

**LEAN SUPPLY CHAIN MANAGEMENT PRACTICES AND
BUSINESS PERFORMANCE OF STATE CORPORATIONS
IN THE MINISTRY OF HEALTH**

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DECLARATION

This is my original work and has not been presented for a study in any University or college.

Signature..... Date.....

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SUPERVISOR

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

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DEDICATION

This project is dedicated to my children Stanley and Christine for the support they gave me while I was studying. May God bless them and make them excel in their studies.

ACKNOWLEDGEMENT

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ABSTRACT

The general objective of this study was to assess lean supply chain management practices and their impact on business performance of state corporations in the Ministry of Health. This study adopted a descriptive research design. The target population of this study included all state corporations in the Ministry of Health. There were 6 state corporations in Ministry of Health as of December 31st, 2014 (GOK, 2014). Since the study population was small, a census study was done. This study collected primary data using a self-administered questionnaire. This study used descriptive statistical analysis in terms of mean, frequencies, percentages and standard deviation and inferential statistical analysis in terms of regression and correlation analysis. In analysis the quantitative data, the study used descriptive statistics using SPSS software. The study concluded that relationship is positive and moderate correlation between lean supply chain management practices (overall) and business performance of state corporations in the Ministry of Health as the $R = 0.873$; R^2 of 0.762 indicating that 76.2 % of variation in business performance of state corporations in the Ministry of Health is explained by lean supply chain management practices. Overall, Upholding Problem Search and Problem Solving had the least effect on the business performance of state corporations in the Ministry of Health, followed by Focus on Waste Elimination, Sourcing for Customer Need Information, then Undertaking of a Value Stream Analysis, while Existence of Workplace Organization had the highest effect on business performance of state corporations in the Ministry of Health. Based on the findings, this study recommends emphasis in focusing on importance of customer value and also that those implementing and maintaining lean should make it continuous process since lean is “behaviour-driven”.

CHAPTER ONE: INTRODUCTION

1.1 Background

Supply chain has become an important measure of organizations' performance and metric therefore attracting attention of many researchers and practitioners. Gunasekaran, Patel and Tirtiroglu (2001) and McGaughy (2004) argued that the role of these measures and metrics in the success of an organization cannot be overstated as they affect strategic, tactical and operational planning and control. Furthermore, the revolution of Supply Chain Management (SCM) in the last decade is testimony that an increasing number of companies seek to enhance performance beyond their own boundaries (Proirier, 2009). As per Agarwal and Shankar (2002), an inventory network is a between connected arrangement of connections interfacing client to provider through various transitional stages, for example, assembling, warehousing and dissemination forms.

Harland (1996) has obviously expressed that inventory network regularly alludes either to a procedure situated administration way to deal with sourcing, creating, and conveying merchandise and enterprises to end clients, or in a more extensive importance, to the co-appointment of the different on-screen characters having a place with a similar store network. Extraordinary rivalry constrains organizations to make cozy associations with their upstream and downstream accomplice (Togar and Ramaswami, 2004). In the aggressive environment, most driving edge organizations understood that by exchanging costs either upstream or downstream, they are really not expanding their intensity, since all expenses at last advance toward shoppers (Cigolini, Cozzi and Perona, 2004). Cigolini et al., (2004) have said that inventory network administration guides firms to co-work with a

shared objective to build the general channel deals and gainfulness, as opposed to vying for a greater share of a settled benefit. One technique for planning inside and between firms with an emphasis on accomplishing proficiency, disposing of waste or overburden and making esteem in items is the idea of incline administration (Womack & Jones, 1996).

Vonderembse, Uppal, Huang and Dismukes (2006) highlighted on the procedures and philosophies for planning supply chains that meet particular client desires. As per them, three distinct sorts of supply chains can be characterized: An incline production network, which utilizes consistent change endeavors, which concentrates on disposing of waste or non-esteem ventures along the chain. A coordinated inventory network, which reacts to quickly changing, persistently dividing worldwide markets by being powerful, setting particular, development arranged, and client centered. A half breed inventory network, which consolidates the abilities of incline and nimble supply chains to make a supply system that, addresses the issues of complex items. Incline deduction is centered around wiping out waste from all procedures while upgrading material and data stream along the production network (McCullen & Towill, 2001).

1.1.1 Lean Supply Chain Management Practices

Lean supply chain has been described as a precise way to deal with distinguishing and wiping out waste (non-esteem included exercises) through ceaseless change by taking after the item at the draw of the client in quest for flawlessness (Buzby, Gerstemfeld, Voss and Zeng, 2002). Incline along these lines makes more esteem for clients with less assets through different standards and strategies. Incline standards are executed through a few practices which are exercises embraced to realize enhancements in association (Karlsson & Ahlström, 2007).

According to Lassalle (2005), the best practices in lean supply chain management include: demand management that involves giving products and administrations when asked for by the client, cost and waste decrease, Process institutionalization which empowers consistent stream, industry institutionalization, and social change and cross undertaking coordinated effort. Other distinguished incline practices are: sourcing of client need data, Value Stream Analysis (VSA), end clients center, work environment association, solid and compelling relationship, generation of correct client needs just when required, issue inquiry and critical thinking (Wee & Wu, 2009).

1.1.2 Business Performance

Business performance refers to how well objectives are achieved in a firm or an organization. Richard et al. (2009) described firm performance as an encompassment of three particular territories of firm results budgetary execution; item advertise execution and shareholder return. It likewise alludes to an association's general money related wellbeing at a specific time and can be utilized to think about comparative firms over a similar industry or to analyze enterprises or parts in conglomeration. Execution is a whole discipline in itself but regarding this study, the main aspect is the need to maintain optimum business performance for state corporations in the Ministry of Health with the help of business consultancy.

Since the rise of performance measurement, several models comprising of different frameworks have been introduced. The distinctive systems and reference models for measuring business execution have developed from an assortment of causes. They incorporate; Balanced Scorecard, Economic Value Added, Activity-based costing, Quality Management, Customer Value Analysis and Action-Profit Linkage Model (Haar and Spell,

2008). As per Brush (1992) appraisal of business execution ought to incorporate monetary measures, as well as join different measures, for example, worker fulfillment, social commitments, objective accomplishment, and viability. In this study the following dimensions of business performance were considered; organization growth, employee development and financial performance.

1.1.3 State Corporations in the Ministry of Health in Kenya

State corporations (also known as government Parastatals or public corporations) are quasi government agencies linked to government ministries or departments. The state corporations in Kenya are established by a statute or an Act of parliament in pursuance of government policy or various Acts with reference to State Corporation Act Cap.446. They extend performance of certain services of central government to the nation. These corporations make a surplus in order to sustain themselves while meeting their objectives which are to correct market failure, exploit socio-political objectives, provide education, provide health, redistribute income and develop marginal areas (Directorate of Personnel Management, 2006). Comprehensive reviews on Public Enterprise Performance were carried in 1979 (the Report on the Review of Statutory Boards), and 1982 (the Report of the Working Party on Government Expenditures). According to Taskforce on Parastatals Reform Report (2013), there are 187 state corporations in Kenya. The Kenya government forms state corporations to meet both commercial and social goals.

SCM has been recognized by many companies as a method by which they can increase upper hand and enhance business comes about (Spekman et al., 1998). Powerful SCM hence turns into a vital consider an association's prosperity (Spekman, Kamauff and Myhr, 2008). This is especially the case as more organizations connection their favorable

circumstances together and begin to work as supply systems of associated production network accomplices rather than discrete, standalone, a safe distance elements (Spekman et al., 2008). Connected with such an approach is the reconciliation of intra and between organizations forms so as to upgrade the entire production network. As outlined by organizations, for example, Hewlett-Packard, Wal-Mart and Georgia-Pacific Corp, a successful incline production network system can aggressively outflank the standalone demonstrate (Lummus and Alber, 2007). This predominant execution shows itself as execution focal points on aspects such as supply chain lead time, delivery reliability, ability to respond to customer demand changes, cost and inventory levels (Shin et al., 2000). Effective lean supply chain management therefore becomes a strategic issue for competing organizations and is linked to value growth business results.

State corporations in the health sector need to convey benefits promptly and in spontaneous amounts, this makes inventories of therapeutic supplies hard to arrange. The Kenya Health part experiences shortages in quality and from unsustainable development in expenses. There are real shortcomings in the nature of clinic and walking settings and a requirement for a wellbeing framework that conveys protected, dependable, opportune, and quiet focused care. Enhancing the nature of Kenya's wellbeing framework has turned into a very obvious open and private endeavor, as payers, accreditors, and private associations endeavor to set guidelines and support their accomplishment (Ministry of Health, 2014). These qualities mirror the uniqueness, unusualness, and client inclination of the medicinal services industry and encourage quality improvement practices for effective business performance (Gupta, 2004).

