in future businesses					

C. Supplier Relationship Management (SRM)

Supplier Relationship Management: is a comprehensive approach to managing an organization's interactions with the firms that supply the products and services it uses.

Variables	1	2	3	4	5
We exchange real time operational, tactical and strategic information with our suppliers					
We took different trainings to develop adequate knowledge and/ or skill on different functional competencies, like: negotiation skill, market analysis.					
We conduct supplier performance measurement system to manage our suppliers					
Our organization develops a long term partnership with suppliers who supply strategic items					

D. Early Supplier Involvement (ESI)

Early Supplier Involvement: defined as a process in which suppliers provide information and directly participate in decision-making for purchased items in the buying company's new product/process/service development

Variables	1	2	3	4	5
We involve our suppliers to provide information on new product specification development					
We involve suppliers early before contract award					

E. Contract Management (CM)

Contract Management; The process of developing contractual agreement with suppliers and, the management of existing contracts.

Variables	1	2	3	4	5
We develop contractual agreement with most of our suppliers					
After signing the contract agreement we evaluate the performance of the supplier					
Management of disputes with suppliers is incorporated on the contract document					

Section III: Operational Efficacy (OE)

Unless otherwise specifically requested, please use a percentage figure from 0% to 100% to describe your answers.

Variables	Put your reply here
On Average ____% of our customers' orders are delivered in time.	
On Average we provide ____% of our customers' orders with the possible short lead-time.	
On Average we provide ____% of our customer orders with the right quality.	
On Average we provide ____% of our customer orders with the lowest possible cost/ price.	

