

**SUPPLY CHAIN STRATEGY AND ORGANIZATIONAL
PERFORMANCE OF KENYA POWER**

BY

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**A Research Project Presented In Partial Fulfilment Of The Requirements for Award of
Master of Business Administration, School of Business, University of Nairobi**

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DECLARATION

This research project is my original work and has never been presented to any other institution or university for academic or other purpose.

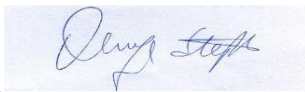


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This research project has been submitted for examination with my approval as the University supervisor.

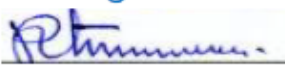


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DEDICATION

I wholeheartedly dedicate this research project to my beloved family for their encouraging words and support especially during my weak moments due to busy work schedules. You are my pillars and my love for you is too much. Thank you. God bless!

ACKNOWLEDGEMENT

First, I really appreciate Everlasting God for His love over my life. Through Him, I got the strength to take me through to the end of this research project. Second, I sincerely thank my supervisor, Dr. Nyamwange who accorded me more than enough support in terms of comments, corrections and profession guidance from the initial stages until the end of this work. All these resulted into a refined work. God bless you. Last, I thank the management of Kenya Power who made it easier for me to collect necessary and adequate data for analysis. The data helped me greatly in refining this research project.

ABSTRACT

Supply chain is increasingly becoming vital for the organizational growth and survival thus effective and efficient management of supply chain activities creates competitive edge. Therefore, this study had two main objectives that include; first, to establish supply chain strategy adopted by Kenya Power and second, to evaluate the effect of supply chain strategy on organizational performance of Kenya Power. The study adopted a longitudinal research design. Longitudinal research design was appropriate for since it allowed researcher to gather data over a period of three years on quarterly basis since the Kenya Power strategic plan was launched. Data was collected from secondary sources only using the secondary data capture form. The findings showed that lean supply chain strategy is most frequently employed by Kenya Power compared to other two supply chain strategies studied- Agile and hybrid supply chain strategies. Regression analysis results indicated R square value of .215 which suggest the extent to which lean supply chain strategy and agile supply chain strategy predict the organizational performance of Kenya Power. The study concluded that all the three variables, which include lean, agile and hybrid supply chain strategies had been practiced at some point by Kenya Power in its effort to improve both financial performance and operations efficiency. The study recommends that Kenya Power should aim to efficiently and effectively implement hybrid supply chain strategy where both lean supply chain strategy and agile supply chain strategy are applied concurrently.

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LIST OF ABBREVIATIONS & ACRONYMS

ANOVA	Analysis of Variance
CMA	Capital Market Authority
DOI	Diffusion of Innovation
GDP	Gross Domestic Product
KPI	Key Performance Indicator
KPLC	Kenya Power & Lighting Company
NSE	Nairobi Securities Exchange
SC	Supply Chain
SCM	Supply Chain Management
SPSS	Statistical Package for Social Science
TCA	Transaction Cost Analysis

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CHAPTER ONE: THE INTRODUCTION

1.1 Background of the Study

Supply chain is increasingly becoming vital for the organizational growth and survival thus effective and efficient management of supply chain activities creates competitive edge. The study of supply chain management is of great importance when it comes to how firms maximize their total value through efficient and effective utilization of resources (Kamau & Ismael, 2017). The process of receiving inputs from suppliers of the firm, adding value to them and delivering to customers is the main principle of supply chain tasks (Ivanov & Dolgui, 2020). In an attempt to create competitive advantage in the supply chain, which encompasses innovativeness, the organization has to pool resources in the most coordinated manner to ensure customer satisfaction since pooling of resources and capabilities enhances flexibility in operations of supply chain. (Storer & Hyland, 2011). Sufian (2010) further argue that for a firm to attain competitive edge and improved performance, the strategy employed in managing supply chain framework needs to support the strategy of the business, which is congruence with the overall organizational performance.. There are several current practices employed by several organizations worldwide. Sabbaghi & Bend(2011) insinuate that advancement of information technology, emergence of new products whose life cycle is shorter, increase intensity of global market competition and dynamics in managing customers' expectations has caused the management of different organizations to rethink and modify the strategy of supply chain. The modern new information economy that also be referred to as internet economy or digital networking has given people platform recognized globally for interaction and information search

The study anchored on three theories, which include Diffusion of innovation, Network Governance and Transaction Cost. Diffusion of innovations is a theory that aims to give explanation to what,

why and how modern technology and ideas spread. According to Rogers (2003) four key factors that influence spreading of new ideas comprises of the innovation itself, communication networks, time factor, and a system of social interaction. The theory thus is appropriate for this study since supply chain strategies management practices is a modern phenomenon. The theory of network governance puts forwards the idea of a responsive mechanism that specifies the conditions of asset exchange, uncertain nature of demand, and the complexity of the tasks involve and how often they take place. The named conditions for exchange improves the firms capabilities thus enable to achieve seamless transactions. According to Halldorsson (2007) the Transaction Cost Analysis (TCA) theory advocates for lowest charges across the supply chain of the firm hence forms the foundation for this study.

Kenyan economy, which is ahead of the peers in the Eastern Africa region, has taken a promising path in developing its economy further through institutionalization of research institutes in different fields in an effort to successfully serve the rising demands of its citizens (USDS, 2010). Research and development is one of principle, which has been recognized as possessing magnificent ability to enhance efficiencies and minimize charges across the supply chain networks (Burgress et al., 2006). Agriculture has been the main driver of Kenyan economy since independence. On the same line, industrialization also plays major role in shaping the country's development plans. The industrial sector's account for about 15 – 16 percent of the Kenyan monetary gross domestic product (GDP) whereas manufacturing sector is stagnating at little more than 10 percent for the last twenty or more years. Manufacturing tasks form the biggest percentage of the total produce from industrial sector thus the main pillar of the industry (ROK, 2012). This therefore calls for Kenya power to ensure reliability in her mandate hence the need for this study

to evaluate the supply chain strategy. The study sought to establish how different supply chain strategies such as lean, agile and hybrid affect the overall performance of the company.

1.1.1 Supply Chain Strategy

A supply chain is a set of tasks that involves value addition practices thereby connecting the suppliers and customers of the enterprise. Supply chain strategy is a means of enhancing way of increasing organizational performance with an aim for ensuring long term goals are achieved. The strategy simplifies the supply chain process since it allows seamless movement from the point of production to the end consumers and storage of inventories that are in three forms, that is, raw materials, work-in-progress and finished products (Sohel & Haji-othman, 2015). Supply chain management has increasingly become significant pillar for companies in their endeavour to meet strategic plans. To achieve these strategic objectives at the supply chain level, organizations must apply suitable strategy of supply chain management. Cohen & Roussel, (2005) argue that appropriate strategy will ensure integration and coordination among supply chain partners to produce the required performance. An organization should adopt a strategy, which fits the nature of their products, as well as market position (Lewicka, 2011). According to Qi et al (2011) the first phase in coming up with an effective supply chain strategy is to factor in the demand behavior of a company's product, which is either functional or innovative.

Sukati et al. (2012) highlighted three main concepts of supply chain strategy as lean, agile and hybrid supply chains that an organization should put into consideration. Vonderembse et al. (2006) further argue that standard products, which in their very nature are simple products due to little differentiation involve, fit in a lean supply chain. It makes use of continuous improvement techniques with main aim of eliminating wastes. On the contrary, innovative products that, require

sophisticated technology, need an agile supply chain. It is appropriate due to its ability to respond quickly to dynamic global markets.

Hybrid products, which are due to their complexity, require several components and active organizations in the supply chain calls for hybrid supply chains. This is because of need to coordinate a variety of supplier relationships. For successful production of these complex products, hybrid supply chains have to provide platform for the integrating the capabilities of lean and agile supply chains. The aforementioned types of supply chain strategies have been emphasized by Towill and Christopher (2002) that they include agile, lean and hybrid supply chains. The study conducted by the duo, highlighted a case study that showed the way lean and agile supply chains could be effectively used together to produce “hybrid” or “leagile” supply chain. Consequently, this study will adopt the three concepts of supply chain strategy such as lean, agile and hybrid supply chain to understand their impact on organizational performance.

