

**SUPPLY CHAIN MANAGEMENT AND SERVICE DELIVERY IN  
DEVOLVED GOVERNMENTS IN KENYA: THE CASE OF MAKUENI  
COUNTY**

**BY:**

**DANIEL MUTHWII SUNZA**

**SUPERVISOR**

**DR. X. N. IRAKI**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF  
THE REQUIREMENTS FOR THE AWARD OF MASTER OF BUSINESS  
ADMINISTRATION, SCHOOL OF BUSINESS,**

**UNIVERSITY OF NAIROBI**

**DECEMBER, 2018**

## DECLARATION

I declare that this research project is my original work and has never been submitted for award of a degree in any other University.

Signed..... Date.....

**Daniel Muthwii Sunza**

**Reg No.: D61/75274/2009**

This project has been submitted for examination with my authority as the university supervisor.

Signed..... Date .....

**Dr. X. N. Iraki**

**Lecturer,**

**School of Business**

## **DEDICATION**

I dedicate this project to my wife for the continuous encouragement and our child for the sacrifices they had to make during the course of my study.

## **ACKNOWLEDGEMENT**

I wish to acknowledge the support of my Supervisor Dr. X. N. Iraki for accepting to supervise my project and for the encouragement. I sincerely thank God almighty for his strength and grace to do this work. Appreciation is extended to my beloved family, friends and employer for financial, emotional and moral support throughout this work.

## **ABBREVIATIONS AND ACRONYMS**

ADP	Annual Development Plans
ANOVA	Analysis of Variance
CIDP	County Integrated Development Plan
PPADA	Public Procurement and Asset Disposal Act
SC	Supply chain
SCM	Supply chain management
SPSS	Statistical Package for the Social Sciences
TA	Transitional Authority
TDGA	Transition to Devolved Government Act

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## ABSTRACT

Supply chain management (SCM) influences the time and quality of procured goods and services in an organization which has a bearing on the way that the organization interacts with its customers. Supply chain is an important element of organizational efficiency. It affects the way tasks are conducted towards the attainment of organizational objectives. A number of studies have been conducted on supply chain challenges and service delivery in organizations. The purpose of the study was to analyze supply chain management and service delivery in devolved units in Kenya using a case of Makueni County. This study was informed by two theories: The transaction costs theory and the Supply Chain Management/Systems Theory. This study adopted a descriptive research design. The study was concentrated on all the developed units in Makueni County (agriculture, transport, infrastructure, trade development and regulation, pre-primary education, health care and planning and development) as the target population. This study collected data using structured questionnaires, the primary data was collected through self-administered questionnaires. The study found out that information technology, value added process and management support had a positive influence on speed of service delivery. Information technology and value-added process had a positive influence on cost of service delivery. Information technology, value added process and management support had a positive influence on flexibility of service delivery. The study concludes that information technology had been partially implemented by the county government and had led to effective production and deliverance of services. Embracement of ICT had led to reduced time in serving clients enhancing better service delivery. The study established that county government had their own office spaces and vehicles. This led to cost saving in leasing the space and vehicles hence using the extra cost in investing on ICT. The study further concludes that the management held an average of 3 meetings per quarter year to establish the best course of action. The study recommends that the County Government of Makueni appreciates the way different aspects of supply chain influence delivery of services to citizens. The county government management ought to increase their budget on ICT implementation for better services delivery and for increased efficiency. The policy makers especially in the Ministry of devolution ought to influence the government in formulation and implementation of supply chain management in the county. Policy makers in the county government of Makueni ought to ensure that the staffs employed to work in their respective departments are competent enough to produce effective results. Policy makers ought to ensure that all of the offices have embraced the use of IT.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Supply chain management (SCM) influences the time and quality of procured goods and services in an organization which has a bearing on the way that the organization interacts with its customers (Badman, Futran, Johnson, Krumme, & Srai 2015). Organizations have continued to adopt SCM with the aim of reducing inventory handling related costs, improving the quality of services delivered, and reducing the production cycles of products. Supply chain management is basically focused on meeting and surpassing the dynamic needs of customers. It has been observed as one of the most effective ways for organizations to improve on their performance (Andebe, 2011). It is important that procuring organizations lay appropriate plans that would manage material planning, balance on capacity utilization and match it with logistics.