1.2 Statement of the Problem

The innovations and advancement in accomplishing a high level of adaptability and client responsiveness have advanced hugely in the course of the most recent century, beginning from the modern insurgency in the eighteenth century (Aberdeen Group, 2006). In any case, the exorbitant improvements have prompted to the undesirable generation called squander (Womack, Jones and Roos, 2010). Incline application is viewed as one of the sensible arrangements which are being embraced by numerous nations around the globe to address the issues of waste and improve business execution. Incline brilliance is a planned reaction to today's very focused environment (Williams, 2008). Moreover, firms are seeing a change in which incline rehearses has been connected to coordinations and inventory network administration (Abbot, Manrodt & Visatek, 2005).

In Kenya, most of the parastatals operating from diverse sectors are deemed to have these supply chain management practices. Such multi-business parastatal firms are managed centrally through the central authority (Wanjihia, 2011). A lean supply chain management practice of the health sector has myriad challenges of functionality in line with the new approach towards the streamlining of the supplies. As to whether these lean supply chain practices are effectively adopted in the health sector in Kenya lies with the justification of the management of these parastatals (Omondi, 2008).

Several studies have been done in this area both globally and locally. Globally Lia, Ragu-Nathanb, Ragu- Nathan, and Rao (2006) studied the effect of production network administration rehearses on upper hand and authoritative execution. The outcomes demonstrate that larger amounts of SCM practice can prompt to upgraded upper hand and enhanced authoritative execution. Ranganathan and Premkumar (2013) investigated

Improving Supply Chain Performance through Lean and Green and derived that diverse upgrades by the incline by means of its instruments on the inventory network execution by decreasing the squanders and non-esteem included exercises and green as far as mindful business. Karimi and Rafiee (2014) investigated the Impact of Supply Chain Management Practices on Organizational Performance through Competitive Priorities (Case Study: Iran Pumps Company) and built up that applying SCM hones has impact in Iran pumps Company as indicated by focused needs.

Locally, Mwale (2014) studied the effect of supply chain management practices on hierarchical execution among huge assembling firms in Kenya and built up that there is a noteworthy relationship between production network administration rehearses and authoritative execution. Githeu (2014), in his study on production network administration practices and execution of business banks in Kenya observed that that three factors out of the six, in particular Supplier Relationships, Reverse coordinations, and Outsourcing were found to have solid measurably noteworthy associations with execution. Musyoka (2015), concentrated on incline inventory network administration hones in the assembling division in Kenya and set up that the primary purposes behind selection for these practices were to decrease cost, benefit and long haul survival of the firm. At long last, Farah (2015), considered incline store network administration hones and hierarchical execution in people in general water part in Kenya. He set up that request administration was worried with adjusting the necessity of interior and outside clients with inventory network abilities.

As confirm in the above concentrates, none of the studies concentrated on tending to incline store network administration practices and business execution of state partnerships. This concentrate in this way tried to fill this crevice by noting the accompanying inquiries:

What are the lean supply chain management practices adopted by state corporations in the Ministry of Health? What is the relationship between lean supply chain management practices and business performance of state corporations in the Ministry of Health? and What are the challenges facing state corporations in the Ministry of Health when implementing lean supply chain management practices.

1.3 Research Objectives

The general objective of this study was to assess lean supply chain management practices and their impact on business performance of state corporations in the Ministry of Health.

The specific objectives of the study were:

- i. To determine the lean supply chain management practices adopted by state corporations in the Ministry of Health;
- ii. To determine the impact of lean supply chain management practices on business performance of state corporations in the Ministry of Health; and
- iii. To determine the challenges in implementation of lean supply chain management practices of state corporations in the Ministry of Health.

1.4 Value of the Study

This study may add on the body knowledge of lean supply chain management practices by focusing on the development of the practice in a developing country. Further it may add onto knowledge on the impact of lean supply chain management practices of state corporations in the Ministry of Health.

The state corporations in the Ministry of Health may benefit from this study as the documentation of how the practice of lean supply chain management is carried out in the institutions, the critique of the practice and the documentation of the challenges offer an impetus to the institutions to devise better ways of practicing the same. The recommendation given may guide them in strengthening the practice in such organizations.

Firms in other industries may also find this study useful as the results show how the practice of lean supply chain management is carried out in among state corporations in the Ministry of Health and what practices they can borrow from the same.

Finally, the academic community may benefit from the results of the study as it serves as a reference point on empirical data pertaining to lean supply chain management practices and it also identifies areas for further study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter covers contributions from other scholars on lean supply chain management practices and their impact on business performance. The specific areas covered here are Theories of Lean Supply Chain, Lean Supply Chain Management, Lean Supply Chain practices, Business Performance, Lean Supply Chain Management Practices and Business Performance, Empirical Literature review and Conceptual framework

2.2. Theories of Lean Supply Chain

This section provides theories to explain, predict, and understand growth strategies and performance and amplify existing learning inside the points of confinement of basic jumping presumptions. The establishment is the structure that can hold or bolster a hypothesis of an examination contemplate. The hypothetical system presents and portrays the hypothesis that clarifies why the exploration issue under study exists. This section reviews the models available in relation to the topic under study; these are the Transaction Cost Theory and Deming Theory.

2.2.1 The Transaction Cost Theory

Ronald Coase created the transaction approach towards the theory of the firm. Transaction cost alludes to the cost of accommodating some great or administration through the market as opposed to having it given from inside the firm. According to Coase (1937) keeping in mind the end goal to do a market exchange it is important to find it's identity that one wishes to manage, to direct arrangements paving the way to a deal, to draw up the agreement, to embrace the investigation expected to ensure that the terms of the agreement

are being watched, et cetera. Quickly, exchange expenses are; hunt and data costs, dealing and choice costs, policing and implementation costs. Coase (1937) fights that without considering exchange costs it is difficult to legitimately comprehend the working of the monetary framework and have a sound reason for setting up financial arrangement. Coase (1937) watches that market costs administer the connections between firms however inside every firm choice are made on a premise not quite the same as expanding benefit as a subject to market costs. The Transaction Cost Theory was imperative for this study since it accentuated on making cozy associations with upstream and downstream accomplices to lessen exchange cost.

2.2.2 Deming Theory

Deming (1982) theory of fourteen focuses on actualizing quality measures expresses that an association must make steadiness of reason toward change of items and administrations with a mean to wind up aggressive and remain client centered. An association must receive new reasoning in its work put and give administration in change. Association must stop reliance on mass investigation by building quality into an item in any case. Association must stop granting business in light of cost rather take a gander at nature of item, minimize add up to cost and construct association with a solitary provider with devotion and trust. Association should consistently enhance generation and administration utilizing PDCA cycle regularly called Deming cycle. It begins with plan, do, check and follow up on disappointments by moving forward. Associations should constantly do at work trainings for specialists to enhance their insight on the work they do. Associations must establishment authority at work by giving direction, vision and strategizing to accomplish set goals. They should drive out apprehensions inside it's' work compel for them to

accomplish greatest yield from the work constrain. Associations must separate hindrances between offices in order to advance cooperation inside the entire procedure. They should kill mottos and appeals, which relate quality change to one individual instead of the whole work compel. Deming Theory was helpful for this study since it included both LSCM practices and business execution for proficient and successful store network.

2.3 Lean Supply Chain Management

The Lean management approach, developed by Ohno (2008) at Toyota Motor Corporation in Japan, frames the reason for the Toyota Production System (TPS) with two fundamental columns: "autonomation" and 'without a moment to spare' (JIT) creation. The center of the incline approach has basically been on the waste decrease for expanding real esteem included, to satisfy clients needs and looking after benefits. This new auxiliary approach and the way Toyota utilized incline generation to change the way of car assembling, has been exceptional depicted in the book "The Machine that Changed the World" (Womack, Jones and Roos, 2001).

The incline store network is a methodology in light of cost diminishment and adaptability, concentrated on procedures enhancements, through the decrease or end of the all "squanders" (nonvalue including operations). It grasps every one of the procedures through the item life cycle, beginning with the item outline to the item offering, from the client request to the conveyance. Reichhart and Holweg (2007) had amplified the idea of incline generation to the downstream or dispersion level: "we characterize incline appropriation as minimizing waste in the downstream inventory network, while making the right item accessible to the end client at the correct time and area". To Vonderembse et al., (2006) an

incline store network is the one that utilizes ceaseless change endeavors that concentrate on wiping out waste or non-esteem ventures along the chain.