1.1.2 Organizational Performance

Organizational performance comprises of the actual results or outcomes of an entity as benchmarked against the planned outputs as highlighted in goals set. Richard et al. (2009) further emphasizes that it consists of the three specific areas of firm results. One, performance of financials, which is in terms of profits recorded, return on employed assets, return on capital investment. Second is performance of the product in the market expressed in terms of total sales, and market share. Third is shareholder return whose indicators are aggregate return for shareholders, economic value addition. According to Demeestère as cited by Matei (2006) the notion of performance in the public sector is at the centre of three concepts of operations. First concepts involves implementation of the practices laid down by the institution as blueprinted in its

own policy. Second concept focuses on the target groups that comprises of customers, consumers and other players in the public services that the institution provides. Third concept is about effective utilization of resources the institution owns to achieve the desired outcomes. According to the Profiroiu (2001), definition of performance in the public sector context is to do with the relationship that exist between objectives, means and outcomes thus performance is the output of simultaneous executions that results into efficiency, effectiveness and adequacy of budgetary . For this study organizational performance will be broken down into financial and operations performance. Financial performance was based on quarterly profit margins whereas operations performance was based on reliability of electricity in terms of reduced blackouts, increased meter installations and reduction on the number of faulty meters

1.1.3 Kenya Power

The origin of Kenya Power can be traced back from 1875. The company is accredited to ensure a transmission and distribution of energy aimed at enhancing connectivity of customers, delivery of excellent customer services, improved stability of financial muscles and ability to sustain it, enhanced efficiency of distribution channels and streamline operational processes that will guarantee enhanced efficiency (Kamau & Ismael, 2017). According to Chukwuma, 2020, Sub Saharan Africa and Kenya are still struggling with efficient supply chain strategy compared to the developed world. Traditional methods and processes are still in operation and there is need to incorporating Information Technology to improve its supply chain performance(Chukwuma, 2020). The Kenya Power supply chain policy 2015, the organization is tasked with the distribution of energy, leasing of fiber to telecommunication companies and training on energy issues

Despite a lot of efforts by Kenyan government to enhance accessibility of electricity to majority of the population, rates of electrification differ widely from one area with major variations

between rural and urban set ups (Lee et al., 2016). The disparity is attributed to lack of enough infrastructure in the rural accompanied by low-income earners. The financial stability and sustainability of Kenya Power has been in doubts in the recent past due to decline in the profits major one experienced in financial year ended June 2019 where it posted 91.98 percent decline in net profit Kes 262 million, attributing it to high cost of buying fuel (KPLC financials, 2019). The company has a well-established procurement department headquartered in Nairobi. This department in Kenya Power is mandated with tasks of performing the activities associated with procurement that should strategically place the company at better position of enhancing its business growth whose indicators include new numbers in terms of customer connections, expansion of revenue collection bracket and ensuring supply of quality electricity to customers in need.

1.2 Research Problem

The concept of SC Strategy continues to receive more attention from all corners including academicians, business consultants and management teams. Most organizations have begun to understand that supply chain strategies is vital in developing sustainable competitive advantage. Despite this increased relevancy of this concept, the literature so far has not been able to provide solution by giving way out of this quagmire so that the interested parties can comfortably follow the established way in the practice of SC Strategy and management of the same (Perona, 2004). A lot of the current research in SC strategy and management cover narrow view that mostly emphasizes on the downstream of supply chain network or on its upstream section or still on the limited features of SC strategy and management. On the international view, studies for instance, one conducted by Clark & lee (2000) narrowly covered the downstream relationships among

manufacturers and retailers. Very few studies conducted recently had given this topic a wider view that covers upstream simultaneously with downstream.

For effective and efficient functioning of Kenya Power, various ways of energy production should be explored to ensure adequate and continuous supply of electricity. Other sources of energy such as geothermal, renewable wind energy and solar energy ought to be harnessed to ensure continuous supply. Unscheduled power interruptions should be minimized to ensure reliability and consistency. The Kenya Power has monopolized market of electricity distribution in Kenya. A World Bank study by Public Utility Research Centre University of Florida (2013) indicate that power disruption in Kenya is on average of 56 days in a year adversely affecting the operations of most enterprises. This creates uncondusive business environment compared to developed countries like United States of America where power disruption is a single day in ten years. The study further noted that more 50 percent of big firms have back-up generators, implying inconsistency and unreliability of power distribution in Kenya. Factors such as poor generation of power, ineffective transmission and distribution systems, and poor maintenance are the main cause of this underperformance by Kenya Power. Consequently, the underproduction of electrical energy inhibits the ability of Kenya Power to meet demand thereby adversely affecting its financial performance. The distributive role of Kenya Power fits so well in the functionality of supply chain management thus its enhancement is possible by employing effective and efficient strategies.

Most of the past studies reviewed mainly covered on the engineering perspectives of the firm's performance and service improvement for instance the 24-hour supply and the quality of power distribution (Gitura 2006; Alston 2011; Fodor, 2017). Furthermore, review of previous studies reveals methodological as well as conceptual gap. On the methodological gap aspects, none of the published studies in this area employed longitudinal research design which will be appropriate for

this study thus will be filled. A study by Kamau & Ismael (2017) that used Kenya Power as a case study in an effort to establish the relationships between strategic supply chain practices and performance of state corporations, focused on supply chain practices such as managing customer relationships, distribution networks, electronic procurement and supplier relationships. On contrary, this study focused on the key concepts of supply chain strategy study, which include lean, agile and hybrid strategies of supply chains that gave rise to a conceptual gap that the study aimed to fill by answering the research question; what are the relationships of supply chain strategies and the organizational performance of Kenya Power?

1.3 Research Objectives

- i. To establish supply chain strategies adopted by Kenya Power.
- ii. To evaluate the effect of supply chain strategies on organizational performance of Kenya Power.

1.4 Value of the Study

The findings from this research work will form basis for future research to academicians and improve their knowledge on the topic of supply chain strategies and enable scholars in developing theories in line with this topic.

This study will be so relevant to the practitioners in the public sectors since its conclusion can be used by management on formulating strategic plans for their institutions.

Outcome of this study will be of value to policy makers such as NSE, CMA, Energy and Petroleum Regulatory Authority and Government in formulating policies which are of benefit to Kenya Power which is the backbone of any economy.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter focusses on the review of written works, which are related to supply chain strategy. The researcher analyses the works of other scholars with aim of on highlighting the knowledge gaps emanating from the literature that has been reviewed. The chapter will be organized into subsections, which are, theoretical review, empirical studies on supply chain strategy and organizational performance and finally conceptual framework.

2.2 Theoretical Review

The study was built on three theories that include Diffusion of innovation, Network Governance Theory and Transaction Cost Theory because their proponents' arguments are in line with the subject. The study therefore borrowed a lot from the aforementioned theories in explaining association between supply chain strategy and organizational performance of Kenya Power.

2.2.1 Diffusion of Innovation Theory

Rogers (1962) is the proponent of Diffusion of Innovation (DOI) Theory, which is the oldest theory of social sciences (Wayne 2019). DOI emanated from the field of linguistic studies, communication department to elaborate the momentum an idea or product information gains and spreads (diffuses) in a particular social set up or population. As a result of this diffusion, people existing in the said social system adopt the new idea, behavioral change or the intended product information. Adoption process implies that an individual performs a particular tasks uniquely compared to the past performance, that is, buy or consumes a new product, earn and exhibit a new behavioral change. The vital feature for adoption is that the person's perception about the idea, behavior exhibited, product should be new or innovative. It is the perception change that is the fundamental pillar for the diffusion process.

Rodgers (2003) argued that there is no simultaneous adoption of a new idea, behavior, or product in a social structure or organization instead the process involve some individuals who are faster in adopting the innovation than the rest. Research findings in this area show that the early adopters of innovation exhibit different traits compared to late adopters of the same innovation even though both groups exist in the same social system. Consequently, during promotion of a new product, idea or behavior targeting a particular population, promoters should understand the characteristics of the group to identify enablers or hindrances to adoption of an innovation. Despite the fact that a big percentage of the general population find themselves in middle category of adopters, there are five categories of adoption process that should be understood for better delivery of information. In promoting an innovative product, idea or behavior, a number of unique strategies are employed to entice different categories of adopters. The three concepts of supply chain strategy are adopted by organizations at different levels thus relevancy of this theory to the study. Thus, the theory is related to this study because it highlight how an idea spread in an organization, which in this case were the concepts of supply chain strategies investigated.