Ambe and Badenhorst-Weiss (2012) outlined four key catalysts that must be fully utilized in order for Supply Chain to be successful. The four included: infrastructure, developments in technology, level of networking through formation of strategic alliances and competency levels of human resource. Factors beyond the control of an organization like natural disasters, in form of extreme weather conditions have also been found to negatively impact on supply chain. Despite of them having lower chances of occurrence, environmental disasters can have far reaching consequences on supply chain in terms of facility downtime and interference of the production cycle. Volatility of price is yet another challenge that causes uncertainty in supply

chain management as prices fluctuation interferes with clear forecasting and budget estimates.

Supply chain provides an avenue through which services from private service providers get produced to support social economic development of a nation (Baghalian, Rezapour & Farahani 2013). Governments are charged with the responsibility of availing appropriate infrastructure network that facilitates timely movement of goods and services from areas of production to the market. The manner in which supply chain is managed has a significant effect on ability of all organizations to meet their financial obligations as and when they fall due. This therefore means that existence of effective supply chain has a direct effect on performance of all types of organizations (Bichou, Bell & Evans, 2013). Appropriate measures of supply chain outcomes need to be identified with clear measurement processes to ensure that organizations remain profitable and sustainable. This can only be achieved in circumstances where SC performance measurement process avail reliable and accurate indications of how supply chain operations boost other key organizational functions like minimization of costs, utilization of fixed assets and overall organizational growth. This study investigates whether this applies to Makueni and other counties.

### **1.1.1 Supply Chain Management**

Supply chain refers to a group of companies or organizations that are interconnected with one another with the aim of adding value to a stream of transformed materials used in the production process from the place where they are acquired or purchased to the end products or services required by customers (Fantacy, Magnan & McCarter, 2010). Supply chain management refers to business management context of the

supply chain which manages the flow of inputs from their area of origin to the area of production so that the goods and services are made available to consumers at the right time and price. It is the business of managing the flow of inputs from the source of origin to the area of utilization to create value for the customers (Chow, Madu, Kuei, Lu, Lin, and Tseng, 2008). The way in which this supply chain process is managed influences the quality of goods and services delivered to end customers.

Supply chain management involves the entire process of planning, management of procedures and activities in the sourcing and procurement functions, conversion, and the logistics to ensure that the inputs are moved from their area of origin to the area of utilization in the most convenient and efficient manner (Wagner, Beimborn & Weitzel, 2014). It includes coordination activities among different stakeholders in the supply chain to ensure that quality goods and services are available to customers. It basically coordinates the demand and supply sides to strike a balance. It involves management of key business processes among different organizations in the supply chain to ensure that material inputs are sourced at a fair cost and arrive on time at their destination. It involves integration of systems across firms with the aim of reducing supply chain costs, improving quality, and hastening operations. The core processes that make up SC management have been identified as to include: maintaining good relationship with customers, management of service delivery processes, management of demand, delivering on orders, among others (Croson & Drnevich 2013).

There needs to be thorough planning, adequate internal controls, and efficient logistics, with the aim of improving county government performance. Supply chain management (SCM) functions make up an important different way that organizations

perceive themselves. It has brought about creation of value by integrating and coordinating the supply function to matching the demand (Wisner, Tan and Leong, 2016). This management of demand and supply enables an organization meet the dynamic needs of its customers in a more effective and profitable manner. Supply chain management in public sector is governed by rules and regulations developed by Public procurement Oversight Authority unlike private organizations which have leeway of procuring the way they desire. The provisions of PPOA regulate the entire process of procurement from development of Terms of reference, tendering, contract award and payments.

### **1.1.2 Service Delivery**

Service Delivery refers to the quality of service offered by the county government. It describes a set of actions performed by a service provider to satisfy the needs of customers in terms of expectations (Woodruff, 1997). Delivery high quality services is important in driving organizational reputation of consistently achieving pre-determined goals and targets. The feelings that customers go through as they receive services from an organization are important in shaping their perceptions on the goods and services availed by the company to the market. These experiences influence their opinions and decisions on whether to be loyal or not in consuming goods and services produced (Sawy and Bowles, 1997). Service delivery in the public service has changed since the inception of devolved units in 2013.

Every county government is entrusted with providing quality services to its residents which aim to improve general quality of life. This may range from provision of services as espoused in the service charter to provision of basic services like healthcare, education and water. The services offered include housing, healthcare

facilities, primary education, emergency response, public utilities (waste collection, water and sanitation) among other services (Armstrong and Greene, 2007).