2.4 Lean Supply Chain Practices

Lean supply chain is a concept that aims at a method for wiping out waste (non-esteem included exercises) through ceaseless change to minimize cost of operation while guaranteeing satisfactory level of client administration. Incline standards are executed through a few practices which are exercises attempted to achieve upgrades in association (Karlsson and Ahlström, 2007). The recognized incline practices are: sourcing of client need data, esteem stream investigation (VSA), end clients center, squander end, work environment association, solid and powerful relationship, creation of correct client needs just when required, issue inquiry and critical thinking (Wee and Wu, 2009).

In connection to source data on client needs, incline has solid accentuation on the significance of concentrating on the clients' needs by tending to esteem including assignments and non-esteem including errands (Shah and Ward, 2007). Client needs fluctuate in light of a few elements, the requirements traverse through a few commercial center traits like quality, value, conveyance, and item assortment. Also is esteem stream investigation, a procedure of understanding what happens along the items' esteem chain. VSA helps in the recognizable proof of chances to enhance the esteem chain for better execution, benefit and connections. VSA clears the ground for waste disposal.

Thirdly is the waste diminishment/disposal whereby the real center in incline is distinguishing proof and end of waste from the entire esteem chain (Cudney and Elrod, 2011). The early stride in the execution of incline is through distinguishing proof of waste

which incorporates misuse of overproduction, misuse of holding up, transportation squander, squander from keeping inventories among others (Zarei, Fakhrzad, and Jamali Paghaleh, 2011). Fourthly is the working environment or framework association, which includes appropriate game plan of machines, devices and different offices in the work environment with a specific end goal to guarantee simple and speedy get to, control of less space and maintain a strategic distance from impediments to work process or material stream (Julien and Tjahjono, 2009).

Fifth is accentuation on a solid and compelling relationship among the players in the esteem creation exercises is one of the major recognizing variables of incline approach (New and Ramsay, 2007). This sort of relationship requires that players are included, in long haul contract, and sharing a data framework that connections them together (New and Ramsay, 2007). 6th is incline practice is creation of correct client require just when required (Shah and Ward, 2007). This thought is in all out difference to the conventional method for creating however much as could reasonably be expected, notwithstanding when clients don't make request. At last is the issue pursuit and understanding that includes consistent hunt down issues and proffering answers for the issues are practices in incline, without limits and time restrict.

2.5 Business Performance

Organizational performance is an important result that the shareholders and management will use to evaluate the organization's exercises and business forms. A decent execution would give the financial specialists and the shareholders trust in administration and in this manner secures a gainful and managed organization future. Firms that are receptive to changes in the business environment are seen to have the capacity to increase upper hand.

Notwithstanding, most organizations utilize monetary markers to quantify hierarchical execution without the slightest hesitation despite the fact that the business environment is changing at a high rate. Gold et al. (2001) propose that current bookkeeping frameworks are not suitable for measuring information resources. Improvement of adjusted scorecard by Kaplan and Norton's (1992) as an execution estimation apparatus give directors adequate data to address the inquiries: How would we look to our shareholders (budgetary point of view)? What must we exceed expectations at (inside business point of view)? How do our clients see us (client point of view)? what's more, How would we be able to proceed to enhance and make esteem (development and learning point of view)?

In dealing with organization's execution it is essential to consider which parts of the organization's exercises and techniques affect business execution and how they can be overseen satisfactorily. Writing on the build of execution uncovers that there is no accord among the scientists on the fitting measures of business execution markers (Vij and Bedi, 2012). Thus, a wide differing qualities of execution measures, i.e. objective and subjective measures, and also money related and non-budgetary measures are utilized crosswise over studies, which prompts to high assorted qualities in execution measurements being utilized. It has been generally acknowledged by scientists that target measures of execution are more fitting than subjective measures of execution. Target information, be that as it may, is extremely hard to get. Then again, proprietors and administrators are by and large slanted to give subjective assessment of their company's execution, which needs solid unwavering quality (Wiklund and Shepherd, 2005). On the other hand, execution can be seen to be multidimensional in nature and along these lines it is profitable to coordinate different

subjective and target measures for precise estimation of execution (Yusaf, 2002); Combs, Crook, and Shook, 2005; Wiklund and Shepherd, 2005).

Incline execution is add up to inside incline advancement prepare; in this manner request administration is key to assume their part to acknowledge the idea of incline execution inside their procedures subsets. The qualities of incline approach are leanness are more prompt and handy concentrate on waste, stream and adaptability (Industry Week, 2010), in this manner, inventory network accomplices including the upstream providers and downstream clients can cooperate as a group to give esteem to the end client (APICS, 2004; Manrodt et al., 2005). Some inner issues like "balance" of Bill of Materials (BOMs') blasts; can be handle successfully by better comprehend the "genuine" request they are anticipating (APICS, 2004; Manrodt et al., 2005) in making utilized the methodologies of incline exhibitions like diminishing lead times, enhancing quality, disposing of waste, lessening the aggregate costs, connecting with and empowering individuals (Industry Week, 2010).

In the points of view of waste administration, incline exhibitions are imperative to produce adaptability keeping in mind the end goal to control association squander; the center is to diminish squander; not costs, (APICS, 2004; Manrodt et al 2005). Anything that postponements or blocks production network's stream must be examined as a potential non-esteem included action (Craig, 2004). A portion of the incline exhibitions activities can be taken, for example, Engaging and stimulating individuals (Industry Week, 2010) and store network accomplices need to cooperate and independently to dispense with inefficient procedures and overabundance stock over the chain. This end of waste ought to have a huge by-item: a lessening in cost for the inventory network.

2.6 Lean Supply Chain Management Practices and Business Performance

Several researchers, such as Lee et al., (1997) and Lummus et al., (2003), clarified that the data exchanged starting with one phase then onto the next in inventory network has a tendency to be twisted and can misinform upstream individuals in the generation choices, bringing about squanders, along these lines influencing the coordination between the distinctive phases of a production network. Lean supply chain consistent change procedures to concentrate on the disposal of waste or non-esteemed included capacities. These waste and non-esteem included stops over the inventory network and lessen set of times to take into consideration the financial creation of little amounts. Gordon (2008) turned out with his focuses that emphatically bolster on incline inventory network best practices and execution. As needs be, there is an exploration by Accenture, INSEAD and Stanford University indicate connection between organizations with an effective store network system and critical money related achievement. The connection concentrates on four lean production network points of view: How associations keep merchandise and ventures streaming in a smooth, continuous and cost-effectives mold from providers to client firms end to end. Stock viewpoints; How would we keep negligible, however adequate stock in the inventory network pipeline to give great administration levels without interferences. Incline acquirement; in what capacity can obtainment scale and enhance its procedures to minimize exchanges, diminish add up to cost and work with the most ideal providers who meet its necessities, Adopting incline inside client and provider firms; in what capacity can business work to kill squander while increasing the value of its clients.

Lean performance is an add-up to inward incline advancement handle; accordingly request administration is indispensable to assume their part to acknowledge the idea of incline

execution inside their procedures subsets. The qualities of incline approach are leanness are more prompt and reasonable concentrate on waste, stream and adaptability (Industry Week, 2010), subsequently, production network accomplices including the upstream providers and downstream clients can cooperate as a group to give esteem to the end client (APICS, 2004; Manrodt et al., 2005). Some interior issues like "balance" of Bill of Materials (BOMs') blasts; can be handle viably by better comprehend the "genuine" request they are anticipating (APICS, 2004; Manrodt et al., 2005) in making utilized the methodologies of incline exhibitions like Reducing lead times, enhancing quality, disposing of waste, diminishing the aggregate costs, connecting with and empowering individuals (Industry Week, 2010).

2.7 Empirical Literature Review

Lia, Ragu-Nathanb, Ragu- Nathan, and Rao (2006) studied the effect of supply chain administration hones on upper hand and authoritative execution. The outcomes demonstrate that more elevated amounts of SCM practice can prompt to upgraded upper hand and enhanced hierarchical execution. Likewise, upper hand can have an immediate, positive effect on hierarchical execution. The study had blended results as to upper hand and hierarchical execution. Choon Ho (2011) contemplated the Influence of Supply Chain Management (SCM) Practices on Organizational Performance: Knowledge Management Processes As Mediator. The study comes about demonstrated that SCM practices of data sharing, nature of data sharing and incline practices were emphatically identified with authoritative monetary and non-money related execution. This study was not specific to lean supply chain management practices.