2.2.2 Network Governance Theory

This is the main theory. In developing the key propositions for the network governance theory, researchers have come up with a number of definitions but critically revolves around two main concepts: First, is about the pattern or nature of interactions in exchange programs and structure of the relationships. Second concepts describe the flow of resources between independent units of the organization. The first concept deals with lateral or horizontal arrangements of exchange, interdependencies created by recurring exchanges that are long-term in nature, informal inter-organizational collaborations and reciprocal communication systems. These features have been

emphasized by a number of researchers (Powell, 1990; Larson, 1992; Kreiner & Schultz, 1993). Additional propositions of the theory include well framed relationships among persons, groups, and entities long-term strategic ties across the target markets and a group of companies that use of binding at an intermediate stage (Dubini & Aldrich, 1991; Gerlach & Lincoln, 1992). The second concept concentrates on movement or distribution of resources (Powell, 1990) among different social classes of organizations especially those having separate sections and lastly emphasize on the independence of these units.

According to Jones (2014), the use of network governance among groups of firms has immensely increased. This preferred structure of network governance comprises of informal social set up and not bureaucratic systems. The informal social system have formal contractual ties between the firms capable to managing the complexity of products and services in an environment full of uncertainty and competition. Management of relationships in organization has the same importance as skills management. To reduce the impact of uncertainty, firms strive to design their partner relationships into a network structure incorporating trust and reciprocity principles. On other words, a network is defined as a collaborative composition that does not depend on market demands or hierarchy. This type of networks are made up of financial and legal independent companies but are mutually dependent in working towards attainment of common targets. Therefore, conventional theories on governance especially mandate of director's board in the private entities may not apply the principles of network theory (Assens et al.2016).

The dynamic environment in the contemporary world makes the firm's performance to depend on many partners beyond the direct and indirect ones. Therefore, interaction nature of the firms in this era is significant for their growth and survival. This is because the manner in which entities interact with other entities paves way for innovating additional resources. Thus, the two firms

coming together for a particular purpose creates synergies and get to understand the strengths of each other. The network theory offers a foundation for understanding the significant role each organization in a partnership plays, which may range from trust building, long term relationships and efficiency in applying some systems and processes. There are two types of processes that enhance the nature of relationships between two entities. These processes include the exchange process whereby the entities involve share about information technologies, products and services. The second process is the adaptation process where the two organizations learn and adapt with the processes of each other for instance administrative processes and legal procedures (Johanson and Mattsson, 1987)

2.2.3 Transaction Cost Theory

Halldorsson (2007) defined TCA as a theory that safeguard the companies against unnecessary costs across the supply chain by ensuring that charges are maintained at the minimum level possible. The fundamental reasoning of transaction cost theory is that companies economize on costs by selecting board of governance emphasizes on cost management of both production and transactions (Mooi, 2015). Transaction cost approach has been extensively used clarify how the production, distribution, and consumption of goods and services takes place in order to spur economic growth. In 1970s Williamson (Mathematical economist) incorporated TCA in determining the firm's total market equilibrium and cost incurred in making an economic exchange which is of great importance to the large institutions like Kenya Power.

Using the concept of Vertical integration where a firm controls a number of phases of the supply chain, businesses can minimize the transaction expenses of their operations (Halldorsson, 2007). Vertical integration is thus an appropriate mechanism of ensuring that inventory management costs are reduced while at the same time increasing customer satisfaction through increased service

delivery. Further releasing the tied capital to be used in other areas of operations. The notion of vertical integration as branch of TCA, if applied by Kenya power, would result into enhanced supply chain performance thereby gaining efficiency.

2.3 Supply Chain Strategy

The practices of supply chain strategies begin with the value additions to organization's customer base, emanating from fundamental competencies and identification of market champions to show the contribution of supply chain towards achievement of the business goals (Tang & Gattorna, 2003). Towill and Christopher (2002) advanced three kinds of strategies of supply chain that include agile, lean and hybrid supply chains, which have influence on the supply chain performance.

2.3.1 Agile Supply chain Strategy

Agile supply chain strategy deals with the responsiveness and flexibility of the organization to the needs of its customers (Jacobs & Chase, 2008; Lee, 2002). Whereas, all types of companies can employ the agile supply chains, it is most appropriate for the products or services that have uncertain market demand. It is most suitable in managing time compression, circumstances that require quick response and elimination of the barriers to achieving a quick response (Christopher, 2003). Most researchers as well as practitioners have emphasized the significance of on supply chain agility in coordinating wide business capabilities, speeding up the firm's response to the changing market demands (Braunscheidel & Suresh 2009, Lee 2004). Braunscheidel & Suresh (2009) add that the scope of supply chain agility goes beyond an individual firm and incorporates relationships with major customers and suppliers.

For the organizations to exhibit their agility, the supply chain should have some distinctive features. First characteristic is the market sensitivity of the agile supply chain. This implies that supply chain management of the organization has the ability to understand and respond to the actual market demand. However, majority of the companies have demand based on forecasting rather than market responsiveness. Agile supply chain strategy deals with decisions made based on information about the real customer needs but not data from the forecasting techniques following the previous sales volume or the shipments, which will results into inventory thereby increasing costs. The application of up to date information technology plays a big role in collecting vital data on the demand from the points of sales directly allowing the organizations to act needs of market by responding to them directly. (Rana et al, 2015)

2.3.2 Lean Supply Chain Strategy

This supply chain strategy looks into how organizations can eliminate wastes through increased efficiency by focusing on the accurate quantities of goods as dictated by demand system. The main aim of employing lean supply chain strategy is to minimize or avoid unnecessary costs and wastages. Lean strategy demands that retailers to assess the market demand and come up with goods and services that allow customers to reap maximum benefits at a fair price. This holistic approach to implementation of lean supply chain strategy enables the organizations to employ mechanisms that benefits both functional unit as well as wider supply chain performance. Some of the principles that a lean supply chain use to achieve the ultimate goal of costs and waste reduction (Vitasek, Manrodt & Abbott, 2005) include the elimination of non-value-added activities, focusing on scale economies and applying optimization techniques to obtain the best capacity utilization (Jacobs & Chase, 2008; Lee, 2002)

The primary objective of lean supply strategy is to achieve efficiency in the production process and distribution of products using the best methods that helps in waste reduction within the spectrum of value creation. Prudent assessment of demand in advance by management allows for planning and assortment of the required products in most efficient manner to enhance delivery of orders from customers. Consequently, minimal wastages and inventory, which improves the efficiency of inbound activities of overall supply chain. The lean strategy has an advantage of companies realizing excess amount of inventories of finished goods at the outbound end of supply chain. "Lean thinking" is the most efficient method that allows organizations reduce wastages in a number of ways.

2.3.3 Hybrid Supply chain Strategy

Hybrid strategy is a blend of lean supply chain strategy and agile supply chain strategy in organization's operations (Towill & Christopher, 2002). Hybrid supply chains is also known as leagile supply chains, a word originating from the combination use of lean and agile approaches in performing supply chain tasks therefore benefiting from applying both of them (Mason-Jones et al., 2000). The concurrent application of both lean and agile strategies, which is the hybrid strategy, can be done in many ways according the organization's production process. For instance, products that fits into high volume production and high demand stability thus make to order, lean strategy is most appropriate. Whilst agile supply chain strategy is most applicable for make to order, as it requires flexible capacity to accommodate uncertain demand or unexpected requirements.

Supply chains performance employ the hybrid solution by maintaining strategic inventory in some unique form either generic or unfinished state the point of de-coupling with final frameworks

designed quickly upon making known the real demand. The purpose of hybrid strategy is to create an agile response model with a lean platform by trying to follow lean principles through to the decoupling point after which agile practices set in. Entities that aims at enhancing performance through cost-efficient management principle usually operate at a point offering lowest cost and have strategies developed in line with both the lean supply chains (Gunasekaran, 2008). On the other hand, entities that aims for competitive advantage through innovation procedures should apply strategies in line with the agile supply chain (Gunasekaran, 2008). This therefore, implies that for organization to gain both benefits, it should employ the strategies of lean and agile at the same time resulting into hybrid or leagile supply chain strategy.