Service delivery has been elusive in the county governments as many county governments are reported to have flouted public procurement provisions. Counties are faced with modern challenges in supply chain management especially in the areas of; Enterprise Risk Management, fraud, cyber Security among others. Accounting officers are faced with a daily challenge of the numerous risks they are exposed to in the process of procurement and payment for services rendered.

The IFMIS system, once touted as revolutionally in service delivery is now a cash cow riddled with corruption cartels. Major frauds have been unearthed in the counties leading to loss of public funds. This has denied citizens the much-needed services. Public expectations in the counties are high and skyrocketing with the advent of devolution with citizens demanding quick-fix solutions. This has encouraged procurement professionals and management to circumnavigate the procurement process and try to meet timelines in service delivery. The defunct local authorities were much quicker in delivering services as decision making was by a clique of powerful individuals. Mwananchi does not understand the long process in decision making in the new dispensation. Speed, cost and flexibility in service delivery are all that matters to citizens. This paradigm shift and dilemma has motivated the topic on supply chain management and service delivery in devolved units in Kenya: a case of Makueni County.

### **1.1.3 Devolved Units in Kenya**

The decentralization of governance into forty-seven county governments in Kenya saw the transfer of authority from a centralized governance structure to decentralized units to promote grass root participation in governance (Ong'olo and Awino, 2013). In such arrangements, central Governments normally cede some powers to created sub units distributed across the country. Khaunya, Wawire and Chepng'eno (2015) indicate that there exists some set of policies and guidelines on the transfer of administration together with the manner in which each of the unit is to function in terms of mandate to avoid overlap and duplication of responsibilities. Devolution worldwide is characterized by high degree of autonomy and downward accountability levels. The devolved units may not be directly accountable to the central government but instead, they work within prescribed statues and guidelines (Oloo, 2016). As per the provisions of the Kenyan Constitution promulgated in 2010, institutionalized devolved system of governance came into effect in 2013.

To date different number of steps has been formulated, passage of key devolution legislative reforms is one of the examples and this is followed by general elections that established a new structure of governance in March 2013. The County governments were given full prerogatives to manage and develop affairs that affect them while fostering, social, economic and political development. According to Daib (2014), County exercises their powers on pre-primary education, planning and development trade development and also control agriculture and transport on their county. Counties are represented by governors, senators, women representatives and county assembly ward representatives at the national level. The Transitional Authority (TA) established by schedule six of the constitution facilitated and coordinated the



transition to a devolved government system. The TA was a statutory body established by Transition to Devolved Government Act (TDGA) in 2012 under section 4 of the constitution of Kenya. Its mandate was to facilitate and coordinate the transition of government in Kenya as provided under section 15 of the sixth schedule. Pursuant to section 7(1), the defunct TA was given a mandate to coordinate and facilitate smooth change and shift to devolved systems and units. County governments have been mandated to take over local government institutional structures, which are the office premises, staff, assets and liabilities that functioned under local government (Omari, Kaburi & Sewe, 2013). In order to oversee the development of their territories, County governments have to develop their budgets and procure the materials and services providers. However, they need to comply with the laid down provisions of procurement.

#### **1.1.4 Makueni County**

Makueni County is what was previously known as Makueni District found in former Eastern Province of Kenya. Its headquarters are situated in its largest town called Wote. The county has a population of 884,527 provided in the 2009 census report and an area of 8,008.9 km<sup>2</sup>. The county has six constituencies which include Mbooni Constituency, Kilome Constituency, Kaiti Constituency, Makueni Constituency, Kibwezi West Constituency, and Kibwezi East Constituency as shown in the Figure 1.1.



The county governance has been structured in ten distinct ministries to enable efficient service delivery to citizens: water, irrigation and environmental services, among others. Public expectations are high in Makueni County. The county has made public participation as enshrined in the constitution a key pillar in achieving its development goals. Indeed, the county has engaged its citizenry at every level in its development of the County vision 2025, County Integrated Development Plan (CIDP) 2018-2022, annual development plans (ADP) and the budgets. A draft bill on public participation has since been presented to the county assembly. As a result, the county has won accolades in many quarters for participatory budgeting. This level of enlightenment has come with its challenges with mwananchi demanding for better services within specific timelines.