Comments

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……

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……

……

APPENDIX 2: RELIABILITY REST RESULT

Reliability Statistics

Cronbach's Alpha	N of Items
.994	5

Reliability Statistics

Cronbach's Alpha	N of Items
.998	4

Reliability Statistics

Cronbach's Alpha	N of Items
.998	4

Reliability Statistics

Cronbach's Alpha	N of Items
.997	4

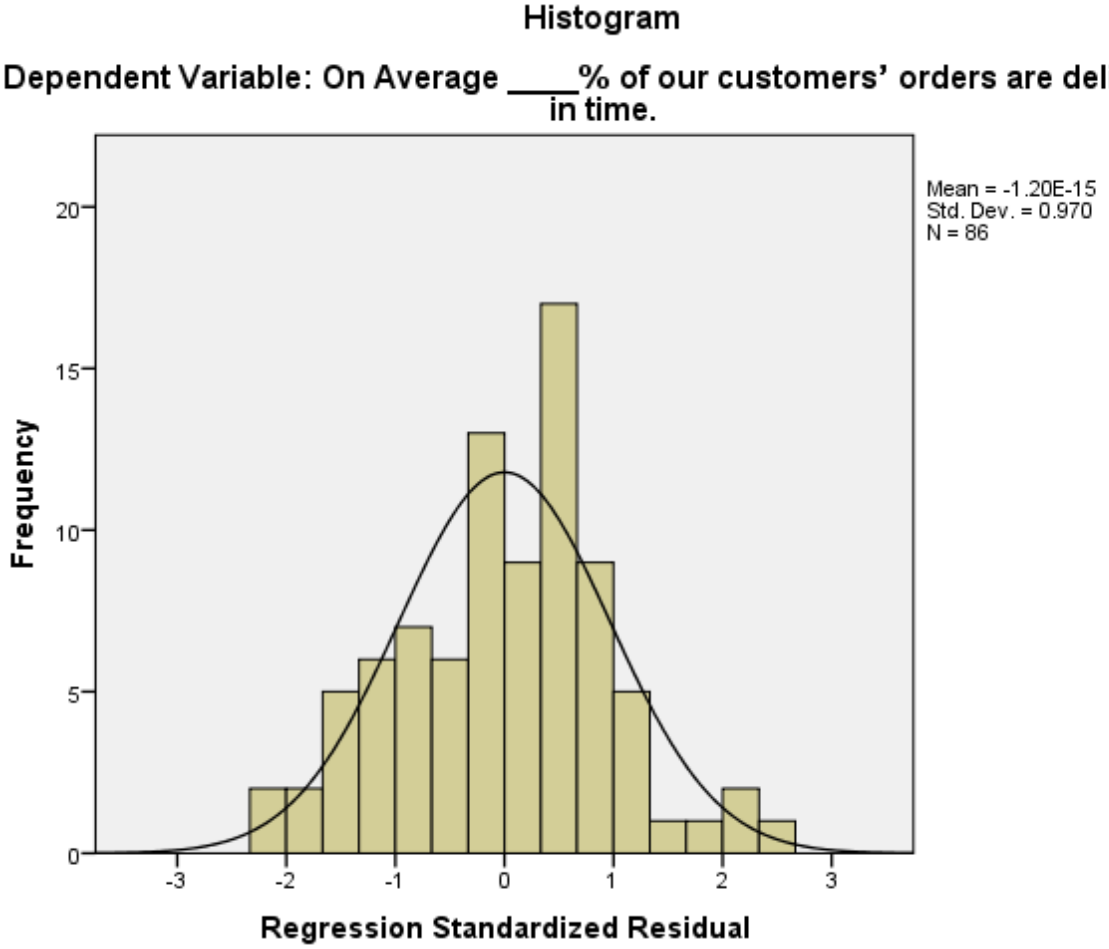