2.4 Supply Chain Strategy & Organizational Performance

Studies such as Delaney et al, (2006); Hoque et al, (2000) & Greene et al, (2007) show that Supply chain management strategy positively affects the extent of organizational performance. Delaney et al, (2006) argue that performance of the organization is evaluated based on supply chain components such as quality of products and services, customer satisfaction, innovativeness, market demands and productivity of employees. On the same vein, Hoque et al, (2000) demonstrate how other parameters of supply chain management are vital in determining organizational performance. They stated that key parameters such as balance score card that constitutes return on investment, sales margin, capacity utilization, satisfaction of customer needs and quality of products and services can be applied in appraising organizational performance. Whilst Greene et al, (2007) highlighted metrics of supply chain management strategy, which include growth in sales and market share, profit earned and return on investment as important components in determining organizational performance.

A well-designed and implemented supply chain management strategy results into less inventory level implying reduction in holding costs and excellent customer service (Chong and Ooi, 2008). An excellent service delivery to customers will mean customer satisfaction thereby improved organizational performance. This is further asserted by Li et al. (2006) stating that the main benefit of applying components of SCM appropriately especially in circumstances of meeting short term objectives of the organization is increased productivity, reduction of inventory level and decrease in lead times. On the long-term basis, it enable companies to increase its market shares as result of integration and coordination of supply chain activities.

The subjective nature of performance concept has generated a number of definitions from variety of scholars and researchers. As a result, a lot of articles or research works have linked many definition of performance to the environmental elements. In the business context, Folan (2007) pinpointed three objectives or priorities that reveal what performance is. First, analysis of performance should be unique for each organization depending on the environmental factors influencing its operations. For instance, an entity's performance should be analyzed within the market environment rather than factors affecting its operations. Second, performance needs to be associated with organization's objectives in question by analyzing the variances realized. Consequently, an organization computes its performance against the agreed objectives by the internal parties and not those applied by the external parties or authorities. Third, the concept of performance should be formatted into relevant and recognizable elements. Folan (2007) further urged that the concept of performance attract many definitions and keys terms should be about the analysis and quantifications.

A study conducted by Narasimhan and Jayaram, (2008) established that there is positive correlation between strategic sourcing and organizational performance. They stated that a well-executed strategic sourcing initiatives leads to improved supply chain performance, which is a tenet of organizational performance. The study further found that selection of appropriate strategic sourcing decisions enable manufacturing companies to achieve goal as evidenced in a survey of two hundred fifteen manufacturing firms in North America. Additionally, the creation of strategic supplier partnerships is a fundamental element in developing a supply chain strategy.

Makena and Iravo (2014) conducted a study on influence supply chain management practices have on the performance of an organization. This was a case study involving Haco Industries Limited in Kenya. The research findings showed that a lot of efforts is geared towards the implementation of supply chain management practices in Haco companies. The practices had a positive relationship with the performance of the organization. This implies that all the practices investigated improved the performance indicators, which were in terms of reduction in operational cost, minimization of lead time, improved service delivery to customers, enhanced quality of products, quick response to market dynamics and expansion of market share and sales. Applying the supply chain practices concurrently produced a greater impact on the organizational performance of the Haco industries limited with an indication that an effective combination of supply chain strategies would reap more benefits.

A study by Chopra, Meindl and Karl (2010), classified the supply chain activities advanced by Handfield, Monczka, Giunipero and Patterson (2008) into three main areas, which include procurement processes, management of materials and distribution logistics management. The three streams incorporates the tasks revolving around sourcing and supply chain management. Chopra, Meindl and Karl (2010) added that selection of the right suppliers has link with the efficiency of

buyers since it ensures that they obtain correct inputs that would fulfill their promise on quality, costing, delivery and technology usage. Sourcing from the right suppliers also provides platform for enhancing supplier/partner relationship thus improving the performance of the organization as a whole.

Handfield, Monczka, Giunipero and Patterson (2009) study findings highlighted that an impressive performance of supply chain activities can be achieved through activating the supply chain management enablers that comprises of human resources, organizational structure, information technology capabilities and improved measurement techniques. The study stated that eighteen companies needs to put in place qualified personnel to manage their supply chain tasks. The supply chain tasks involved management of supply chain partners' relationships, simplification of business model, making decision based on facts and understanding the system capabilities of the business. In addition, all the project team should come from all organizations' departments to make the implementation process easy. Therefore, the compromising level should be determined so that talents and skills of each team members are accommodated for the organization's gains.

Another study by Mwale (2014) on supply chain management practices and organizational performance was done on the large manufacturing firms within Nairobi. This study results showed that a significant association exist between supply chain management practices and performance of the organization. The indicators for supply chain management practices in this study were seven consisting of strategic supplier partnership, flow of information, customer relationship management, information quality, degree of outsourcing, lean strategies and practices of postponement. From the study recommendations, researcher pointed out the need for study on firms, which are situated outside Nairobi and even those not dealing with manufacturing activities.

On the same vein, study recommended further researches that will consider additional dimensions of supply chain management as well as the different profiles of respondents.

Kariuki & Ismael (2017) researched on the contribution of strategic supply chain practices in the performance of organization performance focusing on the state corporations in Kenya. They adopted case study research design that is, Kenya Power. The study results revealed that all the independent variables under investigation affect the organizational performance. These variables included managing customer relationships, management of distribution channels, electronic procurement systems and management of suppliers' relationships. Among the variables, it was found that e-procurement play the biggest role towards improving the organizational performance. The research recommended the state-owned entities have to improve on their proactivity especially in managing suppliers' relationships and further incorporates the needs of their customers.

Kitungu (2014) carried out study to find out the influence of supply chain factors on the distribution of power generated at KenGen. The research findings showed that procurement as a factor of supply chain had the greatest influence on the distribution of power that KenGen generates. This was closely followed by two factors that include transportation activities and quality control measures, which also had great impact because KenGen was using high cost of transport and lack appropriate systems that track due diligence and means for benchmarking. The other factors found to influence power distribution were materials or inventory management, material handling practices and methods of storage. The study concluded that customer order processing and production planning has huge influence on the delivery of power generation projects in KenGen. This was due to evidence of increased variation of orders, delays experienced during the processing of orders and in equipment manufacturing. On recommendation, the study

recommended that the users of equipment and materials should undergo proper training to ensure the organization gain adequately from their usage.

A comparison study between two nations, United States and Taiwan was conducted by Chow et al. (2008) to find out if environment has role on the methods of optimization with a focus on supply chain management, an organization adopt. Thorough modeling of structural equation showed that critical components of supply chain management exhibit great effects on the performance of the organization. The findings from the study by Chow et al. (2008) were highlighted as follows: Firstly, there is positive influence between supply chain competencies and the performance of entities in both the countries under the study. This is because the competencies of supply chain tasks are built focusing on quality measures and service delivery levels, operations targets, distribution means and the effectiveness of design in place. The primary purpose of supply chain competencies is the satisfaction of customer needs. Secondly, study found that supply chain practices such as features of supply chain model and customer services directly affect the performance of Taiwan organization but indirectly for those organizations in US. Lastly, there was significant association between supply chain practices and competencies in both United States and Taiwan.

Caddy and Helou (2007) conducted a research to establish whether the system theory could simplify and make it easy for scholars as well as practitioners understand the operationalization of supply chain activities. The study brought out four principles available for the organization for utilization. First principle states that simpler supply chain models takes priority over the complex supply models if the organization advocates for more agility or high responsiveness due to the nature of their products. The second principle states that nature of organizational activities should dictate how the organization manages its supply chain for instance, allocating more resources to

the most active units and less resources to the less active areas. The third principle advocates for enhanced understanding of the supply chain system where organization breaks it down into sub systems for easy understanding. The last principle talks about the dynamism of the supply chains. Supply chains are prone to changes and therefore management support and commitments has to be flexible to accommodate areas that requires change and the implications these changes have on the organizational resources. Therefore, reviews should be conducted regularly to ensure effectiveness of supply chain activities.

Cai et al (2009) in conducting a research on the performance indicators for successful implementation of supply chain practices advocated for a framework that utilizes a systematic method that seeks to enhance the repetitive key performance indicators-KPIs, accomplishments in the context of SC. The research proposed that the interdependent relationships of the KPIs should be quantitatively analyzed. The framework can assist in identification of vital costs associated with Key performance indicators and further provides strategies that aim to improve performance of supply chain tasks thus beneficial to management during decision making. This implies that the study highlighted successful way of coordinating supply chain performance in ever changing areas of operations. KPIs have offered solutions to the complex problems of measuring performance by revealing the systematic method that simple to understand as few past researches had proposed the best way of dealing with them. The structure and methodological approach has simplified work for the organization in understanding ways of improving the performance issues across the whole supply chain management in a structured manner, through management of complicated relationships. The framework provides the opportunity of having a holistic approach in solving relationships that are complex but in the most feasible manner.