Ranganathan and Premkumar (2013) looked into Improving Supply Chain Performance through Lean and Green – A study at Volvo Group India and Sweden. According to the study, it could be evidently inferred that multifarious improvements by the lean via its tools on the supply chain performance by reducing the wastes and non-esteem included exercises and green as far as capable business i.e., diminishing the outflows and other natural effects which eventually expands the corporate picture of the organizations. The study was constrained to Volvo Group India and Sweden. Karimi and Rafiee (2014) examined the Impact of Supply Chain Management Practices on Organizational Performance through Competitive Priorities (Case Study: Iran Pumps Company). Look into finding show that applying production network administration hones has impact in Iran pumps Company as indicated by aggressive needs.

Mwirigi (2007) investigated Green supply chain management practices by manufacturing firm in Kenya. The study found out that awareness of the role of GSCM practices was lacking among locally owned manufacturing firms in Kenya. This study focused only on green supply in the supply chain management practices. The study additionally focused on manufacturing firms only. Gwako (2008) examined Supply chain performance measurement in Kenya Airways. The study determined that a growing application of the concept of supply chain and its management in the company. The study was however limited in scope as it covered only one company hence there is need to widen the scope and find out SCM practices in public sector in Kenya.

Otilo (2011) studied the supply chain management practices in cosmetics industry in Kenya. According to the study, there is consistent performance measures used across the supply chain in the cosmetic industry and suppliers are involved in production planning.

This study focused on the cosmetics industry and did not touch on lean supply exclusively. Kamaru (2012) studied Lean Supply Chain Practices in Urban Road Construction Projects: A Case of Class 'A' Road Construction Companies in Nairobi County, Kenya. The discoveries show that Class "A" street development organizations in Nairobi have received different incline inventory network administration hones. These practices include: accentuating on appropriate client center; creating roads for waste lessening in their exercises; honing ceaseless change in their procedures and receiving Just in Time system of stock administration. This study did not specifically focus on lean supply chain practices in addition to focusing on a different sector. Kimani (2013) looked into Lean Supply Chain Management in Manufacturing Firms in Kenya. The study findings indicate that the most prevalent practices adopted are preventative maintenance and reduction in the preliminary finishing time. The study shows that the main reasons for adoption for these practices was to reduce cost profitability and long term survival of the firm. This study was not specific to lean supply chain management practices.

Mwale (2014) studied the effect of supply chain management practices on organizational performance among large manufacturing firms in Kenya. The study established that there is a significant relationship between supply chain management practices and organizational performance. This study did not specifically focus on lean supply chain practices in addition to focusing on a different sector. Githeu (2014), in his study on supply chain management practices and performance of commercial banks in Kenya found that that three variables out of the six, namely Supplier Relationships, Reverse logistics, and Outsourcing were found to have strong statistically significant relationships with performance. This study was not specific to lean supply chain management practices.

Musyoka (2015), studied lean supply chain management practices in the manufacturing sector in Kenya. He found that the main reasons for adoption for these practices were to reduce cost, profitability and long term survival of the firm. Although it focused on lean supply practices it did not focus on the health sector but rather on the manufacturing sector. Finally, Farah (2015), studied lean supply chain management practices and organizational performance in the public water sector in Kenya. He established that that demand management was concerned with balancing the requirement of internal and external customers with supply chain capabilities. This study was not specific to lean supply chain management practices and organization performance on health sector.

2.7 Conceptual Framework

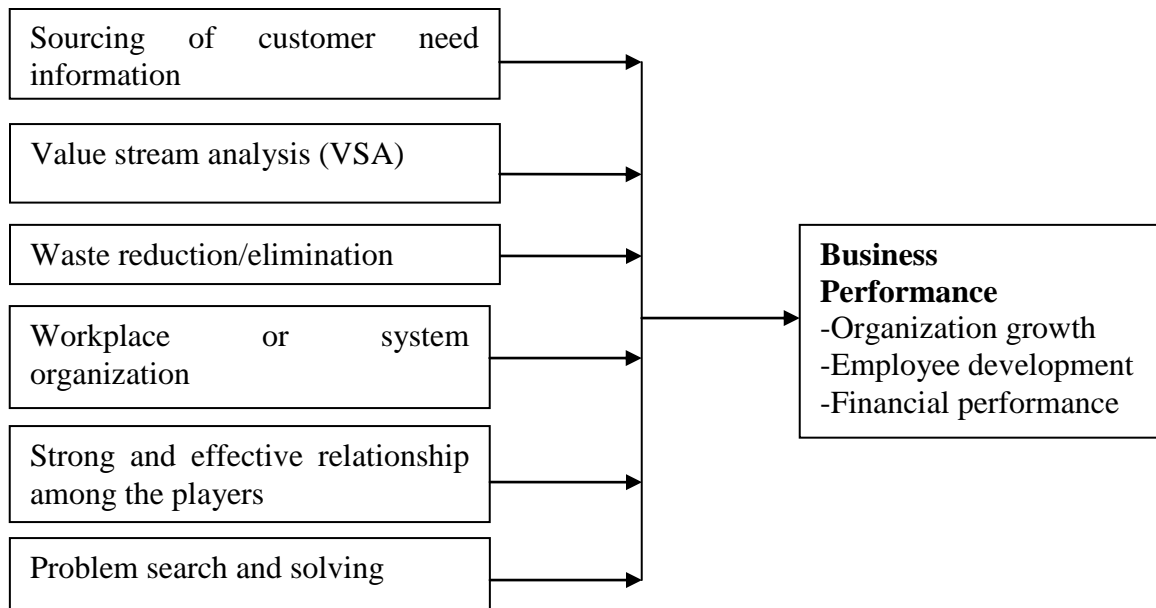
Conceptual framework is a presentation on how the free and ward factors are connected. It along these lines, determines the working meaning of a variable and empowers a basic clarification of the stream of hypothetical structure utilized by the study (Mugenda and Mugenda, 2003). In this study, the free factors were Lean Supply Chain Management Practices while the dependent variable was business execution among state organizations in the Ministry of Health. The framework supposed that the presence or absence of the indicated independent variables determined the ability of state corporations in the Ministry of Health to perform well.

Figure 2.1: Conceptual Framework showing interrelationship between variables and business performance among state corporations in the Ministry of Health.

INDEPENDENT VARIABLES

DEPENDENT VARIABLES

Lean Supply Chain Management Practices



(Author, 2016)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out different phases and stages, which was followed in finishing the study. Particularly it covers inquire about outline, populace, information accumulation and information examination.

3.2 Research Design

This research embraced a descriptive research plan. As per Cooper and Schindler (2003), an elucidating study is worried with discovering the what, where and how of a marvel. Descriptive research outline was picked for this study because it enabled this study to build a profile about the lean supply chain management practices and their impact on business performance among state corporations.

3.3 Population

The target population of this study included all state corporations in the Ministry of Health. There were 6 state corporations in Ministry of Health as of December 31st, 2014 (GOK, 2014). Since the study population was small, a census study was done.

3.5 Data Collection

This study collected primary data using a self-administered questionnaire. This study sampled 5 respondents who were directly involved in lean supply chain management in every parastatal making a total of 30 respondents. The questionnaire included open and closed ended questions for simplicity of organization. To upgrade nature of information, Likert sort inquiries was given whereby respondents were required to demonstrate the

degree to which the announcements speaking to factors apply to their associations. The questionnaire consisted of four parts. Part A collected biographic data, part B the lean supply chain management practices adopted by state corporations in the Ministry of Health, part C Business Performance and Supply Chain Management Practices and part D covered Challenges facing lean supply chain management practices

3.6 Data Analysis

This study used descriptive statistical analysis in terms of mean, frequencies, percentages and standard deviation and inferential statistical analysis in terms of regression and correlation analysis. In analysis the quantitative data, the study used descriptive statistics using SPSS software. Data was presented by use of tables which according to Magutu et al., (2010) should help achieve clarity, preciseness, ease of understanding and interpretation.

Qualitative data was analyzed through deductions which as stated by Saunders, Lewis and Thornhill (2007) is meant to test the conceptual framework and will be presented by use of a descriptive narrative.

The multiple regression model was used to determine the significance of each study's independent variable on performance of state corporations in the Ministry of Health. The results of the regression analysis were interpreted based on the R square, significance of F statistics and the significance of beta values from the coefficients of the X variables.

Table 3.1 Summary of Data Analysis

Objective	Section of questionnaire	Data Analysis technique
To establish the extent of lean supply chain management practices adopted by state corporations in the Ministry of Health	SECTION B	Descriptive Analysis
To establish the relationship between lean supply chain management practices and business performance of state corporations in the Ministry of Health and part	SECTION C	Inferential statistical
To establish challenges facing lean supply chain management practices	SECTION D	Descriptive Analysis

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATIONS

4.1 Introduction

The chapter focuses on the observational discoveries and aftereffects of the utilization of the factors utilizing procedures said as a part of section three. In particular, the information examination was in accordance with particular targets where examples were explored, deciphered and suggestions drawn on them.