Reliability Statistics

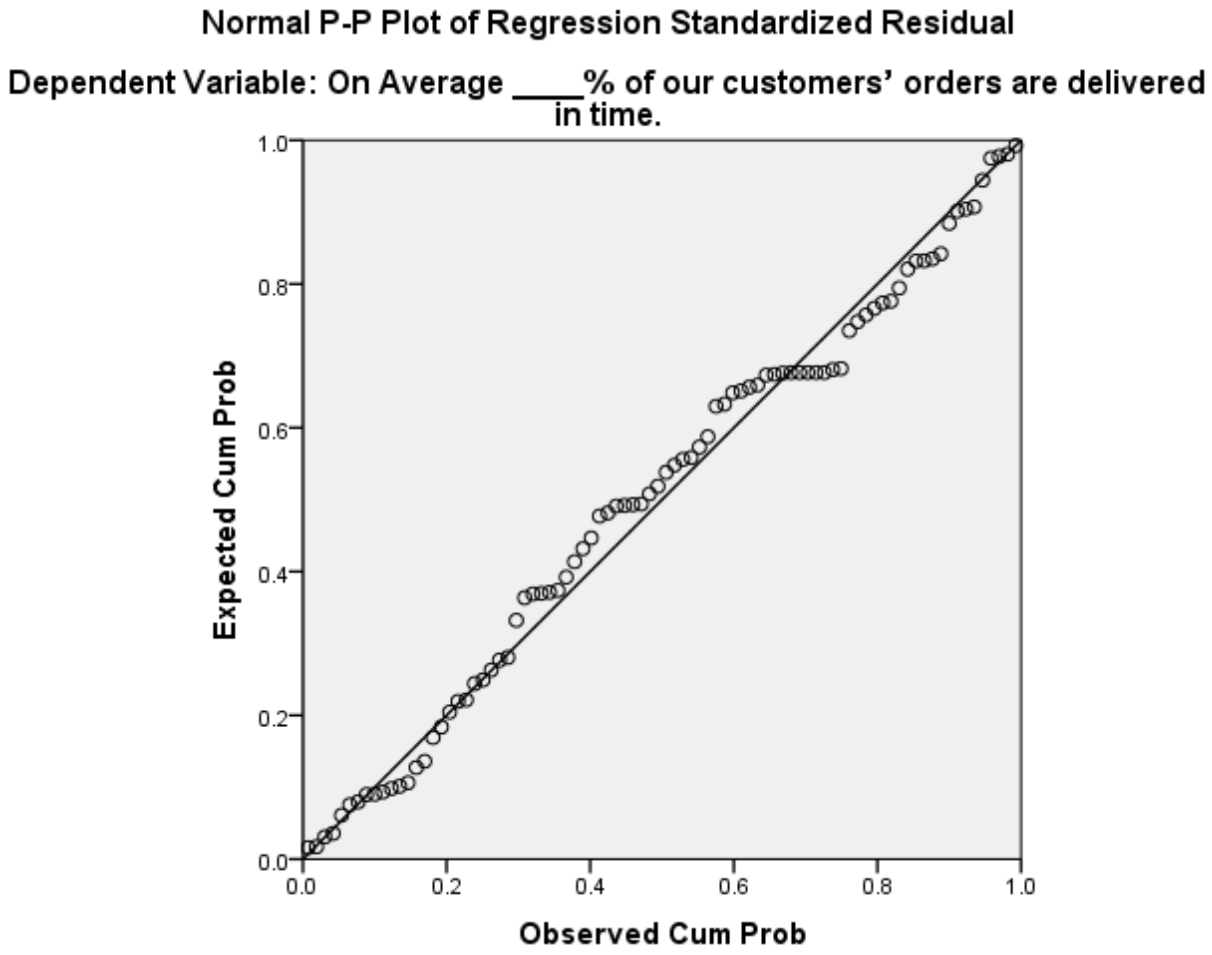
Cronbach's Alpha	N of Items
.976	2

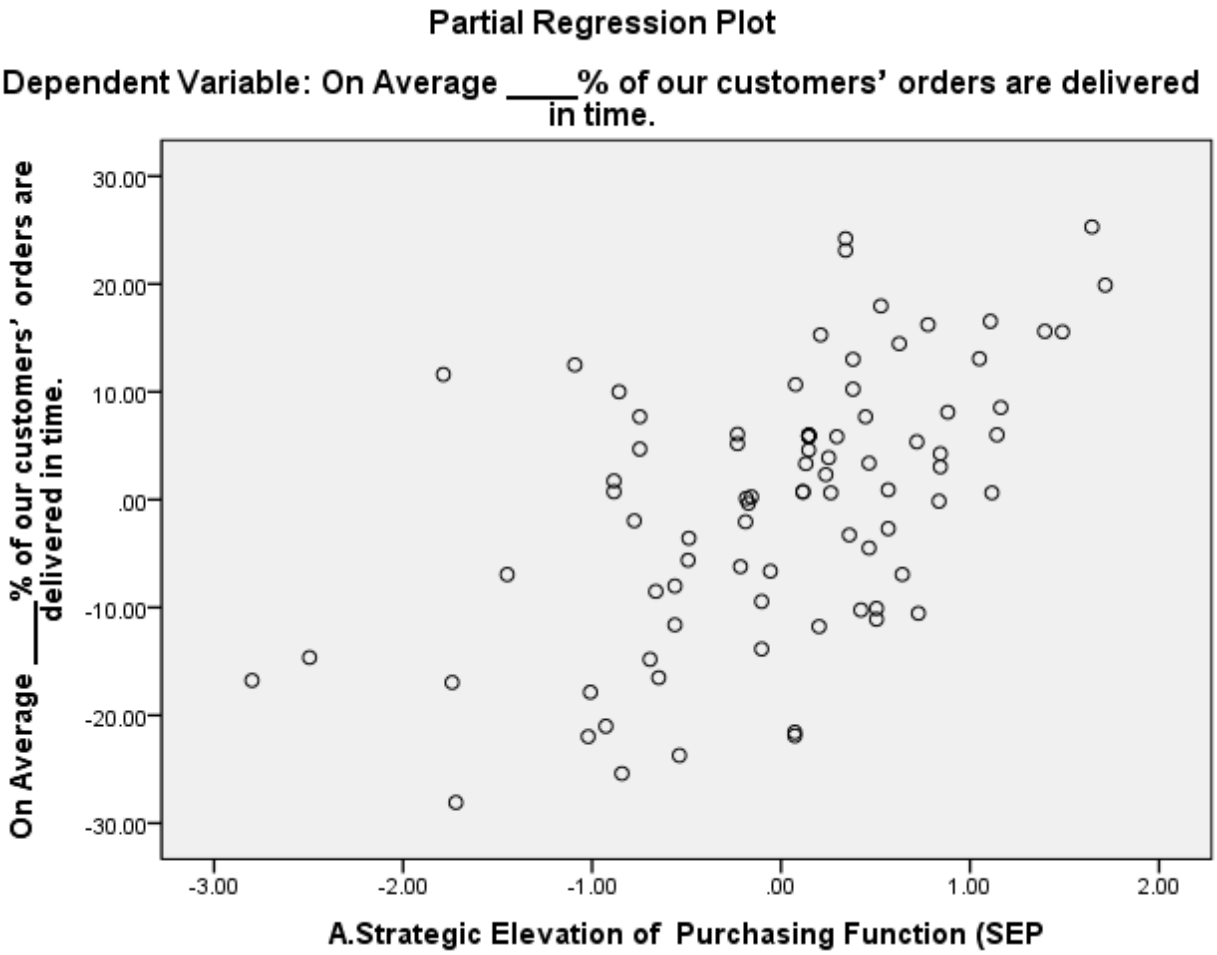
Reliability Statistics

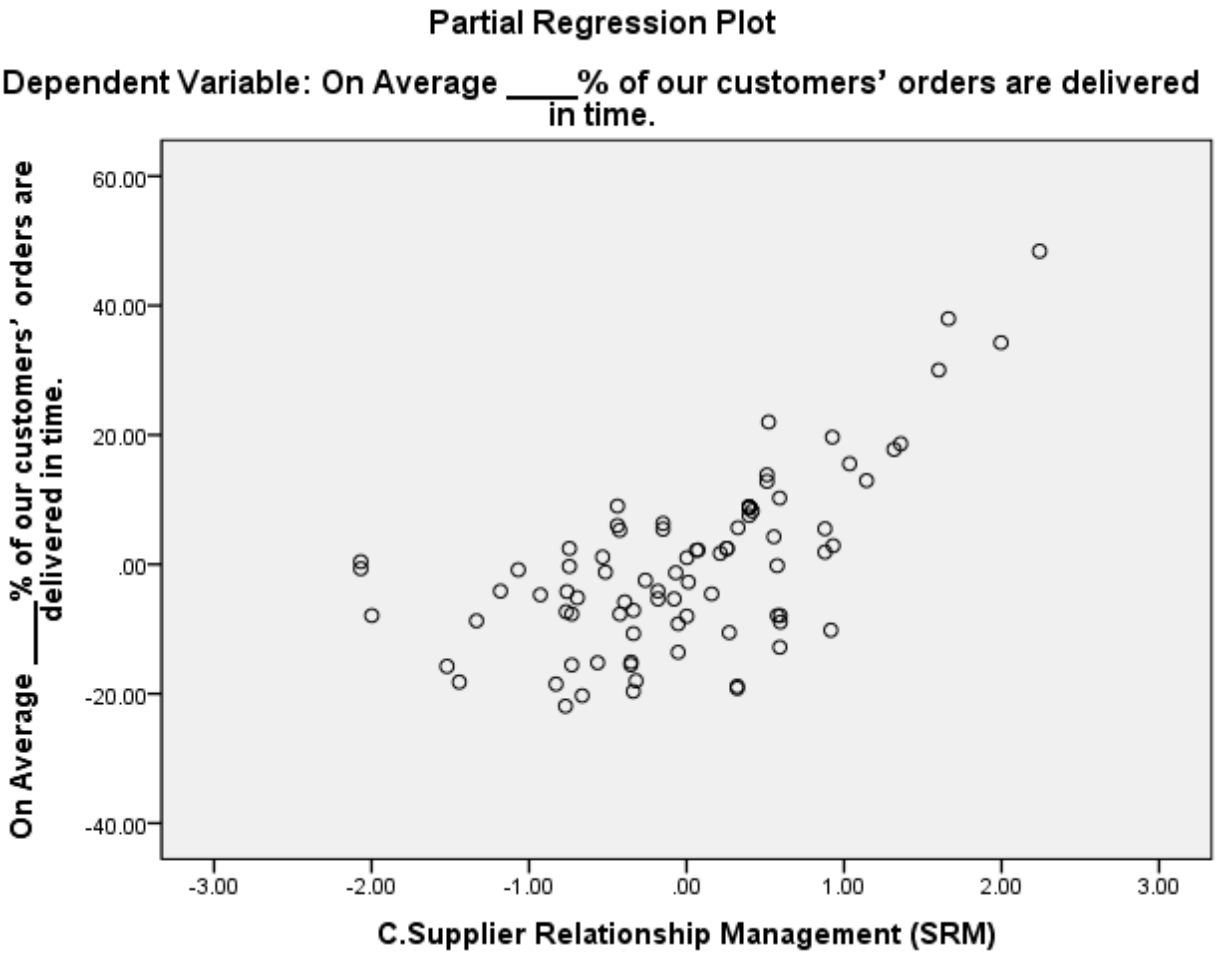
Cronbach's Alpha	N of Items
.999	3

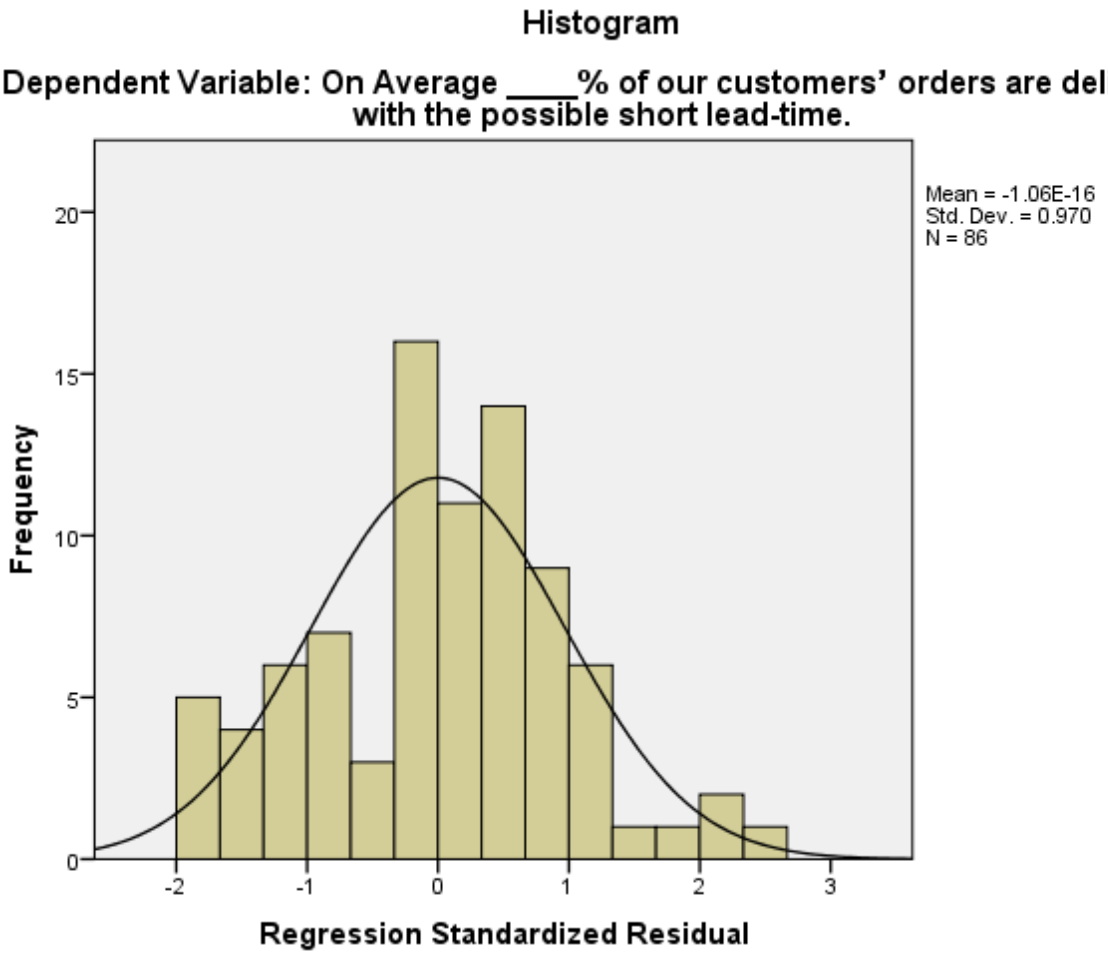
APPENDIX 3:REGRESSION MODEL TEST RESULT

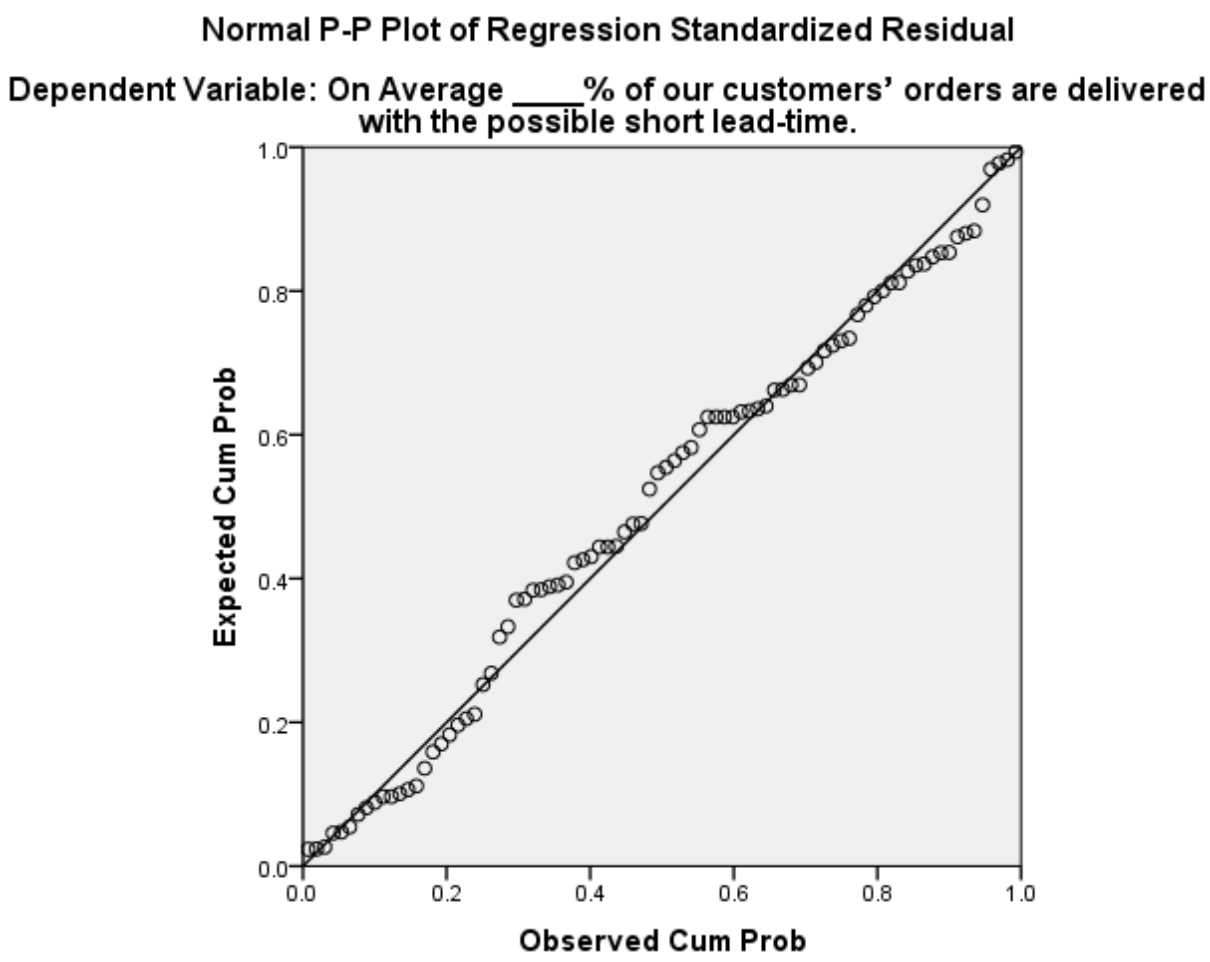


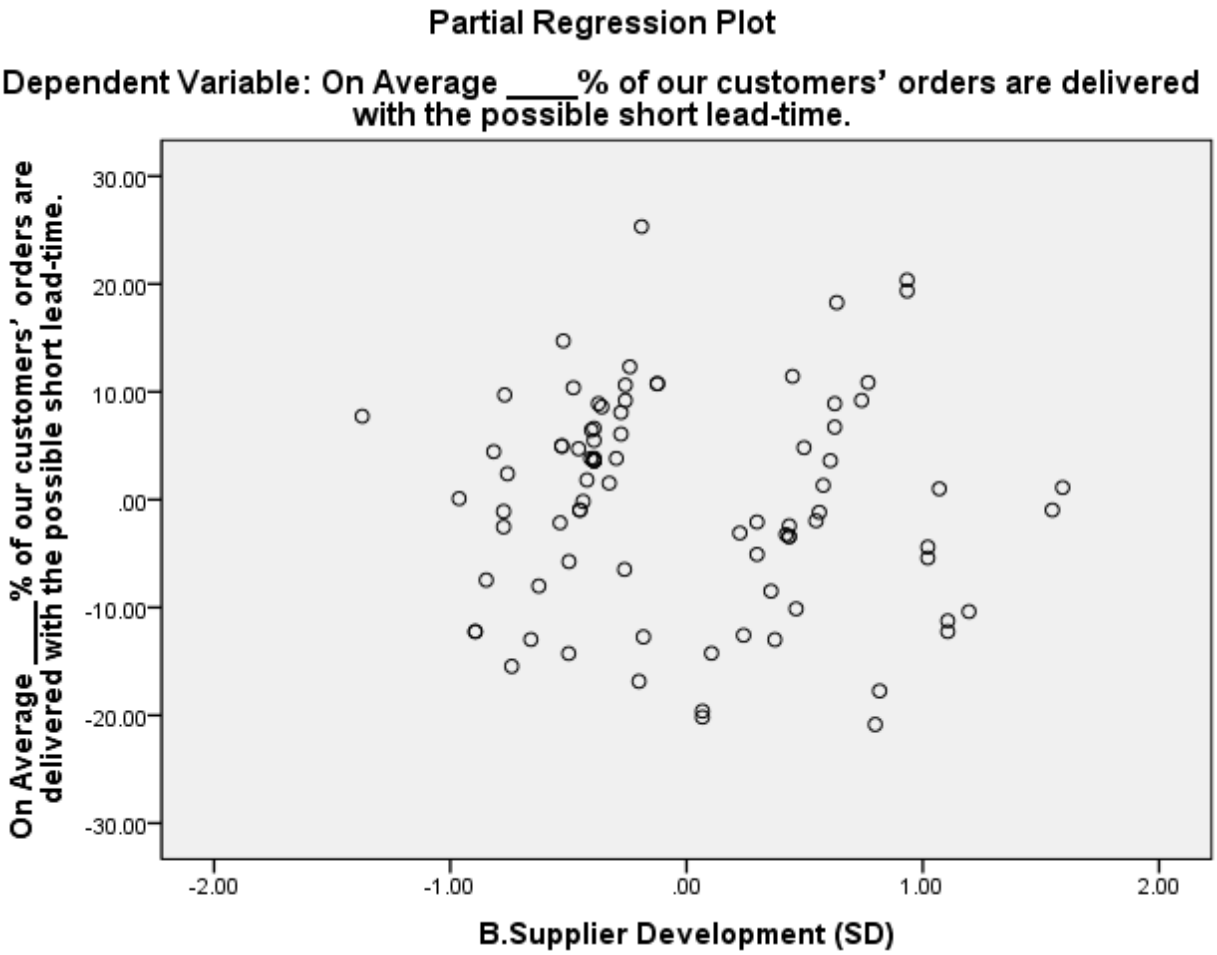