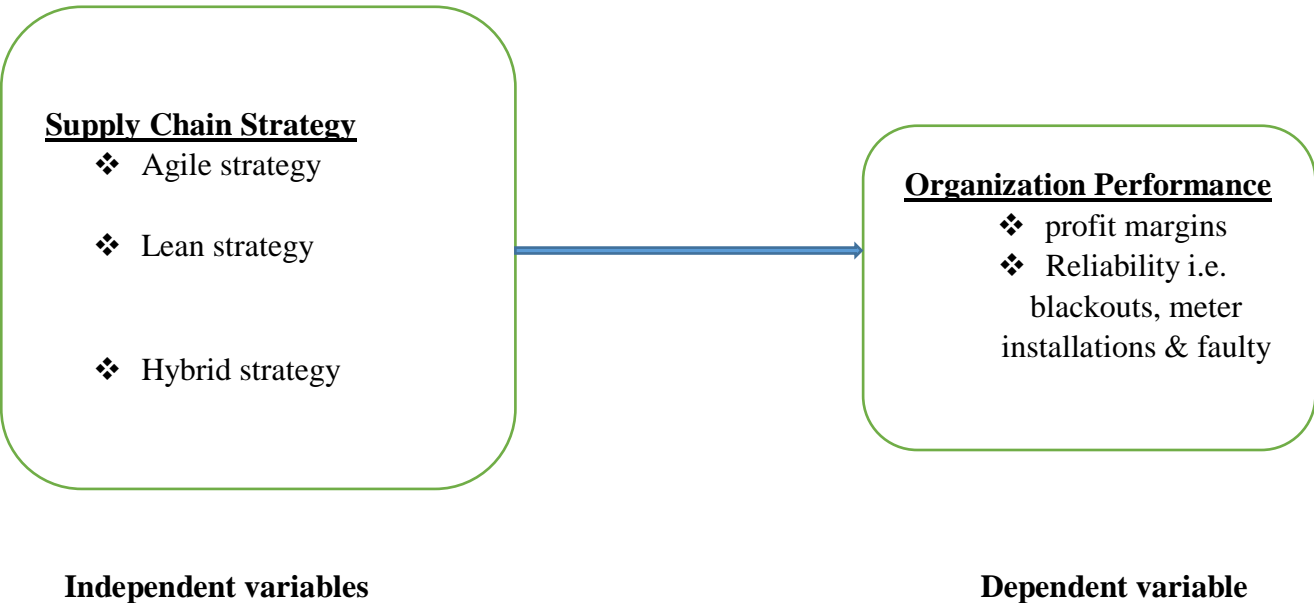
Matei (2006) described the concept of organizational performance in the context of public sector as proposed by Demeestère. Study found that the notion of performance in the public sector revolves around three ideas. First is the implementing orientations that the entity has in place using the available tools captured in its policy. Second is focusing on the key stakeholders such as customers, consumers and other players in the public service. Third is the efficient and effective utilization of the resources, an institution possess to achieve the best outcome. Profiroiu (2001) highlighted that definition of performance within the context of public sector entails the nature of relationship that exists among the organization's objectives, means of attaining the objectives and the results thereafter. This therefore reveals that performance is the products of efficiency, effectiveness and budgetary process that is adequate in nature. According to Bartoli and Blatrix (2015), the notion of performance revolves around elements like evaluation, efficiency, effectiveness, quality and piloting practices. This study will thus adopt two performance measures such as operational efficiency and profit margins as advanced by Bartoli & Blatrix

2.5 Conceptual Framework

Conceptual framework is a diagrammatical representation of independent variables and dependent variables. For this study, conceptual framework is drawn from the study objective and guided by three theories discussed in theoretical background, which include diffusion of innovation, Network Governance Theory and Transaction Cost Theory. The indicators for supply chain strategy as captured the figure below include agile, lean and hybrid. Organization performance on the other hand is measured in terms of financial as well as operations performance. Indicators for financial performance are profit and revenue which make up profit margins. Operations performance is

broken down into reliability with indicators such as blackouts, meter installations and the faulty meters. Conceptual model is shown in figure 2.1 where each variables indicators are also shown

Figure 2.1 Conceptual model



Source: Researcher (2020)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter presents different stages and sections that describes how analysis of the study findings was done. The chapter also outlines a plan for data collection, measurement and finally the analysis. In this section, most discussion entails ways of conducting research process that involves handling of the respondents, as well as when, where and how the conclusion will be derived from the findings. It is in this part where the researcher identify measures and methods that will be used in gathering, processing and data examination. The chapter is subdivided into; Research design, population of the study, sample size, data collection techniques and finally the data analysis.

3.2 Research Design

The study adopted a longitudinal research design. Longitudinal studies are characterized by making use of continuous or repetitive measurement techniques that follow particular indicators over a period of time. The measures are mainly observable in nature, with quantitative plus qualitative data collection using combination of exposures and outcomes, free of any external factors interference (Caruana, 2016). Since data collection is done upon a set of individuals found in predetermined group, suitable statistical techniques need to be applied to analyse modification over time to the holistic approach to the group, or for particular individuals thus the longitudinal research design best fit this study.

Longitudinal research design was appropriate for this study because it allowed researcher to collect data over a period of three years on quarterly basis since the Kenya Power strategic plan was launched. Application of longitudinal study design enables researchers to examine the same variables repetitively over a period of time to detect any changes of interest to the study (Laureen,

2020). The longitudinal researches are a kind of correlational study that allow researchers to observe and gather data on a number of indicators without trying to influence those indicators of the study variable hence it is appropriate for this study. The researcher collected data on three dimensions of supply chain strategy, which include lean, agile and hybrid supply chains over a period of three years.

3.3 Data collection

Data collections were from secondary sources only. It was obtained from authentic documents such as strategic plans, operational plans, procurement plans and budgetary document. Researcher was able to extract adequate data from the aforementioned documents. Use of secondary data is advantageous to the researcher because they can be easily and quickly located and inexpensive in most instances compared to primary data collection methods (Dunn et al, 2015). Kenya power has a 5-year strategic plan covering from the year 2018 to 2022 hence this study aims to assess the effects of supply chain strategy since its inception that is three years. The three-year period was subdivided into quarters giving data point of eleven for each dimension of the supply chain strategy since strategies are reviewed on quarterly basis.

Organization operational plan is exceptionally detailed document that gives a vivid picture of how human resources or departments such as supply chain department will contribute to the attainment of the firm's set objectives and goals. It provides road map of the daily tasks necessary to run the organization (Shobaki, Amuna & Abu-Naser, 2017). Consequently, the organization operation plan is vital for this study since provided details on the nature of supply chain strategy adopted on quarterly basis. The procurement plans and Kenya Power budget will further enrich data collection. The researcher was able to conduct variance analysis exhibited in the budget document.

The researcher employed secondary data capture form as research instrument for data collection on the supply chain strategy adopted by Kenya Power and effect on performance. The secondary data capture form is attached in appendix 1. It was structured into eleven time periods of yearly quarters from 2018 -2020 that is the years 2018 and 2019 have four each with 2020 having three ending September 2020. The key indicators for the study variables to be captured included dimensions of supply chain strategies practiced in the quarters cover and the performance indicators linked to each practice. The indicators include lean, agile and hybrid supply chain strategies, quarterly profit and total revenue recorded. Thus giving data points of fifty five, a product of eleven periods and five indicators.

3.4 Data Analysis

According to Sekaram, (2003) there are three main purposes of data analysis. First involves is familiarizing with data collected via research instrument. Second encompasses testing the quality of the data, and third, providing the solution to the research questions of the variables under investigation. The data collected through secondary data capture form attached will be inputted into SPSS version 20 to produce both descriptive statistics and inferential statistics. The descriptive statistics adopted was frequency to reveal how often a particular supply chain strategy is applied in the organization. Pearson Correlation and linear regression was applied for data analysis. These descriptive statistics was presented in use table form. Inferential statistics to be used is Analysis of variance (ANOVA).