The sample size of this study was 30 respondents. Those filled and returned questionnaires were 28 respondents making a response rate of 93%. According to Mugenda & Mugenda (1999), a reaction rate of half the participants is satisfactory for investigation and reporting; a rate of 60% is great and a reaction rate of 70% and over is phenomenal. This implies the reaction rate for this study was superb and accordingly enough for information examination and understanding. The findings revealed that majority 15 of the respondents were female and the remaining 13 of them were male. The findings therefore reveal that even though there was gender disparity female respondents were more than male respondents.

From the findings, most (42%) of the respondents in this study were aged between 36-43 years of age. They were followed by those aged between 29-35 years of age at 26%, the respondents in the age bracket between 44-51 years were 19%, the respondents in the age bracket between 20-28 years were the 10% while the respondents in the age bracket of above 51 years were the least at 3%. Out of those who responded the findings depict that the respondents were spread across different age brackets. In addition, majority of the respondents (57%) had attained masters as their highest level of education, followed by the respondents with bachelor level of education at 33%, respondents with certificate/diploma

level of education at 7%, while those with PHD level as their highest education level attained were the minority at 3%. This implies that, respondents were well educated and that they were in a position to respond to research questions with ease.

The findings further revealed that majority of the respondents in this study had served their organization for a period not more than 10 years which still is long enough to enable them comment on the aspects under study.

4.2 Lean Supply Chain Management Practices Adopted by State Corporations in the Ministry of Health

4.2.1 Sourcing for Customer Need Information

The respondents were requested to state whether or not the parastatal source for customer need information. Based on the findings illustrated below, 91% of the respondents agreed to this and the remaining 9% disagreed to this.

The study further sought to find out from employees of the state corporations in Ministry of Health the extent to which they agreed with statements on sourcing of customer need information. Rate them according to the extent to which they are practiced in your organization where; 1=very low extent, 2=low extent, 3=Moderate, 4= high extent, 5= very high extent.

Table 4.1: Respondents Opinion on Sourcing of Customer Need Information

Customer Need Information Indicators	Mean	Std Dev.
Examination of the piece of the overall industry, patterns, and projections (in both the business and government markets)	3.65	0.195
Identification of cost drivers throughout the extended value stream	3.76	0.120
Commodity Profile analysis detailing spending patterns and trends for the commodity, usage patterns and high level business needs	3.78	0.516
Identification of practices used by commercial firms to lower acquisition costs and to reduce total cost of ownership	3.80	0.158
Identifying savings potential, strategic alignment, implementation feasibility, and other criteria used to assess the commodity	3.85	0.260
Assessing the alignment between customer needs and market capabilities	3.86	0.288
Analyzing how well current purchasing practice meets cost and performance criteria for users	3.91	0.199
Cost savings estimates and implementation plans	3.97	0.318
Defining a strategy and rationale that can be used to lower costs	4.06	0.795

Source: Data (2016)

From the findings, majority of the respondents agreed that their organization sources for customer need information by defining a strategy and rationale that can be used to lower costs. Overall mean for Sourcing of Customer Need Information was ($M = 3.849$). Likewise, in relation to source data on client needs, incline has solid accentuation on the significance of concentrating on the clients' needs by tending to esteem including errands and non-esteem including undertakings (Shah & Ward, 2007).

4.2.2 Undertaking of a Value Stream Analysis (VSA)

The respondents were asked whether the parastatal undertake a value stream analysis (VSA) to which they all agreed in the affirmative.

The respondents were then requested to indicate the extent to which they agreed with the statements on Value stream analysis (VSA) on a scale of; 1=very low extent, 2=low extent, 3=Moderate, 4= high extent, 5= very high extent.

Table 4.2: Respondents Opinion on Undertaking of a Value Stream Analysis (VSA)

Value Stream Analysis Indicators	Mean	Std Dev.
Pack size – the number of items in a shipment	3.607	.882
Working time (minus breaks)	3.717	.882
The percentage of time in which a machine or process is available on demand	3.784	.151
Number of operators	3.819	.672
The time required to switch from producing one product type to another type	3.848	.850
Scrap rate	3.855	.877
Number of product variations	3.887	.715
Trains their value stream mapping (VSM) team that includes all stakeholders of the process or area to be mapped with first-hand knowledge of the process or area as well as those who must support them.	3.929	.957
how often a part is completed by a process	3.945	.709
Document each step observed or discovered as part of the walk-down	3.945	.709
Physically walk the path of the material flow, beginning from each source of primary and secondary materials required to support the operation as well as the actual manufacturing or production process that is being mapped.	3.974	0.117
Identify the communication points and how communication occurs	3.998	.850

Source: Data (2016)

The findings portray that majority agreed that their organization undertakes a value stream analysis by identifying the communication points and how communication occurs. Overall mean for undertaking of a Value Stream Analysis (VSA) was (M =3.859). Cudney & Erol (2011) also declare that VSA helps in the distinguishing proof of chances to enhance the esteem chain for better execution, benefit and connections. VSA clears the ground for waste end.

4.2.3 Focus on Waste Elimination

The study investigated whether the employees of the state corporations in Ministry of Health focuses on waste elimination and found out that, majority (88%) of the respondents stated that their organization focuses on waste elimination while the remaining 12% disagreed to this.

The respondents were then requested to indicate the extent to which they agreed with the statements on focus on waste elimination as they apply to their organization on a scale of; 1=very low extent, 2=low extent, 3=Moderate, 4= high extent, 5= very high extent.

Table 4.3: Respondents Opinion on Focus on Waste Elimination

Waste Elimination Indicators	Mean	Std Dev.
There exists a strong work breakdown structure identifies which team members hold responsibilities for various deliverables and milestones	3.61	0.951
The officers in charge review any kind of data, from the number of project hours clocked by a team to the amount of time required for specific tasks	3.67	0.193
The management emphasizes a culture of trust and respect	3.75	0.240
The organization leaderships makes team members understand that new forms of measurement are focused on getting better results instead of placing blame for past problems	3.88	0.341
The organization leaderships emphasize the opportunity to improve “hand-offs” while assuming that team members can hold themselves accountable to improving their solo performance	3.93	0.993
We focus on eliminating bottlenecks within teams, to build strong routines for future projects or for future iterations of the same development process	4.16	0.121

Source: Data (2016)

The findings reveal that majority agreed that their organization focuses on waste elimination by dispensing with bottlenecks inside groups, to fabricate solid schedules for future tasks or for future cycles of a similar improvement prepare. Overall mean for Focus

on waste elimination was ($M = 3.833$). This is in agreement with Zarei, Fakhrzad, & Jamali Paghaleh, (2011) who observe that the early stride in the execution of incline is through ID of waste, which incorporates misuse of overproduction, misuse of holding up, transportation waste and waste from keeping inventories among others.

4.2.4 Existence of Workplace Organization

The respondents were asked to indicate if there exists workplace organization in their parastatals. Accordingly, all the respondents agreed that workplace organization exists in their organization.

The study examined the extent to which the respondents agree with the statements on workplace organization. Rate them according to the extent to which they are practiced in your organization where; 1=very low extent, 2=low extent, 3=Moderate, 4= high extent, 5= very high extent.

Table 4.4: Respondents Opinion on Existence of Workplace Organization

Existence of Workplace Organization Indicators	Mean	Std Dev.
The organization involves, informs, develops, and rewards employees.	3.742	.999
Employees are empowered to decide, act, and innovate in a coordinated way	3.774	.669
The organization leadership treats employees as they want them to treat the company	3.790	.973
The leadership in the organization holds itself and others leaders accountable for fostering a great workplace	3.913	.882
There are Shared Values and Trust, Not Absolute Rules and Micromanagement in my organization	4.129	.619
The organization has a healthy work environment that acts on the belief that employee health, workforce productivity, and HR costs all hinge on providing a health atmosphere for employee	4.161	.779

Source: Data (2016)

The findings illustrate that majority agreed that there exists workplace organization since their organization has a solid workplace that follows up on the conviction that worker wellbeing, workforce profitability, and HR costs all rely on giving a wellbeing environment to representative. Overall mean for workplace organization was ($M = 3.918$). This matches the findings by Julien & Tjahjono, (2009) that workplace or system organization, which includes legitimate game plan of machines, devices and different offices in the working environment to guarantee simple and fast get to, control of less space, and maintain a strategic distance from checks to work process or material stream.