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: On Average ____% of our customers' orders are delivered in time.
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0

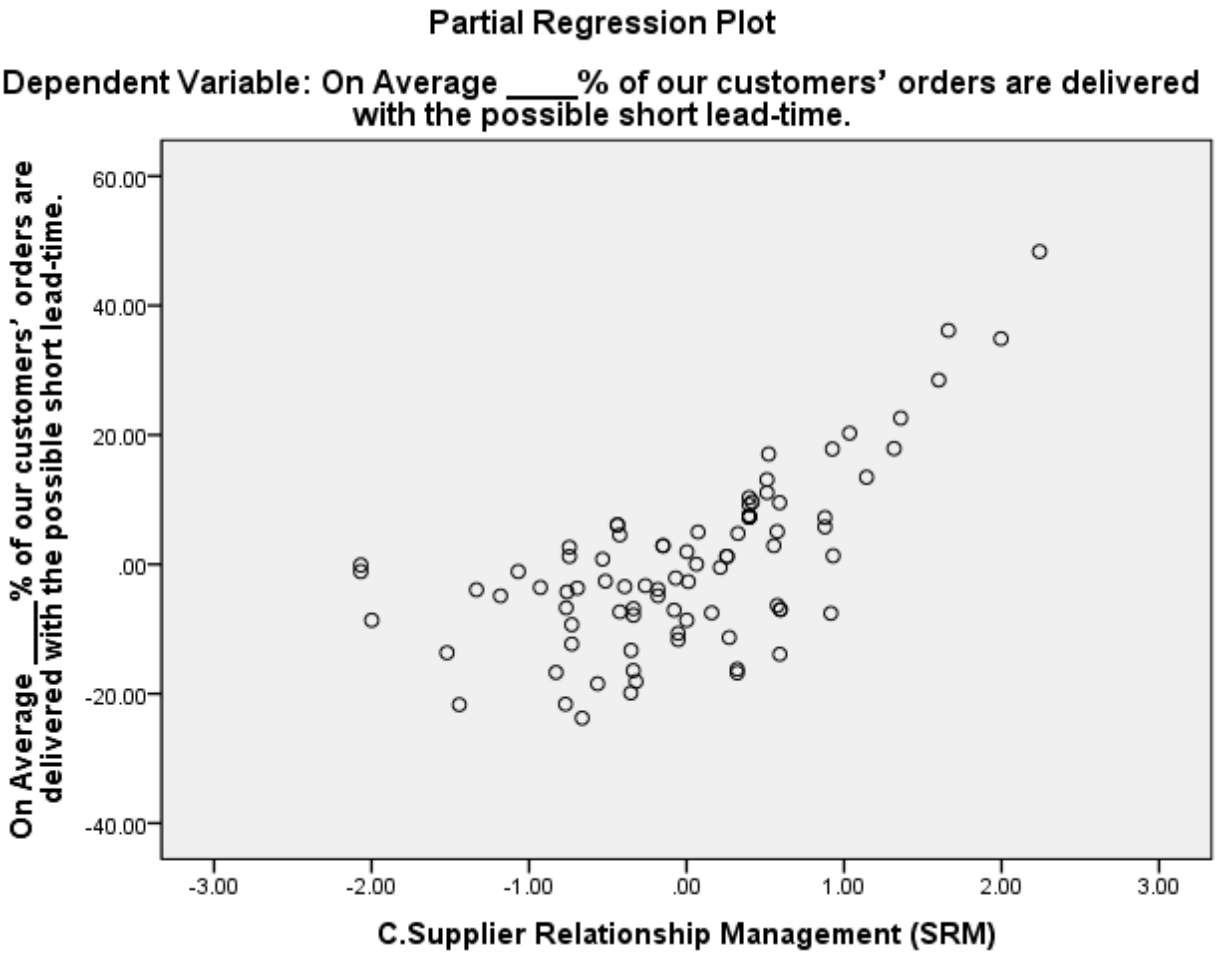

Partial Regression Plot
Dependent Variable: On Average ____% of our customers' orders are delivered in time.
On Average ____% of our customers' orders are delivered in time.
30.00
20.00
10.00
.00
-10.00
-20.00
-30.00
-3.00
-2.00
-1.00
.00
1.00
2.00
A.Strategic Elevation of Purchasing Function (SEP