Figure 3.1 Summary of Data collection and Analysis

Objective	Data collection Method	Data Analysis Method
To establish supply chain strategy adopted by Kenya Power.	Secondary data capture form	-SPSS version 20 - Frequency tables
To evaluate the effect of supply chain strategy on organizational performance of Kenya Power.	Secondary data capture form	-Correlation -Linear regression -ANOVA

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This Chapter 4 deals with data analysis that aims at extracting relevant information for the study in order to come into appropriate conclusions. It also presents results upon which the discussion of the finding made. The research objective of this study were; first, to establish supply chain strategy adopted by Kenya Power and second, to evaluate the effect of supply chain strategy on organizational performance of Kenya Power. The output of the secondary data analyzed via SPSS were statistical methods such as frequency, correlations, linear regression and analysis of variance, which were presented in tables.

4.2 Supply chain strategies adopted by Kenya Power

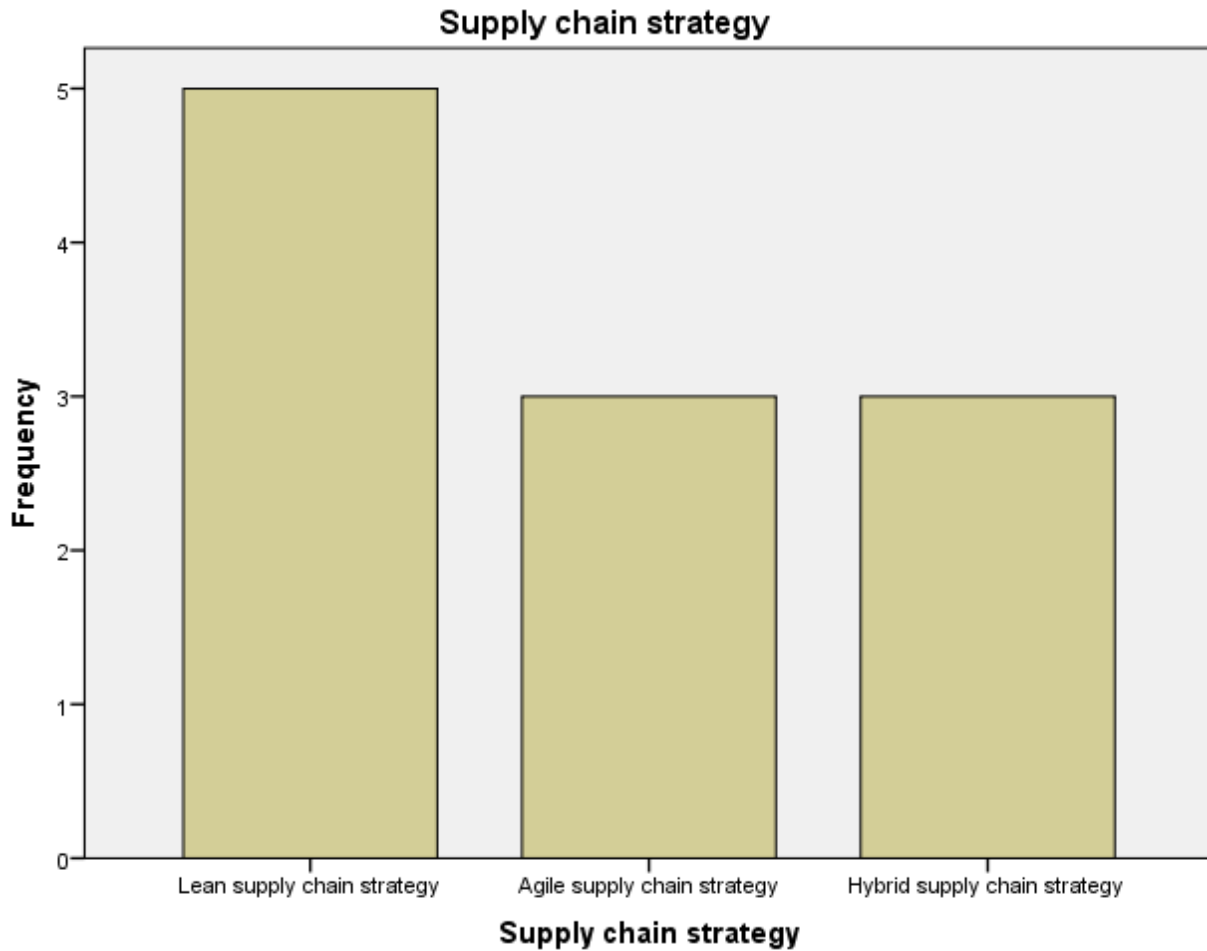
The study employed frequency as the main descriptive statistics to show the type of supply chain strategy that Kenya Power often use in efforts to improve both its operational as well as financial performance. The use of frequency distribution table allows for easy interpretation of the data because one can easily observe how the pattern is coming out. Consequently, the study applied the frequency descriptive statistics to show vividly the type of supply chain strategy, which is dominant at Kenya Power. The results were shown in figures 4.1 and 4.2.

Figure 4.1 Frequency table of Supply chain strategy

	Frequency	Percent	Valid Percent	Cumulative Percent
Lean supply chain strategy	5	45.5	45.5	45.5
Agile supply chain strategy	3	27.3	27.3	72.7
Hybrid supply chain strategy	3	27.3	27.3	100.0
Total	11	100.0	100.0	

From the output represented in figures 4.1, it was evident that Kenya Power more frequently apply lean supply chain strategy in its operations than both the agile supply chain strategy and hybrid supply chain strategy. As shown in terms of percentages figure 4.1, the extent of applying the lean supply chain in the company stood at 45.5 percent indicating that almost half the period covered by the study, Kenya power preferred the use of lean supply chain strategy. The application of agile supply chain strategy scored 27.3 percent, which revealed that Kenya Power had low response rate to a more dynamic environment. The application of both the lean and agile supply chain strategies at the same time had a percentage of 27.3 percent meaning that the hybrid supply chain strategy was not applied to greater extent as well. This resulted from the fact inadequate infrastructure for the implementation of hybrid supply chain strategy.

Figure 4.2 Frequency Chart of Supply Chain Strategy



The extent to which Kenya Power employs each supply chain strategy was further elaborated by the bar charts in figure 4.2. The bar charts showed that in a scale of 1-5, the lean supply chain was at five while both the agile and hybrid supply chain strategies were at three.

In this section, the study tried to find out the type of supply strategy adopted at Kenya Power. It was clear from above presentation that all the three types had been apply at some point by

management of Kenya Power. The findings in this section conform to the supply chain policies of Kenya and findings of a study by Kitungu (2014)

4.3 Relationship Supply Chain Strategy and Organizational Performance

In an effort to find out the nature of relationship between each of the supply chain strategies and the performance indicators of the organizational performance of Kenya power, the study employed correlation analysis. The organizational performance indicators were the net profit, company revenue, number of blackouts and number of faulty meters. Increase or decrease in net profit and revenue being indicators of financial performance while increase or decrease in number of blackouts and faulty meters being indicators of operational performance. Each of the supply chain strategy was run against the performance indicators and results presented in subtitles 4.3.1, 4.3.2 and 4.3.3.

4.3.1 Lean Supply Chain Strategy

The results shown in figure 4.3 below indicate that there was significant relationship between lean supply chain strategy and net profit and at 0.633. This can be interpreted that application of lean strategy had significant effect on the financial performance of Kenya Power. Therefore, successful implementation of lean supply chain strategy would results to growth in profit thereby improving financial health of the organization. However, there was no significant relationship between the lean supply chain and other indicators of performance such as revenue growth, rise or reduction on the number of blackouts and faulty meters. This means that there was little impact employing the lean supply chain strategy had on the operations efficiency of Kenya Power measured specifically in terms of blackouts and installations of meters.