The procurement process as dictated by the Public Procurement and Asset Disposal Act (PPADA) 2015 is a tedious process. Adherence to the law as dictated by the act prolongs the supply chain to the chagrin of the public. This is because lengthy supply chain procedures have a direct effect on cost and delivery time. This coupled with the demand for better services has made service delivery and supply chain management major issues in Makueni County. Unlike private organizations which target specific market segments to deliver services, county governments and central governments offer services to the entire population without distinction or social stratification.

## **1.2 Research Problem**

Supply chain is an important element of organizational efficiency. It affects the way tasks are conducted towards the attainment of organizational objectives. In Kenya, the process of supply chain and entire procurement is governed by the Public Procurement and Disposal Act (2015). All government agencies and other

autonomous units of Government are required to adhere to the laid down procurement rules and regulations. Adherence to the law prolongs the supply chain hence directly affecting service delivery in terms of cost and delivery time.

A number of studies have been conducted on supply chain challenges and service delivery in organizations. For instance, Sillanpää & Sillanpää (2014) examined supply chain strategy by focusing on organizations operating within Asia and Europe. Study findings indicated that different supply chain concepts were condensed into supply chain framework which a practical tool used by managers worldwide. Consequently, Mhlongo (2014) conducted a study on how SCM was affected by the level of transparency among local government institutions in South Africa. The study established several issues relating to irregularities in SCM were somehow high in unique expenditures suggesting that there was increased abuse of contracts by deviating from the budgets. Other challenges related to accounting officers failing to provide sufficient reasons for extraordinarily high irregular expenditures, failing to comply with provides laws and regulations among officers. These studies were conducted outside the country, with a different contextual framework. Therefore, the findings might not be applicable in the current study.

Moenga (2011) examined the various SCM practices and how they were implemented among small sector tea firm in Kenya. The findings indicated that the small-scale tea firms had not incorporated good and efficient SCM. In another study, Mbuge (2011) examined how SC operational challenges affected performance of credit card services among commercial banks in Kenya. They findings showed that SC was not effectively managed to realize the set advantages.

Since 2013 when the Government of Kenya implemented the devolved governance, several cases have arisen across the forty-seven counties regarding procurement which have negatively affected the supply chain and their ability to provide services to their residents. Despite their existence in the last seven years, few studies have focused on service delivery in devolved units. This study therefore sought to establish how supply chain management had affected service delivery in devolved units in Kenya.

### **1.3 Specific Objectives of the study**

To analyze supply chain management and service delivery in devolved units in Kenya using the case of Makueni County.

#### **1.3.1 Objectives of the study**

- i. To establish the effect of information technology on service delivery in Makueni County.
- ii. To establish the effect of value-added processes on service delivery in Makueni County.
- iii. To establish the effect of management support on service delivery in Makueni County.

### **1.4 Significant of the Study**

This study would be important to the County Governments in Kenya especially the County Government of Makueni in bringing out the way different aspects of supply chain influence delivery of services to citizens. This would facilitate necessary actions that would be aimed to improve the quality of service delivery from the County so as to improve the general lifestyle of Makueni County residents.

Future academicians and scholars would leverage on the findings of the study to grow the available literature and information. By pointing out gaps and areas for further studies, future scholars would be able to increase the available literature.

The findings of this study would also be important to the Government of Kenya policy makers especially in the Ministry of devolution, Government procurement on formulation and implementation of supply chain management in Government. It is hoped that through the findings of this study, policy makers would understand the strengths and shortcoming of the existing supply chain management and hence come up with ways of strengthening them.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter reviews information from other early researchers who have studied similar research in the same field. It covered a conceptual framework in accordance to the study variables. The variables are; information technology, value added processes, management support and service delivery in devolved units.

#### **2.2 Theoretical Perspective**

This study was informed by two theories: The transaction costs theory and the Supply Chain Management/Systems Theory. These theories were explained in detail below:

##### **2.2.1 Transaction Costs Theory**

Transaction Costs Theory was formulated by Coase's (1937) and focuses on an organization's boundaries, decisions relating to integration with stakeholders, networks creation and other governance structures for optimal organization performance. This theory sought to explain the reasons behind the arrangements on economic transactions within an organizational setting. It seeks to explain reasons as to why some transactions are confined within the internal boundaries of an organization while others are procured to external stakeholders (Madhok, 2002).