4.2.5 Upholding Problem Search and Problem Solving

The respondents were asked whether their organization upholds problem search and problem solving. Based on the discoveries, the larger part (79%) of the respondents concurred that their association maintains issue inquiry and critical thinking while the staying 21% differ to this.

The respondents were further requested that show the degree to which they concur with the statement on problem search and problem solving as they apply to their organization. The findings are as shown in table 4.5. The findings illustrate that means for questions as to whether the respondents organization problem search and problem solving by choosing a solution and implementing; looking at the problem from multiple perspectives; seeking out help in its problem solving steps by polling trusted colleagues or friends.

Table 4.5: Upholding Problem Search and Problem Solving

Upholding Problem Search and Problem Solving	Mean	Std Dev.
The organization evaluates how it was and was not successful	3.733	.882
The organization weighs the short- and long-term pros and cons of each solution	3.748	.434
The organization evaluates how feasible each solution is	3.761	.934
The organization brainstorms and comes up with as many solutions as it possibly can for the problem	3.787	.145
The organization learns as much as it can about a problem	3.804	.855
The organization evaluates all of the different ways in which the problem could impact it	3.817	.882
The organization sometimes seeks out help in its problem solving steps by polling trusted colleagues or friends	3.883	.076
The organization finds solutions for parts of the problem (as opposed to the problem as a whole)	3.903	.790
The process of generating solutions helps in looking at the problem from multiple perspectives	3.920	.730
The organization chooses a solution and implements it.	3.944	.855

Source: Data (2016)

4.3 Business Performance and Supply Chain Management Practices

The study examined the extent to which the respondents agree with statements on strong and effective relationship between Business Performance and Supply Chain Management Practices. Table 4.6 presents the findings.

The study went on to enquire from the respondents whether their organization ensures strong and effective business performance in the supply chain. Based on the findings, majority (81%) of the respondents agreed that their organization ensures strong and effective business performance in the supply chain while only 29% were of the contrary opinion.

Table 4.6: Business Performance and Supply Chain Management Practices

Business Performance and Supply Chain Management Practices	Mean	Std Dev.
Committed relationships are the most sustainable advantage because of their inherent barriers to competition.	3.658	.999
An effective supplier partnership is a critical component of a leading edge supply chain entire array of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction	3.690	.973
Strategically aligned organizations can work closely together and eliminate wasteful time and effort	3.712	.721
Strategic partnerships with suppliers enable the organization to work more effectively with a few important suppliers who are willing to share responsibility for the success of the products	3.713	.715
Good relationships with supply chain members, including customers, are needed for successful implementation of lean program	3.761	.999
Suppliers participating early in the product-design process offer more cost effective design choices, help select the best components and technologies, and help in design assessment	3.887	.882
The strategic partnerships promote shared benefits among the parties and ongoing participation	3.945	.709
There exists a strategic partnership emphasizing direct, long-term association and encourages mutual planning and problem solving efforts	4.113	.516

Source: Data (2016)

From the findings, majority agreed that there is a strong and effective association between business performance and lean supply chain management processes in their organization. This was illustrated by existence of a vital organization underscoring immediate, long haul affiliation and energizes shared arranging and critical thinking endeavors. This is difference to the discoveries by Industry Week (2010) that the qualities of incline approach are leanness are more prompt and reasonable concentrate on waste, stream and adaptability, along these lines, store network accomplices including the upstream providers and downstream clients can cooperate as a group to give esteem to the end client.

4.4 Challenges facing lean supply chain management practices

The study further established that the most widely recognized test in lean implementation is looking after it. The respondents expressed that incline is a ceaseless procedure. Despite the fact that the state partnerships in Ministry of Health executed lean supply years back, they are as yet using it and consistently making progress toward change. Maintaining lean is testing and requires a considerable measure of work that organizations are not set up to focus on. Making the move is profoundly testing and numerous falls by the wayside.

Another basic test in implementing lean is expecting that it must be utilized as a part of assembling. The idea of Lean Enterprise which involves the utilization of lean management all through all offices in an organization. This incorporates (however is not restricted to) Procurement, circulation, bookkeeping, human asset, and promoting. In the event that lean is implemented in only one division, the prompt results might be sure however, with time, since the office is influenced or influences different offices, the outcomes would start to wind down.

However another test that the association has in executing lean is the way that "lean frameworks are characteristically information serious." The association has had the upside of having numerous years of learning and creating information in lean standards and ideas. The information of lean is caught in frameworks and procedures as well as is al-so caught in the specialists; they think 'incline'. A long time of incline deduction empowered the association attempts to know how to react (and when) to changes underway.

Different respondents demonstrated that lean implementation is a radical procedure as it changes the method for working, (for example, wiping out the standard method for

amassing stock) and senior administration might be against such uncommon change. This shows a test in completely executing incline.

Additionally, as indicated by Bicheno and Holweg (2009) a study directed in the year 2007 on the main one thousand Canadian assembling organizations demonstrated that backtracking to the old methods for getting things done and the absence of execution learning were the best deterrents to Lean. It is a typical misconception that lean implementation starts from the base of an organization and works itself up. Since incline, regardless of which part of an association it is actualized in, will soon work its way into and change work association, it is critical to have the senior administration bolster from the principal occasion that incline administration is executed. The senior administration group can make prizes and motivations to urge representatives to keep on contributing to the organization's incline endeavors, or even better they could lead by effectively taking part.

Understanding the full ramifications of incline and ensuring that each one of those included in the incline procedure recognize what is required of them is key to maintaining a strategic distance from difficulties of lean implementation and administration.

Numerous associations tend to run different change programs after some time, some of the time in parallel. In the event that specialists are not made to under-stand that these projects prompt to similar objectives (esteem upgrade, lead time decrease, diminishment in deformities or changeability, and at last, cost lessening) and that they fit inside the officially existing incline framework, the change projects would prompt to disarray, lack of interest, or just sitting them out. The specialists would ask why there is an alternate program being run when the past one was a win, or why they ought to invest any exertion if

there will be another new change program execute in a couple of months' energy. They have to comprehend that each new program is not to be seen as a substitution of the present one yet as including to it.

Two of the most well-known missteps that organizations make in actualizing incline are executing it for the decrease of stock and work (eventually diminishing expenses). The explanations behind an organization having stock is of-ten for a decent reason; it might be to cradle against inner and outer instabilities or other such awkward nature in the organization. Radically decreasing stock without tending to fundamental issues first prompts to an ejection of numerous issues and in the end an organization would do a reversal to the old method for having stock. The Lean method for diminishing stock is to do as such systematically by first distinguishing and understanding (or disposing of) one issue at once. With time, the stock levels will lessen. Diminishment of stock levels ought not be an objective for an organization. Or maybe, it ought to be a method for distinguishing wellsprings of waste.

Like the lessening of stock is the decrease of the workforce. The workforce directly affects profitability and diminishing any work that may have been spared by the incline framework would prompt to the work-constrain seeing lean as negative. They would inevitably be unwilling to proceed with the change cycle feeling that it could in the end prompt to the loss of their employments. Rather, as an incline framework does in the end prompt to an expansion in efficiency (and henceforth a requirement for more workforce), an organization could meanwhile utilize the "extra" work drive as a kaizen group.

Table 4.7: Model Summary for Lean Supply Chain Management Practices and on Business Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.873	.762	.697	.962

Source: Data (2016)

From the findings above $R = 0.873$ and $R^2 = 0.762$.

The R – values shows the association between lean supply chain management practices and business performance. The relationship is positive and moderate correlation between lean supply chain management practices (overall) and business performance of state corporations in the Ministry of Health $R = 0.873$; R^2 of 0.762 indicates that 76.2 % of variation in business performance of state corporations in the Ministry of Health is explained by lean supply chain management practices.

Table 4.8: Summary of One-Way ANOVA Results Of The Regression Analysis Between Business Performance And Predictor Variables

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.113	6	3.518833	1.495496	0.02582455
	Residual	51.765	22	2.352955		
	Total	72.878	28			

a. Predictors: Sourcing for Customer Need Information, Undertaking of a Value Stream Analysis (VSA), Focus on Waste Elimination, Existence of Workplace Organization and Upholding Problem Search and Problem Solving

b. Dependent Variable: Business Performance

Source: Data (2016)

The analysis of variance (ANOVA) results shows the relationship between lean supply chain management practices and business performance of state corporations in the Ministry of Health is significant $F = 1.4954$, $p = 0.0258$, indicating this relationship is significant and not by chance. The finding simply that the relationship between lean supply chain management practices and business performance of state corporations in the Ministry of Health is causal and not due to chance. This means that an increase in lean supply chain management practices will lead to an increase in business performance of state corporations in the Ministry of Health while a decrease in lean supply chain management practices will lead to a decrease in business performance of state corporations in the Ministry of Health.