Figure 4.3 Correlations of lean supply chain

		Lean Supply chain strategy	Net profit	Revenue	Number of blackouts	Number of faulty meters
Lean Supply chain strategy	Pearson Correlation	1	.633*	.149	.069	.449
	Sig. (2-tailed)		.036	.662	.840	.166
	N	11	11	11	11	11
Net profit	Pearson Correlation	.633*	1	-.261	.069	.449
	Sig. (2-tailed)	.036		.438	.840	.166
	N	11	11	11	11	11
Revenue	Pearson Correlation	.149	-.261	1	.039	.463
	Sig. (2-tailed)	.662	.438		.910	.152
	N	11	11	11	11	11
Number of blackouts	Pearson Correlation	.069	.069	.039	1	-.179
	Sig. (2-tailed)	.840	.840	.910		.599
	N	11	11	11	11	11
Number of faulty meters	Pearson Correlation	.449	.449	.463	-.179	1
	Sig. (2-tailed)	.166	.166	.152	.599	
	N	11	11	11	11	11

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

The findings are in line with those of previous studies (Chopra & Meindl, 2002; Tseng 2010) that an effective and efficient application of supply chain strategy improves the performance of the

firms as evident in figure 4.3 above that lean strategy has significant effect on the net profit, a financial performance indicator.

4.3.2 Agile Supply Chain Strategy

Results of agile supply chain strategy were displayed in figure 4.4 below;

Figure 4.4 Correlations of Agile Supply Chain Strategy

		Agile supply chain strategy	Net profit	Revenue	Number of blackouts	Number of faulty meters
Agile supply chain strategy	Pearson Correlation	1	-.559	.375	-.039	-.039
	Sig. (2-tailed)		.074	.256	.910	.910
	N	11	11	11	11	11
Net profit	Pearson Correlation	-.559	1	-.261	.069	.449
	Sig. (2-tailed)	.074		.438	.840	.166
	N	11	11	11	11	11
Revenue	Pearson Correlation	.375	-.261	1	.039	.463
	Sig. (2-tailed)	.256	.438		.910	.152
	N	11	11	11	11	11
Number of blackouts	Pearson Correlation	-.039	.069	.039	1	-.179
	Sig. (2-tailed)	.910	.840	.910		.599
	N	11	11	11	11	11
Number of faulty meters	Pearson Correlation	-.039	.449	.463	-.179	1
	Sig. (2-tailed)	.910	.166	.152	.599	
	N	11	11	11	11	11

The output of correlation analysis of agile supply chain strategy against the performance indicators indicated that there existed no significant relationships. The application of agile supply chain

strategy did not have significant effect on the performance of Kenya Power. However, the results in figure 4.4 below showed negative relationship between agile supply chain strategy and the net profit (-.559), number of blackouts (-.039) and number of faulty meters (-.039) whereas there is a positive relationship with revenue growth (.375). The insignificant effects may be because of minimal number of applying the agile supply chain strategy.

The negative relationship between application of agile supply chain strategy and the number of blackouts and number of faulty meters is prove of improvement of operations efficiency. This is because an increase in application of agile supply chain strategy results into a corresponding decrease in number of blackouts and reduction in the number of faulty meters installed for customers consumption. This means that when Kenya Power improved its ability to respond to emerging issues on time, there will be reduction in the number of blackouts experienced in country hence enhanced supply chain performance of the company. On the same vein, improved agility would results into reduction on the number of faulty meters thus increase customer satisfaction and improved operations performance of the company as a whole.

The positive relationship between application of agile supply chain and revenue growth though not significant, was a good indication to organizations financial health. It means that increase in use of agile supply chain strategy led to increase in revenue growth. As pointed above, employing agile supply chain strategy results into reduction in both number of blackouts and faulty meters hence more customers will be attracted resulting into more sales. The negative relationship with net profit could be explained the operational costs associated with the implementation of agile supply chain strategy since involve increase response rate on the part of organization. These findings conform to the findings of previous studies (Jacobs & Chase, 2008; Lee, 2000)

4.3.3 Hybrid Supply Chain Strategy

Hybrid supply chain strategy involves Kenya Power employing both the lean supply chain and agile supply chain concurrent in an effort to improve its supply chain performance. The output shown in figure 4.5 shows that there were no significant relationship between hybrid supply chain strategy and the performance indicators covered by the study. The insignificance nature of relationships could be attributed to the minimal number of times both the lean supply chain strategy and agile supply chain strategy were applied concurrently. Nevertheless, results indicated that there were negative relationship between hybrid supply chain and net profit (-.149), revenue growth (-.542), number of blackouts (-.039) and number of faulty members (-.463).

The results showed that increase in application of hybrid supply chain strategy led to decrease in number of blackouts as well as decrease in the number of faulty meters. This is an indication of how employing the hybrid supply chain strategy is important in improving the supply chain performance thus enhanced operations performance measured in terms of reduction in number of blackouts and faulty meters. Employing both lean supply chain strategy and agile supply chain strategy concurrently will ensure that each of them is used at appropriate functional area that will be beneficial to the firm.

The findings further revealed that the increase in application of hybrid supply chain resulted into decrease in net profit and revenue of Kenya Power. This was a threat to the financial health of the company. The decrease in net profit maybe associated with operational costs associated with concurrent implementation of both lean supply strategy and agile supply strategy, which eats into the revenue generated by the company. During the periods of implementing the hybrid supply chain strategy, revenue generated was on the diminishing scale a sign of financial struggle of Kenya Power. This finding contradicts that of Mason-Jones et al., (2000).

Figure 4.5 Correlations of Hybrid Supply Chain Strategy

		Hybrid supply chain strategy	Net profit	Revenue	Number of blackouts	Number of faulty meters
Hybrid supply chain strategy	Pearson Correlation	1	-.149	-.542	-.039	-.463
	Sig. (2-tailed)		.662	.085	.910	.152
	N	11	11	11	11	11
Net profit	Pearson Correlation	-.149	1	-.261	.069	.449
	Sig. (2-tailed)	.662	.438	.840	.166	
	N	11	11	11	11	11
Revenue	Pearson Correlation	-.542	-.261	1	.039	.463
	Sig. (2-tailed)	.085	.438	.910	.152	
	N	11	11	11	11	11
Number of blackouts	Pearson Correlation	-.039	.069	.039	1	-.179
	Sig. (2-tailed)	.910	.840	.910	.599	
	N	11	11	11	11	11
Number of faulty meters	Pearson Correlation	-.463	.449	.463	-.179	1
	Sig. (2-tailed)	.152	.166	.152	.599	
	N	11	11	11	11	11

4.4 Regression Analysis

The study employed regression analysis to evaluate the effect of supply chain strategy on the organizational performance of Kenya Power. The output of the regression analysis are presented in figures 4.6, 4.7.4.8 and 4.9 with information on model summary, Analysis of variance (ANOVA), Coefficients, and excluded variable respectively.

Figure 4.6 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1				
1	.464	.215	.198	.563

a. Dependent Variable : Organizational Performance

b. Predictors: (Constant), Lean Supply chain strategy, Agile supply chain strategy

The results shown in figure 4.6 above indicate R square value of .215 which suggest the extent to which lean supply chain strategy and agile supply chain strategy predict the organizational performance of Kenya Power. This implies that lean supply chain strategy and agile supply chain strategy share a variation of 21.5 percent of the organizational performance of Kenya Power. The 21.5 percent variation in performance caused by implementation of the supply chain strategy is small hence; a number of other factors contributes the organizational performance of Kenya power. The other factors explain the remaining 78.5 percent of the organizational performance within Kenya Power.

Figure 4.7 ANOVA Output

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.012	2	.006	10.019	.031 ^b
Residual	2.533	8	.317		
Total	2.545	10			

a. Dependent Variable: Organizational performance

b. Predictors: (Constant), Lean Supply chain strategy, Agile supply chain strategy

The ANOVA values indicate that the model was a good fit because the F-value =10.019 and p-value=.031 which is less than 0.05

Figure 4.8 Regression Analysis Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	(Constant)	4.533	1.275		
1 Agile supply chain strategy	.257	.459	.000	.000	.006
Lean Supply chain strategy	.597	.411	.069	.162	.035

a. Dependent Variable: Organizational performance

b. Predictors in the Model: (Constant), Lean Supply chain strategy, Agile supply chain strategy

From the results of coefficients displayed in figure 4.8 the model becomes;

$$\text{Organizational performance} = 4.533 + .257_{AG} + .597_{LS} + \text{Error}.$$

Where,

AG= Agile supply chain strategy

LS = Lean Supply chain Strategy

Error= Error term.