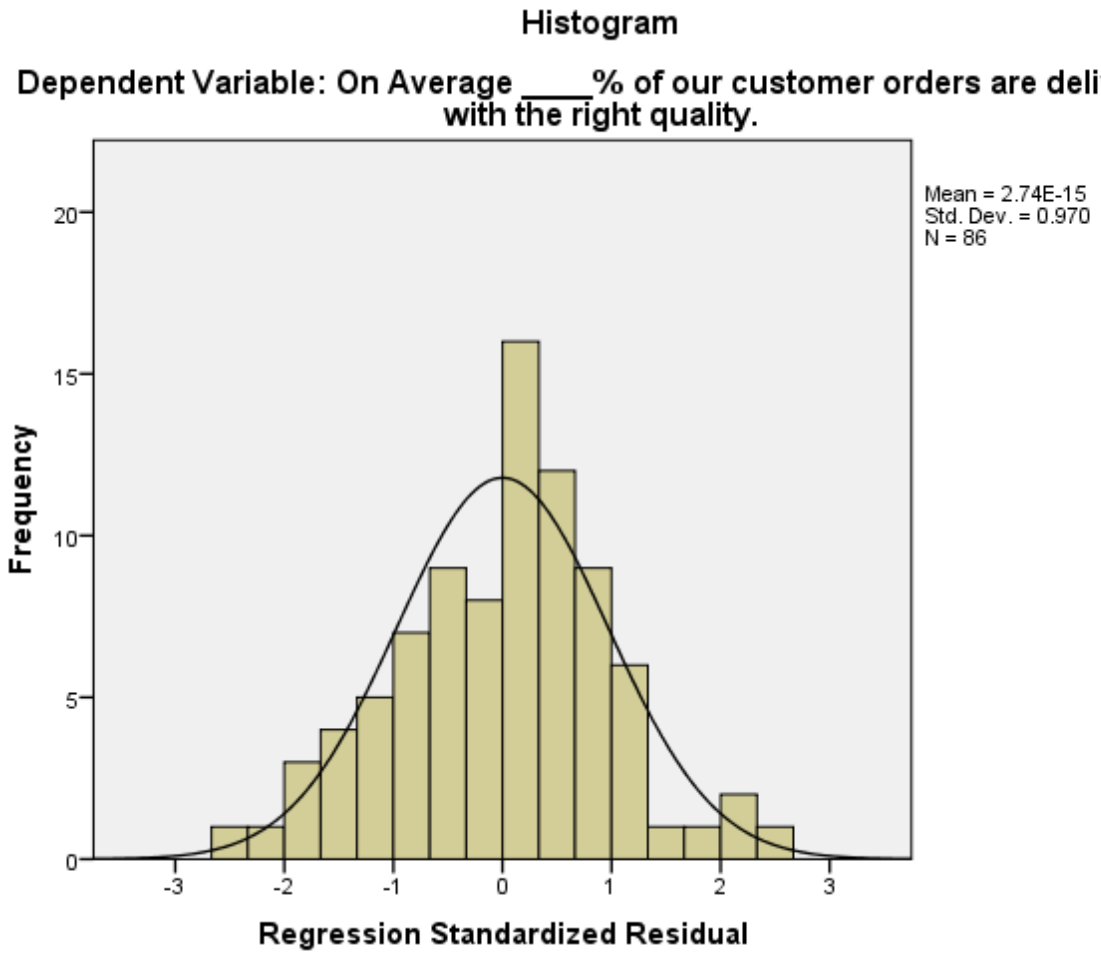

Partial Regression Plot
Dependent Variable: On Average ____% of our customers' orders are delivered in time.
On Average ____% of our customers' orders are delivered in time.
60.00
40.00
20.00
.00
-20.00
-40.00
-3.00
-2.00
-1.00
.00
1.00
2.00
3.00
C.Supplier Relationship Management (SRM)

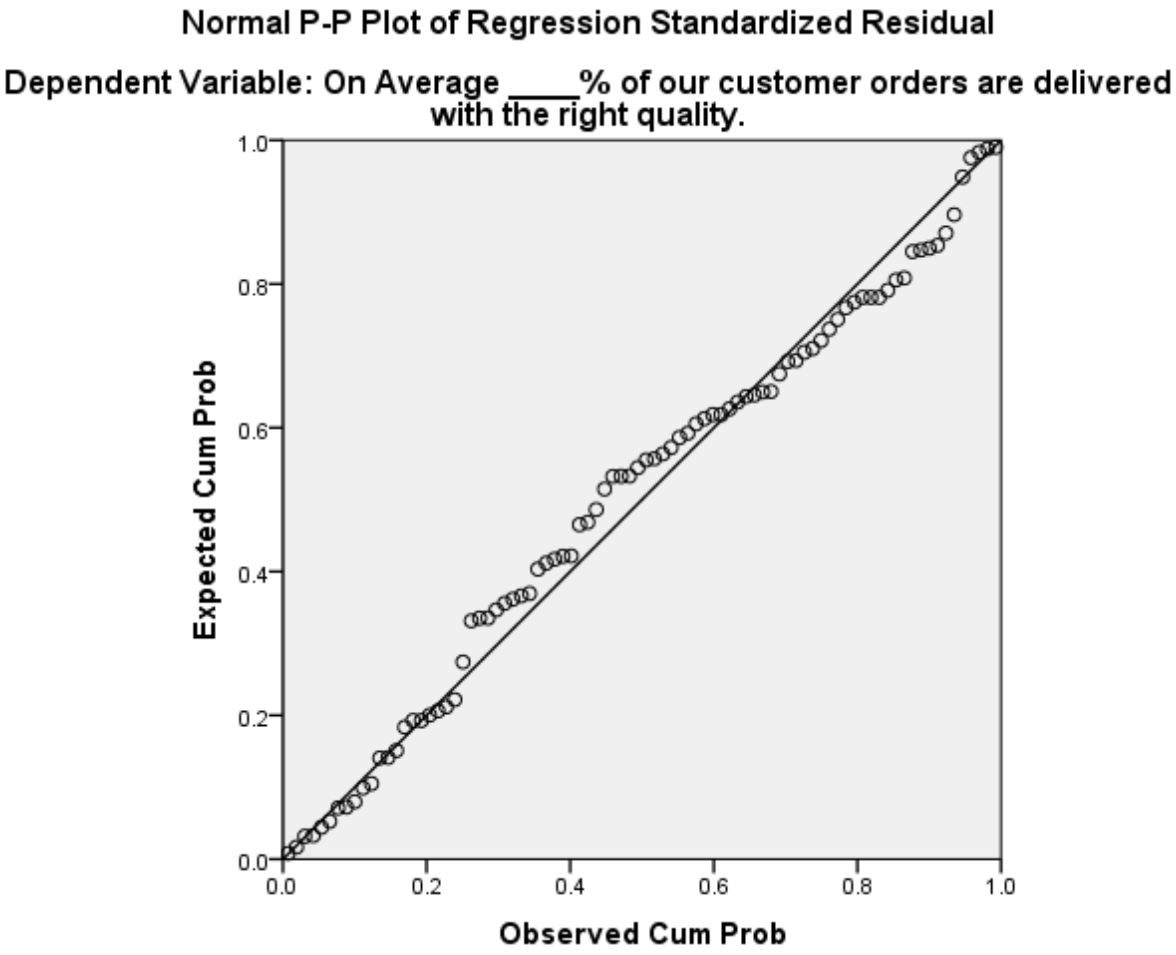

Histogram
Dependent Variable: On Average ____% of our customers' orders are delivered with the possible short lead-time.
Mean = -1.06E-16
Std. Dev. = 0.970
N = 86
Frequency
0
5
10
15
20
-2
-1
0
1
2
3
Regression Standardized Residual