This theory believes that there are costs associated with executing a transaction in the market which can be reduced by applying alternative channels of procurement (Williamson, 1975). These costs could relate to the process of drafting, negotiating, and completing an exchange. This theory assumes that these transaction costs incurred in organizing a transaction form part of the production costs which have a bearing on

the final prices charged (Jones, 1998). These costs are not easily assessed because they are ex-ante (Williamson, 1985). They mainly relate to expenditures in searching, engagements in negotiations and drafting of contracts. This theory was relevant in explaining the costs associated with supply chain management because it involves management of suppliers' network for optimal supply of goods and services utilized in the production process in an organization.

### **2.2.2 Systems Theory**

Supply Chain Management/Systems Theory is an extension of the general systems theory developed by Ludwig in 1930 which assumes that there is nothing that can be explained in isolation of its holistic properties (Luhmann, 1995). Through development of a system model, this theory explains the important role played by the immediate environment of a process in what happens in the said process. For instance, there has to be constant feedback from the social environment to ensure that the production processes proceed as expected (Parsons, 1951). This school of thought believes that all things happen in an environment which means that their happening influences the environment. In a similar manner, the happenings in the immediate environment also influences them.

This theory explains the interactions between institutions and its different stakeholders. The supply chain management processes comprise of a number of stakeholders whose interests have to be given taken care of for continued working together (Bertalanffy, 1968). It helped in explaining the need for county governments to establish and create a network with suppliers so that they can minimize costs in the supply chain.



## **2.3 Supply Chain Management**

Supply chain management is the ability to plan, design, execute, control and monitor all activities within the supply chain aimed to create value, competitiveness so as to influence the distribution, integrating supply with demand and mapping performance on a worldwide scale. Supply Chain Management is essentially about achieving low cost along with high quality levels as well as responsiveness throughout the chain. Supply Chain Management involves organization and integration of the distribution of goods and services along the supply chain. For supply chain management to have a positive impact, organizations must team up on issues like demand forecasts, production plans, changes in production capacity, new market strategies, ultra-modern product and service developments, modern technologies adopted, procurement plans, delivery and other aspects that have an effect on the firm's procurement, production and logistical layouts (Wisner, Tan and Leong ,2010).

Public project supply chain management in Kenya is characterized by a poorly structured contractual process of competitive bidding that does little to protecting public against squandering of public funds and prevention of abuses such as fraud, favourism and extravagance. If the projects requirements are not delivered on time, projects success is highly unlikely. A United Nations Educational, Scientific and Cultural Organization (UNESCO) 2005 report on challenges to effective implementation of free primary education introduced in 2003 by the National Rainbow Coalition (NARC) government highlighted procedural challenges as one of the major hindrances to its implementation. The procedural challenges involve lengthy supply chain procedures that have a direct effect on cost and delivery time.

Another scenario that highlighted the lengthy supply chain procedural challenges is the famous Independent Electoral and Boundaries Commission (IEBC) tender on supply and delivery of Biometric voter registration (BVR) kits. Treasury having delayed in disbursing funds put the voter registration exercise into jeopardy. The tendering process takes an average of five months to complete before contract signing can be done. The voter registration exercise had been earmarked to end in December so that voter civic education could begin in January before the March election. Treasury was disbursing the funds in August, this in itself prevented open tender competitive bidding. IEBC had no option but to go for direct procurement. It should be noted that had the process been competitive through an international open tender then the Election budget could have dramatically gone down.

Kenya has set up new devolved governments at the county level, it being a requirement of the new constitution. These devolved governments would manage the service delivery on behalf of the central government and if projects are not handled by the right people with the relevant expertise and skills this project would either not be completed on time or a lot of wastes are going to be incurred. Projects do not last forever, they are for a specific period of time, work is one off, and the risk involved is high. The devolved units that have been established would handle projects that would commit huge tax payer's money and if no proper training, procedures, management and checks were incorporated then resources put into this project were likely to go down to waste.

## **2.4 Empirical Literature**

Information technology is the use of telecommunication and computers for storing, retrieval, transmission and manipulation of data in an organizational context.