Table 4.9: Regression coefficients of the relationship between business performance and the five predictive variables

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	1.43	0.411		3.479	0.002
	Sourcing for Customer Need Information	0.651	0.133	0.146	4.894	0.006
	Undertaking of a Value Stream Analysis (VSA)	0.768	0.256	0.126	3.425	0.006
	Focus on Waste Elimination	0.613	0.282	0.045	2.173	0.004
	Existence of Workplace Organization	0.812	0.269	0.142	3.0185	0.006
	Upholding Problem Search and Problem Solving	0.571	0.337	0.142	1.694	0.001
a. Dependent Variable: business performance						

Source: Data (2016)

The following regression equation was used: $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \epsilon$):

Whereby Y = Business Performance

X_1 = sourcing of customer need information

X_2 = Value stream analysis (VSA)

X_3 = Waste elimination

X_4 = Strong and effective relationship

X_5 = problem search and problem solving and β_0 β_1 β_2 β_3 and β_4 are the

regression equation coefficients for each of the variables discussed.

The equation thus becomes;

$$Y = 1.43 + 0.651X_1 + 0.768X_2 + 0.613X_3 + 0.812X_4 + 0.571X_5 + \epsilon$$

The regression equation set up that considering all elements (sourcing for client require data, undertaking of an esteem stream examination (VSA), concentrate on waste end, presence of work environment association and maintaining issue hunt and critical thinking) consistent at zero business execution of state enterprises in the Ministry of Health will be 1.430. The discoveries exhibited additionally demonstrate that taking all other autonomous factors at zero, a unit increment in sourcing for client require data would prompt to a 0.651 increment in business execution of state organizations in the Ministry of Health. A unit increment in Undertaking of a Value Stream Analysis (VSA) would prompt to a 0.768 increment in the business execution of state partnerships in the Ministry of Health. Advance, the discoveries demonstrates that unit increments in the Focus on Waste Elimination would prompt to a 0.613 increment in the business execution of state partnerships in the Ministry of Health. Likewise, the discoveries demonstrate that a unit

increment in Existence of Workplace Organization would prompt to a 0.812 increment in the business execution of state partnerships in the Ministry of Health. At last, a unit increment in Upholding Problem Search and Problem Solving would prompt to a 0.571 increment in the business execution of state corporations in the Ministry of Health. Overall, Upholding Problem Search and Problem Solving had the least effect on the business performance of state corporations in the Ministry of Health, followed by Focus on Waste Elimination, Sourcing for Customer Need Information, then Undertaking of a Value Stream Analysis (VSA) while Existence of Workplace Organization had the highest effect on business performance of state corporations in the Ministry of Health.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents an outline of the discoveries, conclusions, proposals, constraints, and recommendation for further research of the study. The study had three objectives; to determine the lean supply chain management practices adopted by state corporations in the Ministry of Health. To determine the impact of lean supply chain management practices on business performance of state corporations in the Ministry of Health. To determine the challenges in implementation of lean supply chain management practices of state corporations in the Ministry of Health.

5.2 Summary of Findings

The study found out that the parastatals in the Ministry of Health had adopted; Sourcing for Customer Need Information, Undertaking of a Value Stream Analysis (VSA), Focus on Waste Elimination, Existence of Workplace Organization and Upholding Problem Search and Problem Solving.

From the discoveries, greater part of the respondents concurred that their association hotspots for client require data by characterizing a methodology and basis that can be utilized to lower costs. The findings further portray that majority agreed that their organization undertakes a value stream analysis by identifying the communication points and how communication occurs. In addition, majority agreed that their organization focuses on waste elimination by wiping out bottlenecks inside groups, to manufacture solid schedules for future undertakings or for future cycles of a similar improvement handle. The

discoveries likewise represent that dominant part concurred that there exists work environment association since their association has a solid workplace that follows up on the conviction that worker wellbeing, workforce profitability, and HR costs all rely on giving a wellbeing climate to representative. This matches the discoveries by Julien and Tjahjono, (2009) that work environment or framework association, which includes legitimate course of action of machines, devices and different offices in the work environment keeping in mind the end goal to guarantee simple and brisk get to, control of less space and dodge blocks to work process or material stream. From the discoveries, larger part concurred that there is a solid and compelling relationship between business execution and incline production network administration rehearses in their association. This was delineated by presence of a key organization underlining immediate, long haul affiliation and empowers shared arranging and critical thinking endeavors.

The study further established that the most widely recognized test in incline usage is looking after it. The respondents expressed that incline is a persistent procedure. Despite the fact that parastatal in the Ministry of Health executed lean supply years back, they are as yet using it and consistently making progress toward change. Maintaining lean is testing and requires a great deal of work that organizations are not set up to focus on. Making the move is very testing and numerous falls by the wayside.

Another regular test in actualizing incline is expecting that it must be utilized as a part of assembling firm. The Lean Enterprise idea involves the utilization of incline administration all through all divisions in an organization. In the event that incline is executed in only one office, the quick results might be sure yet with time, since the office is influenced or influences different divisions, the outcomes would start to disappear.

Assist challenge that the association has in executing incline is the way that "incline frameworks are intrinsically information escalated." The association needs to have preferred standpoint of having numerous years of learning and creating information in lean principles and ideas. The information of incline is caught in frameworks and procedures as well as caught in the specialists.

The workforce directly affects profitability and lessening any work that may have been spared by the lean system would prompt to the work-compel seeing incline as negative. They would in the long run be unwilling to proceed with the change cycle feeling that it could in the long run prompt to the loss of their employments. Rather, as an incline framework does inevitably prompt to an expansion in profitability (and henceforth a requirement for more workforce), an organization could meanwhile utilize the "extra" work constrain as a kaizen group.

5.3 Conclusions

The study concluded that relationship is positive and moderate correlation between lean supply chain management practices (overall) and business performance of state corporations in the Ministry of Health as the $R = 0.873$; R^2 of 0.762 indicating that 76.2 % of variation in business performance of state corporations in the Ministry of Health is explained by lean supply chain management practices.

The relationship between incline production network administration practices and business execution of state enterprises in the Ministry of Health is causal and not because of possibility. This implies an expansion in incline production network administration practices will prompt to an expansion in business execution of state corporations in the

Ministry of Health while a decrease in lean supply chain management practices will lead to a decrease in business performance of state corporations in the Ministry of Health.

Overall, Upholding Problem Search and Problem Solving had the least effect on the business performance of state corporations in the Ministry of Health, followed by Focus on Waste Elimination, Sourcing for Customer Need Information, then Undertaking of a Value Stream Analysis (VSA) while Existence of Workplace Organization had the highest effect on business performance of state corporations in the Ministry of Health.

Finally, this study concluded that state corporations in the Ministry of Health sources for customer need information mainly by characterizing a procedure and method of reasoning that can be utilized to lower costs. State partnerships in the Ministry of Health embrace an esteem stream examination mostly by distinguishing the correspondence focuses and how correspondence happens. State corporations in the Ministry of Health focus on waste elimination especially by disposing of bottlenecks inside groups, to assemble solid schedules for future ventures or for future cycles of a similar improvement prepare. There exists workplace organization since the State corporations in the Ministry of Health have a healthy work environment that acts on the belief that employee health, workforce productivity, and human resource costs all hinge on providing a health atmosphere for employee. State corporations in the Ministry of Health uphold organization problem search and problem solving especially through organization choosing a solution and implement it. Lastly, there is a strong and effective relationship between business performance and lean supply chain management practices in state corporations in the Ministry of Health well illustrated by existence of a strategic partnership emphasizing direct, long-term association and encourage mutual planning and problem solving efforts.

5.4 Recommendations

It has been made clear that all through the procedure of incline execution, significance on concentrating on client esteem ought to be stressed. It is likewise similarly imperative taking note of that incline is "conduct driven"; those executing and keeping up it must realize that it is ceaseless and ought to be driven at making it so. Incline instruments ought to be executed each one in turn (completely) in order to keep away from disarray and lessening concentrate on the venture. It even actualizes one anticipate on a little scale first as a type of visual administration with the goal that specialists can see (by contrasting the old method for working with the new way) the advantages of the change.

Once actualized, vital strides, for example, kaizen occasions are required so as to ensure that the device is legitimately kept up and don't stay stagnant. Reviews could likewise be arranged once every month to check singular procedures (or divisions) against an institutionalized shape keeping in mind the end goal to guarantee that the procedures are appropriately managed. The Lean apparatuses forms them-selves ought to likewise be institutionalized. Institutionalized procedures guarantee that the procedure is completed successfully, reliably, and takes into consideration a procedure to be streamlined.