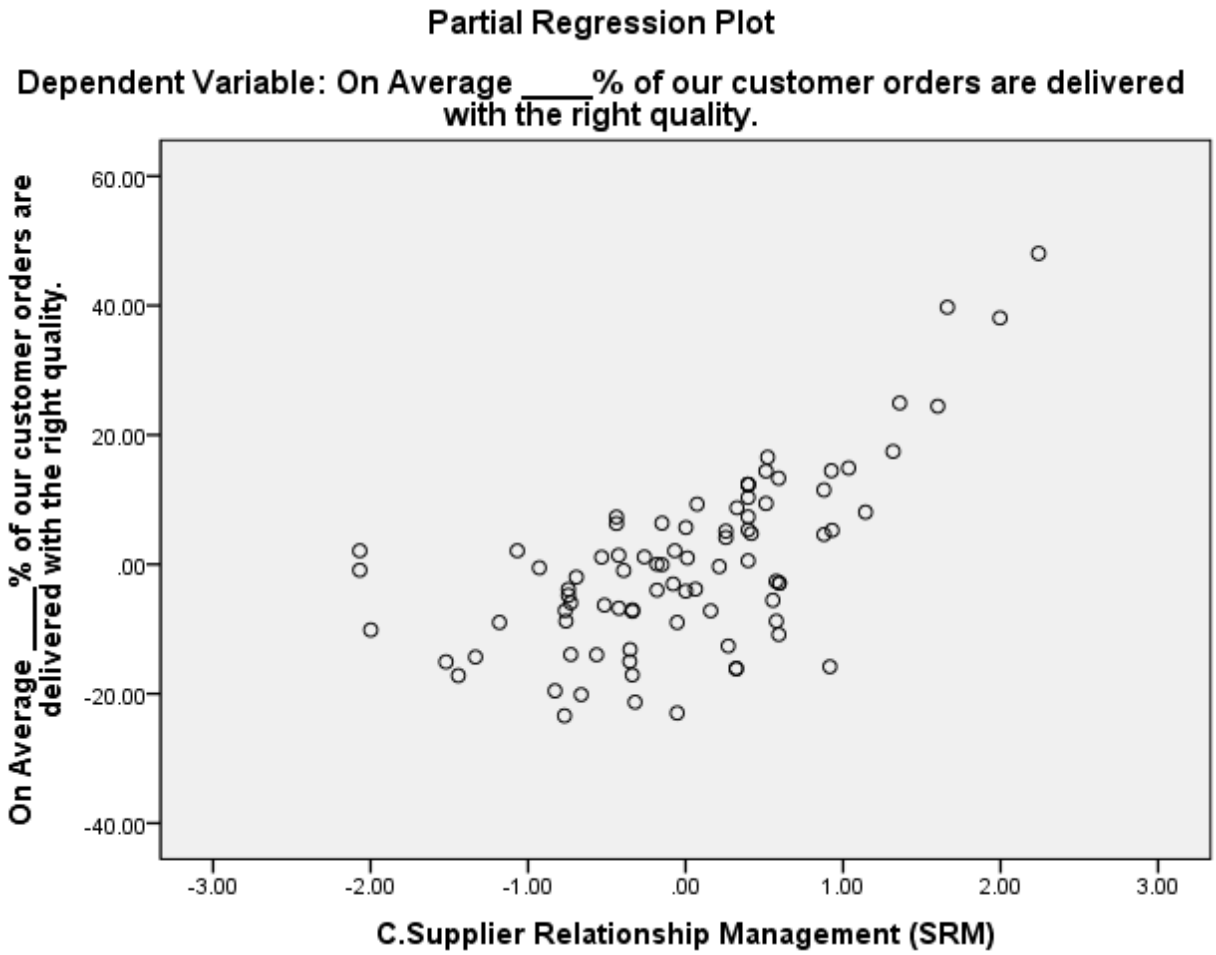

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: On Average ____% of our customers' orders are delivered with the possible short lead-time.
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0

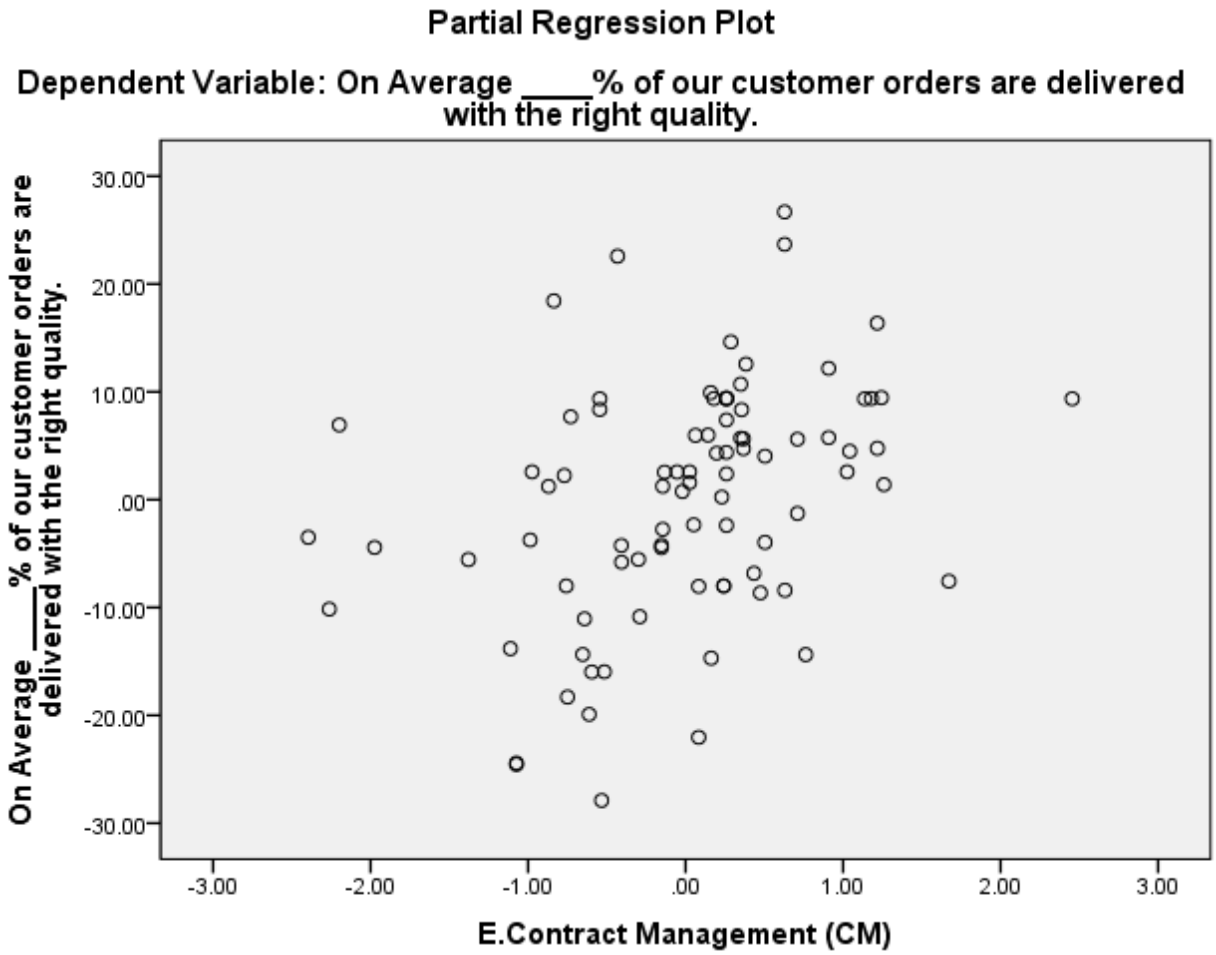

Partial Regression Plot
Dependent Variable: On Average ____% of our customers' orders are delivered with the possible short lead-time.
On Average ____% of our customers' orders are delivered with the possible short lead-time.
30.00
20.00
10.00
.00
-10.00
-20.00
-30.00
-2.00
-1.00
.00
1.00
2.00
B.Supplier Development (SD)