The value at the intercept of vertical axis is 4.533, which implies that the point at which the independent variables is zero, the organizational performance will still be positive. The organizational performance of Kenya Power will still have values despite no effort to implement either agile supply chain strategy or lean supply chain strategy. This is because organizational performance of Kenya Power is a composite of many other factors that if executed, the performance will still have a value.

The coefficients of both the two independent variables are positive at significance level of 0.05. This means that increase in the implementation of the lean and agile supply chain strategies would lead to increase in organizational performance of Kenya Power. From the coefficient values, it can be deduced that most critical strategy of supply chain that Kenya Power should ensure that is effectively and efficiently implemented is lean supply strategy with a coefficient value of .597 compared to .257, the coefficient of agile supply chain strategy. This could lead to a more significant increase of organizational performance.

Agile supply chain strategy have a positive linear influence on the organizational performance of Kenya power with a beta coefficient of .257, p value=.006 which is less than 0.05. The interpretation is that one unit increase in implementation of agile supply chain strategy will lead to 0.257 unit increase in organizational performance of Kenya Power. On the same line of thinking,

the output of the linear regression analysis shows that lean supply chain strategy also have a positive linear effect on the organizational performance of Kenya Power. The lean supply chain strategy has a beta coefficient of .597 with a significance level of .035 that is less than .05. This implies that one unit increase in implementation of lean supply chain would result into a .597 increase on the organizational performance of Kenya Power. This finding is supported by the findings of Kariuki & Ismael (2017) that also produced a model fit while studying the role of strategic supply chain practices on performance of Kenya Power.

Figure 4.9 Regression Analysis Excluded Variables

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
1	Hybrid supply chain strategy	.b	.	.	.000

a. Dependent Variable: Organizational performance

b. Predictors in the Model: (Constant), Lean Supply chain strategy, Agile supply chain strategy

When carrying out regression analysis process variables via SPSS, the hybrid supply chain strategy variable was excluded. This is because the hybrid supply chain strategy can perfectly be predicted from the lean and agile supply chain strategies. Hybrid supply chain strategy is where the organization implement both the lean supply chain strategy and agile supply chain strategy concurrently. Therefore, its influence on the organizational performance of Kenya Power could be deduced from the implementation of the two.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This is the final chapter of the study and it consists of subsections that include summary of the findings, conclusions, recommendations, limitations of the study and suggestions for further research. The summary of findings and conclusions were based on the research objectives, which were, first, to establish supply chain strategy adopted by Kenya Power and second, to evaluate the effect of supply chain strategy on organizational performance of Kenya Power.

5.2 Summary of Findings

The data analyzed was purely from secondary sources collected via secondary data capture form, which contained indicators for each variable of the study. Research findings showed that during the period of study, lean supply chain strategy was most frequently employed by concerned departments of Kenya Power compared to other two supply chain strategies- Agile supply chain strategy and hybrid supply chain strategy. Presented in frequency distribution table, the application of lean supply chain strategy stood at 45.5% whereas agile supply chain strategy and hybrid supply chain strategy extent of application tied at 27.3%. The results indicate that almost half the period covered by the study, Kenya power preferred the use of lean supply chain strategy. The application percentage for agile supply chain strategy revealed that Kenya Power had low response rate in a more dynamic environment.

The results from correlation analysis indicated that there was significant relationship between lean supply chain strategy and net profit and at 0.633. This can be interpreted that application of lean strategy had significant effect on the financial performance of Kenya Power. Therefore, successful implementation of lean supply chain strategy would results to growth in profit thereby improving financial health of the organization. The output of correlation analysis of agile supply chain strategy against the performance indicators indicated that there existed no significant relationships. The application of agile supply chain strategy did not have significant effect on the performance of Kenya Power. The results further revealed negative relationship between agile supply chain strategy and the net profit (-.559), number of blackouts (-.039) and number of faulty meters (-.039) whereas there is a positive relationship with revenue growth (.375). The insignificant effects may be because of minimal number of times Kenya Power applied the agile supply chain strategy.

In addition, the outcome of correlation analysis showed that there were no significant relationship between hybrid supply chain strategy and the performance indicators covered by the study. The insignificance nature of relationships could be attributed to the minimal number of times both the lean supply chain strategy and agile supply chain strategy were applied concurrently. Nevertheless, results indicated that there were negative relationship between hybrid supply chain and net profit (-.149), revenue growth (-.542), number of blackouts (-.039) and number of faulty members (-.463).

Regression analysis results indicated R square value of .215 which suggest the extent to which lean supply chain strategy and agile supply chain strategy predict the organizational performance of Kenya Power. This implies that lean supply chain strategy and agile supply chain strategy share a variation of 21.5 percent of the organizational performance of Kenya Power. The 21.5 percent variation in performance caused by implementation of the supply chain strategy is small hence; a

number of other factors contributes the organizational performance of Kenya power. The other factors explain the remaining 78.5 percent of the organizational performance within Kenya Power. The regression model for the study was established as $\text{organizational performance} = 4.533 + .257_{AG} + .597_{LS} + \text{Error}$. Where, AG= Agile supply chain strategy, LS = Lean Supply chain Strategy and Error= Error term. This implies one unit increase in implementation of agile supply chain strategy will lead to 0.257 unit increase in organizational performance of Kenya Power and one unit increase in implementation of lean supply chain would result into a .597 increase on the organizational performance of Kenya Power. When carrying out regression analysis process variables via SPSS, the hybrid supply chain strategy variable was excluded. This is because the hybrid supply chain strategy can perfectly be predicted from the lean and agile supply chain strategies.

5.3 Conclusions

The first objective for the study was to establish supply chain strategy adopted by Kenya Power during the period of the study. From the findings, the study concluded that all the three variables, which include lean supply chain strategy, agile supply chain strategy and hybrid supply chain strategy, had been practiced at some point by Kenya Power in its effort to improve both financial performance and operations efficiency. Among the three supply chain strategies, lean supply chain was the most frequently employed by Kenya Power to improve supply chain performance while the other two types of supply chain strategies had equal extent of application by Kenya Power.

The second objective of the study was to evaluate the effect of supply chain strategy on organizational performance of Kenya Power. The study concluded that supply chain strategies investigated do not significantly affect organizational performance of Kenya. They cause only 21.5

percent variation on the organizational performance, with giant remaining part of 78.5 percent caused by other factors not covered by the study. Hybrid supply chain strategy was an excluded variable upon performing regression analysis that produced 21.5 percent implying that its effects on organizational performance can perfectly be predicted from the implementation of lean supply chain strategy and agile supply chain concurrently.

5.4 Recommendations

The study recommends that Kenya Power should aim to efficiently and effectively implement lean supply chain strategy that had significant effect on the net profit that is financial performance. This will ensure that the benefits of lean supply chain strategies accrue to the company at once thus improving the supply chain performance, which in turn enhance both financial and operations performance. Management should ensure that critical success factors are available to ensure successful implementation of lean supply chain strategy in order to reap maximum benefits. The critical success factors include adequate financial resources, management support and commitments, efficient communication system, human resources, necessary information technology infrastructure, and improve coordination among supply chain partners.

5.5 Limitations of the Study

The data used in analysis was only collected from secondary sources with predetermined indicators for both the independent and dependent variables. The Covid-19 pandemic was a major challenge experienced during the study. This was due to a number of Ministry health protocols imposed to curb its spread thereby interfering with the research project flow.. Time limitation was another considered factor. There was limited time to allow for adequate collection of data on other parameters that could have improve the quality of study findings.

5.6 Suggestions for Further Research

Another study should be done to include private institutions to ascertain the role of supply chain strategies on their organizational performance. The data for this particular study should include both secondary data and primary data to improve the quality of research findings. This study focused reduction in number of blackouts and reduction in number of faulty meters as indicators for operations performance, future research should include more indicators such as such response time, transformer installations.

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APPENDIX I: SECONDARY DATA CAPTURE FORM

Confidentiality of the Data collected using the capture form below shall be observed since it is only for academics

S/NO.	TIME PERIOD	TYPE OF SUPPLY CHAIN STRATEGY	PROFIT	REVENUE	NO. OF BLACKOUTS	NO. OF FAULTY METERS
1.	2018 Q1					
2.	2018 Q2					
3.	2018 Q3					
4.	2018 Q4					
5.	2019 Q1					
6.	2019 Q2					
7.	2019 Q3					
8.	2019 Q4					
9.	2020 Q1					
10.	2020 Q2					
11.	2020 Q3					