5.5 Limitations

The study focused on Six (6) state corporations in Ministry of Health as of December 31st, 2014. Three (3) out of Six (6) state corporations are decentralized and considering the diversity of the country, the findings may not be representative of the whole population of state corporations in the Ministry of Health with decentralized operations. However, the

sampling technique used ensured that each respondent had a non-zero chance of being selected.

5.6 Suggestion for Further Research

The present study did not allow for the exploration of employees perspectives of lean supply chain management practices activities considered to be crucial in the development of effective lean supply chain management practices. Neither did it allow various organizations that support state corporations in the Ministry of Health perspectives of lean supply chain management practices. Given the importance of the views of employees and various organizations that support state corporations in the Ministry of Health, further research should be carried by involving them with a view of establishing any variances.

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APPENDIX I: RESEARCH LETTER



UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MBA PROGRAMME

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE... 28/06/2016

TO WHOM IT MAY CONCERN

The bearer of this letter ... SUSAN ANYANGO ONYANGO

Registration No. D61/72771/2014

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.




PATRICK NYABUTO
SENIOR ADMINISTRATIVE ASSISTANT
SCHOOL OF BUSINESS

APPENDIX II: STATE CORPORATIONS IN THE MINISTRY OF HEALTH

1. Kenyatta National Hospital
2. Kenya Medical Training College
3. National Hospital Insurance fund
4. Moi Teaching and Referral Hospital, Eldoret
5. Kenya Medical Research institute
6. Kenya Medical Supplies Authority

Source: www.health.go.ke

APPENDIX 1I1: QUESTIONNAIRE

SECTION A

(Please complete this section by checking the correct answer)

1. What is your gender? ☐ Male ☐ Female

2. What is your age Bracket?

20-28 ☐ 28-35 ☐ 36-43 ☐ 4-51 ☐ Above 51 ☐

3. What is your level of education?

Certificate/ Diploma level ☐

Bachelor level ☐

Master's Level ☐

PhD level ☐

4. What department are you based in the organization?.....

5. How long have you worked with this organization?

Less than five year ()

Less than ten years ()

Less than fifteen years ()

Less than twenty years ()

More than twenty years ()

Section B: Lean supply chain management practices adopted by state corporations in the Ministry of Health

6. Does the parastatal source for customer need information?

Yes [] No []

7. To what extent do you agree with the following statement on sourcing of customer need information. Rate them according to the extent to which they are practiced in your organization where; 1=very low extent, 2=low extent, 3=Moderate, 4= high extent, 5= very high extent.

Statements	1	2	3	4	5
Examination of the piece of the overall industry, patterns, and projections (in both the business and government markets)					
Identification of cost drivers throughout the extended value stream					
Commodity Profile analysis detailing spending patterns and trends for the commodity, usage patterns and high level business needs					
Identification of practices used by commercial firms to lower acquisition costs and to reduce total cost of ownership					
Identifying savings potential, strategic alignment, implementation feasibility, and other criteria used to assess the commodity					
Assessing the alignment between customer needs and market capabilities					
Analyzing how well current purchasing practice meets cost and performance criteria for users					
Cost savings estimates and implementation plans					
Defining a strategy and rationale that can be used to lower costs					

8. Does the parastatal undertake a value stream analysis (VSA)?

Yes [] No []

9. To what extent do you agree with the following statement on Value stream analysis (VSA). Rate them according to the extent to which they are practiced in your organization where; 1=very low extent, 2=low extent, 3=Moderate, 4= high extent, 5= very high extent.

Statements	1	2	3	4	5
The organization follows up on ;					
how often a part is completed by a process					
The time required to switch from producing one product type to another type					
The percentage of time in which a machine or process is available on demand					
Number of operators					
Number of product variations					
Pack size – the number of items in a shipment					
Working time (minus breaks)					
Scrap rate					
Trains their value stream mapping (VSM) team that includes all stakeholders of the process or area to be mapped with first-hand knowledge of the process or area as well as those who must support them.					
Physically walk the path of the material flow, beginning from each source					

of primary and secondary materials required to support the operation as well as the actual manufacturing or production process that is being mapped.					
Document each step observed or discovered as part of the walk-down					
Identify the communication points and how communication occurs					

10. Do the parastatals focus on waste elimination?

Yes [] No []

11. To what extent do you agree with the following statement on waste elimination.

Rate them according to the extent to which they are practiced in your organization where; 1=very low extent, 2=low extent, 3=Moderate, 4= high extent, 5= very high extent.

Statements	1	2	3	4	5
There exists a strong work breakdown structure identifies which team members hold responsibilities for various deliverables and milestones					
The officers in charge review any kind of data, from the number of project hours clocked by a team to the amount of time required for specific tasks					
The management emphasizes a culture of trust and respect					
The organization leaderships makes team members understand that new forms of measurement are focused on getting better results instead of placing blame for past problems					

The organization leaderships emphasize the opportunity to improve “hand-offs” while assuming that team members can hold themselves accountable to improving their solo performance					
We focus on eliminating bottlenecks within teams, to build strong routines for future projects or for future iterations of the same development process					

12. Does workplace organization exist in the parastatals?

Yes [] No []

13. To what extent do you agree with the following statement on workplace organization. Rate them according to the extent to which they are practiced in your organization where; 1=very low extent, 2=low extent, 3=Moderate, 4= high extent, 5= very high extent.

Statements	1	2	3	4	5
The organization has a healthy work environment that acts on the belief that employee health, workforce productivity, and HR costs all hinge on providing a health atmosphere for employee					
There are Shared Values and Trust, Not Absolute Rules and Micromanagement in my organization					
Employees are empowered to decide, act, and innovate in a coordinated way					
The organization involves, informs, develops, and rewards employees.					

The leadership in the organization holds itself and others leaders accountable for fostering a great workplace					
The organization leadership treats employees as they want them to treat the company					

Section C: Business Performance and Supply Chain Management Practices

14. Do the parastatals ensure strong and effective business performance in the supply chain?

Yes [] No []

15. To what extent do you agree with the following statement on strong and effective relationship between Business Performance and Supply Chain Management Practices? Rate them according to the extent to which they are practiced in your organization where; 1=very low extent, 2=low extent, 3=Moderate, 4= high extent, 5= very high extent.

Statements	1	2	3	4	5
There exists a strategic partnership emphasizing direct, long-term association and encourages mutual planning and problem solving efforts					
The strategic partnerships promote shared benefits among the parties and ongoing participation					
Strategic partnerships with suppliers enable the organization to work more effectively with a few important suppliers who are willing to share					

responsibility for the success of the products					
Suppliers participating early in the product-design process offer more cost effective design choices, help select the best components and technologies, and help in design assessment Strategically aligned organizations can work closely together and eliminate wasteful time and effort					
An effective supplier partnership is a critical component of a leading edge supply chain entire array of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction					
committed relationships are the most sustainable advantage because of their inherent barriers to competition.					
Good relationships with supply chain members, including customers, are needed for successful implementation of lean program					

16. Do the parastatals uphold problem search and problem solving?

Yes [] No []

17. To what extent do you agree with the following statement on problem search and problem solving. Rate them according to the extent to which they are practiced in your organization where; 1=very low extent, 2=low extent, 3=Moderate, 4= high extent, 5= very high extent.

Statements	1	2	3	4	5
The organization learns as much as it can about a problem					

The organization evaluates all of the different ways in which the problem could impact it					
The organization brainstorms and comes up with as many solutions as it possibly can for the problem					
The process of generating solutions helps in looking at the problem from multiple perspectives					
The organization finds solutions for parts of the problem (as opposed to the problem as a whole)					
The organization sometimes seeks out help in its problem solving steps by polling trusted colleagues or friends					
The organization weighs the short- and long-term pros and cons of each solution					
The organization evaluates how feasible each solution is					
The organization chooses a solution and implements it.					
The organization evaluates how it was and was not successful					

Section D: Challenges facing lean supply chain management practices

18. Has it been difficult to maintain lean?

.....

.....

.....

a) If yes, in what ways? Please elaborate

.....

.....

.....

19. Please explain as thoroughly as possible the challenges that your company (has)
faced during the process of implementing lean management techniques and tools

.....

.....

.....

20. Has the company tried to solve these challenges?

.....

.....

.....

b) If yes, in what ways has the company tried to solve these challenges?

.....

.....

THE END. THANK YOU FOR YOUR COOPERATION!!!