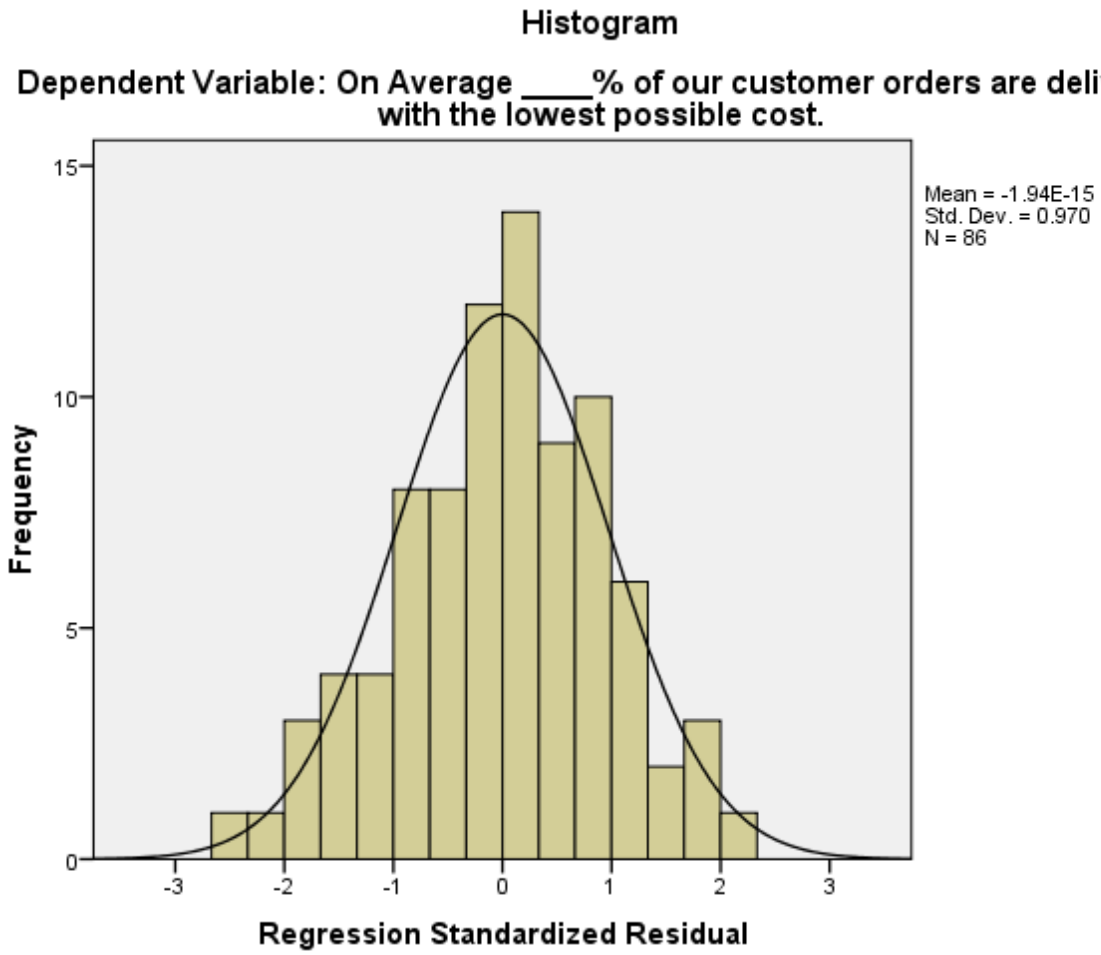

Partial Regression Plot
Dependent Variable: On Average ____% of our customers' orders are delivered with the possible short lead-time.
On Average ____% of our customers' orders are delivered with the possible short lead-time.
60.00
40.00
20.00
.00
-20.00
-40.00
-3.00
-2.00
-1.00
.00
1.00
2.00
3.00
C.Supplier Relationship Management (SRM)

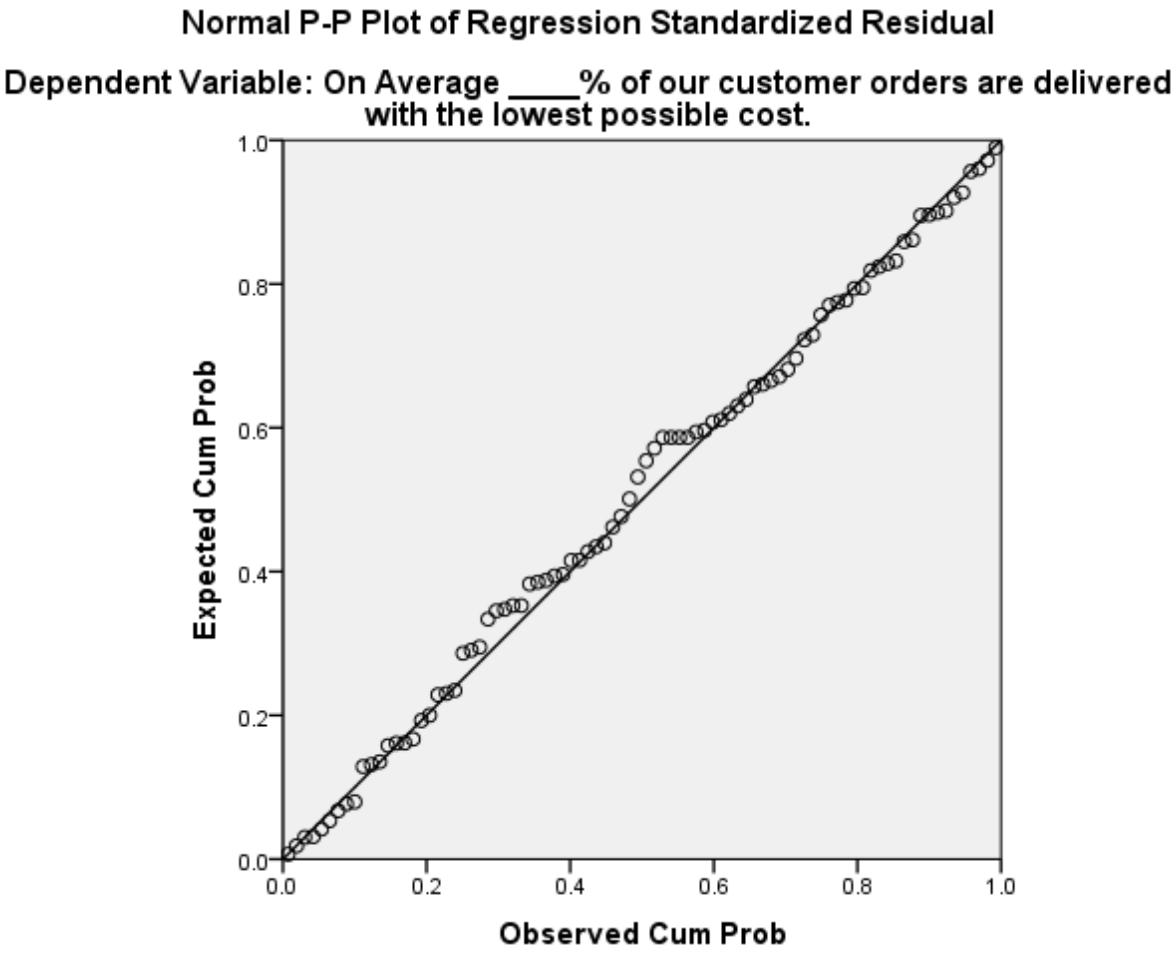

Histogram
Dependent Variable: On Average ____% of our customer orders are delivered with the right quality.
Mean = 2.74E-15
Std. Dev. = 0.970
N = 86
Frequency
Regression Standardized Residual

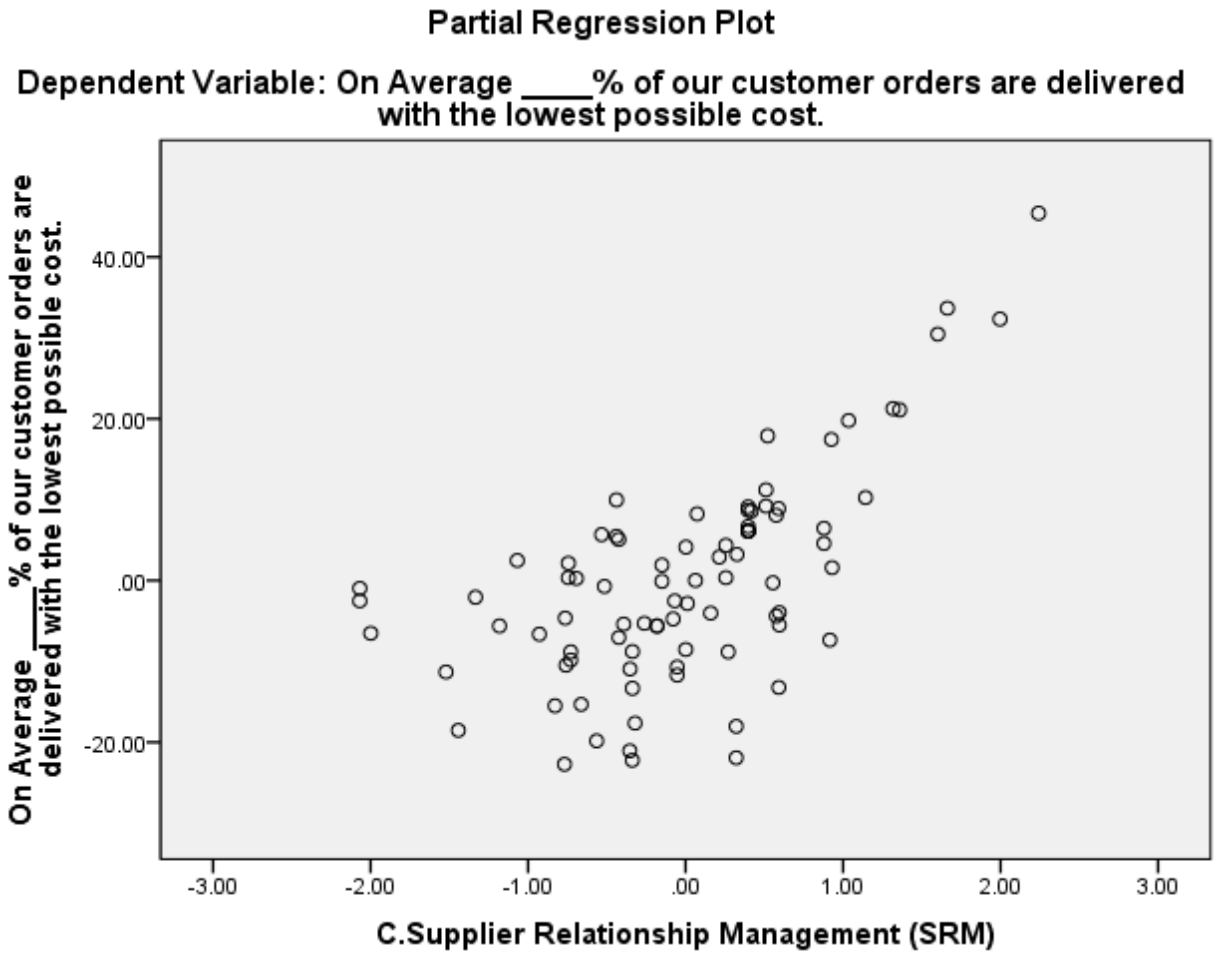

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: On Average ____% of our customer orders are delivered with the right quality.
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Partial Regression Plot
Dependent Variable: On Average ____% of our customer orders are delivered with the right quality.
On Average ____% of our customer orders are delivered with the right quality.
60.00
40.00
20.00
.00
-20.00
-40.00
-3.00
-2.00
-1.00
.00
1.00
2.00
3.00
C.Supplier Relationship Management (SRM)

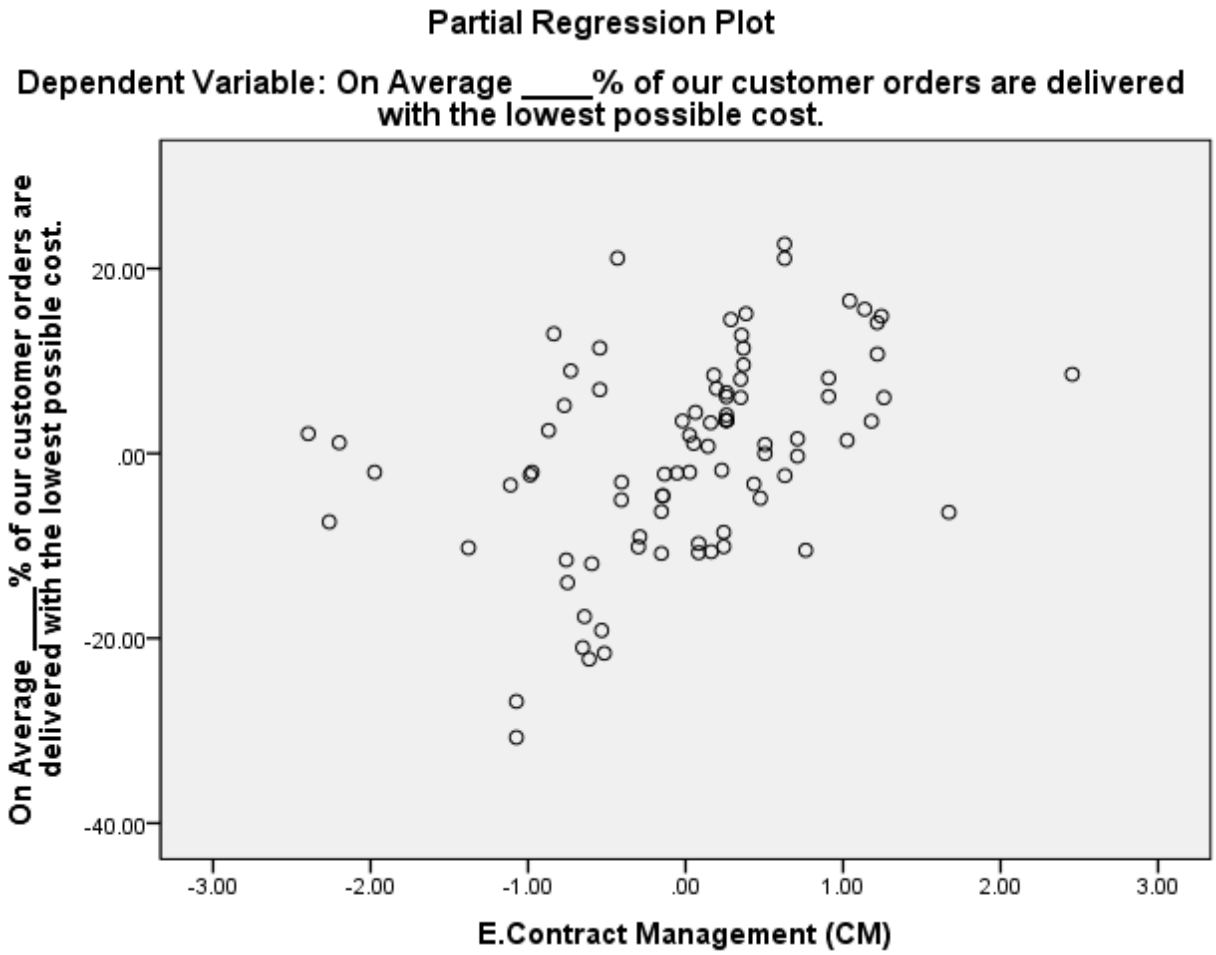

Partial Regression Plot
Dependent Variable: On Average ____% of our customer orders are delivered with the right quality.
On Average ____% of our customer orders are delivered with the right quality.
30.00
20.00
10.00
.00
-10.00
-20.00
-30.00
-3.00
-2.00
-1.00
.00
1.00
2.00
3.00
E.Contract Management (CM)


Histogram
Dependent Variable: On Average ____% of our customer orders are delivered with the lowest possible cost.
Mean = -1.94E-15
Std. Dev. = 0.970
N = 86
Frequency
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: On Average ____% of our customer orders are delivered with the lowest possible cost.
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Partial Regression Plot
Dependent Variable: On Average ____% of our customer orders are delivered with the lowest possible cost.
On Average ____% of our customer orders are delivered with the lowest possible cost.
40.00
20.00
.00
-20.00
-3.00
-2.00
-1.00
.00
1.00
2.00
3.00
C.Supplier Relationship Management (SRM)

xc


Partial Regression Plot
Dependent Variable: On Average ____% of our customer orders are delivered with the lowest possible cost.
On Average ____% of our customer orders are delivered with the lowest possible cost.
20.00
.00
-20.00
-40.00
-3.00
-2.00
-1.00
.00
1.00
2.00
3.00
E.Contract Management (CM)