Organizations today are under pressure to ensure that the produced products meet the needs and wants of customers. According to Croson and Drnevich (2013), by use of technology, an organization can enhance cost reduction, update operations and improve on level of customer services. With the implementation of information technology, the researcher established that the project has realized several key benefits among them being faster service delivery and increased revenue collection.

Wagner, Beimborn and Weitzel (2014) noted IT based firms are guided by the missions of strengthening their capacities and capabilities of processing information for growth of the organization. In order to attain this goal and objective, firms should strive to keep their costs as low as possible. Laudon and Laudon (2015) argued that an IT department of an organization need to ensure that business processes and applications are supported resulting into efficiency and effectiveness in operations of the firm. This also helps in fixation of software related issues and challenges and thus increased chances of the business attaining the underlying goals.

Wu, Straub and Liang (2015) stated that the growth, integration and sophistication of IT are changing our society and economy. Today, computers around the world are connected via Internet. Consumers now can use the Internet through various devices to interact with sellers and transact business operations. Firms can leverage on technologies to speed up the flow of information, increase on effectiveness and efficiency while at the same time ensuring the operations are conducted in the most transparent manner.

The importance of technology was recognized by Bhatnagar (2013) who revealed that it can facilitate reduction in cases of corruption. This potential however has not been

realized in most firms. It was noted that governments need to improve on their e-governance mechanisms by fully deploying ICT in operations. Schwalbe (2015) indicated that the benefits accruing from deployment of ICT can be conceptualized in a number of ways. One of this benefit is the ability of IT to increase the flow of information for effective and sound decisions making among companies. IT also results into expansion of accessibility to suppliers and markets, timely process of all activities and operations in the business.

Chae, Koh and Prybutok (2014) noted that in the Indian context, the growth in IT has helped beneficiaries to receive smart cards which store their information. With this, field staff and other workers are able to timely update the services delivered. Use of IT facilitates efficient operations and activities especially among government department (Ullah & Lai, 2013). Some of the government services that are currently being offered through technology include provision of land title deeds and this improves accessibility to such services. Information on all government expenditures today are best shared through the use of IT. At the same time, people are able to get information on how government agencies are faring on through the use of IT (Luftman, Lyytinen & ben, 2017). IT improves income in rural areas by availing opportunities and the prices of commodities.

In value-based processing, something is usually added to a product that a customer would willingly buy. Alexander (2013) indicated that firms carry out a number of undertakings to offer goods and services to consumers. In each of these systems, raw materials are received which are latter transformed into final products. An activity and operation is deemed to be effective when it results into an output with greater value as its original input.

According to Flint and Woodruff (2014), there exist value chains among consumers and buyers of products. The consumers of the products of the company could be individual or large corporations and institutions. To effectively succeed in their differentiation, firms need to ensure that their value chains and those of the buyers are aligned. When an organization strives to gain a competitive edge, there is usually value that accrues. According to a study done by Chetty, Friedman and Rockoff (2014), the critical success factors of any organization lies in their ability to add value to products and have in place customer focus initiatives. Becker, Kugeler and Rosemann (2013) in the food sector the manner which an organization packages product significantly determines the sales revenues generated. The ability of consumers to make a purchase is influenced by the perceptions and attitudes they hold and have in mind.

The key focus of the management support system is on how best an organization can use its resources to generate value to the firm. A pool of information is extracted and available from MIS which help managers to make informed decisions. It is also used as tool for analyzing data for instance on competitors. Through this system, the information needs and desires of the senior management team are served in the most effective way (Panagioti et al., 2014).

According to Elissen, Nolte, Knai, Brunn, Chevreul, Conklin and Fullerton (2013), decision support systems help owners and managers of the firm to effectively make decisions that affect the overall success of the firm. They rely on models and data that help managers make critical decisions in the course of their duties and operations in

the company. The advantages of a DSS lie in their ability to offer interactive sessions. With Executive Information Systems (EIS), managers are able to get timely and relevant information on different issues and activities within an entity.

According to Tang et al. (2014), EIS helps in briefing the executives by highlighting how various departments and functions are performing. EIS help users to automatically download data and information from repositories through completed reports. Nguyen, Donesky, Reinke, Wolpin, Chyall, Benditt and Carrieri-Kohlman (2013) noted that it is the expectation of managers for subordinate staff to use EIS in case the system is perceived to be useful. At the same time, an organization should be careful when an EIS is being implemented. This is because not every employee in an organization would readily buy and welcome change.

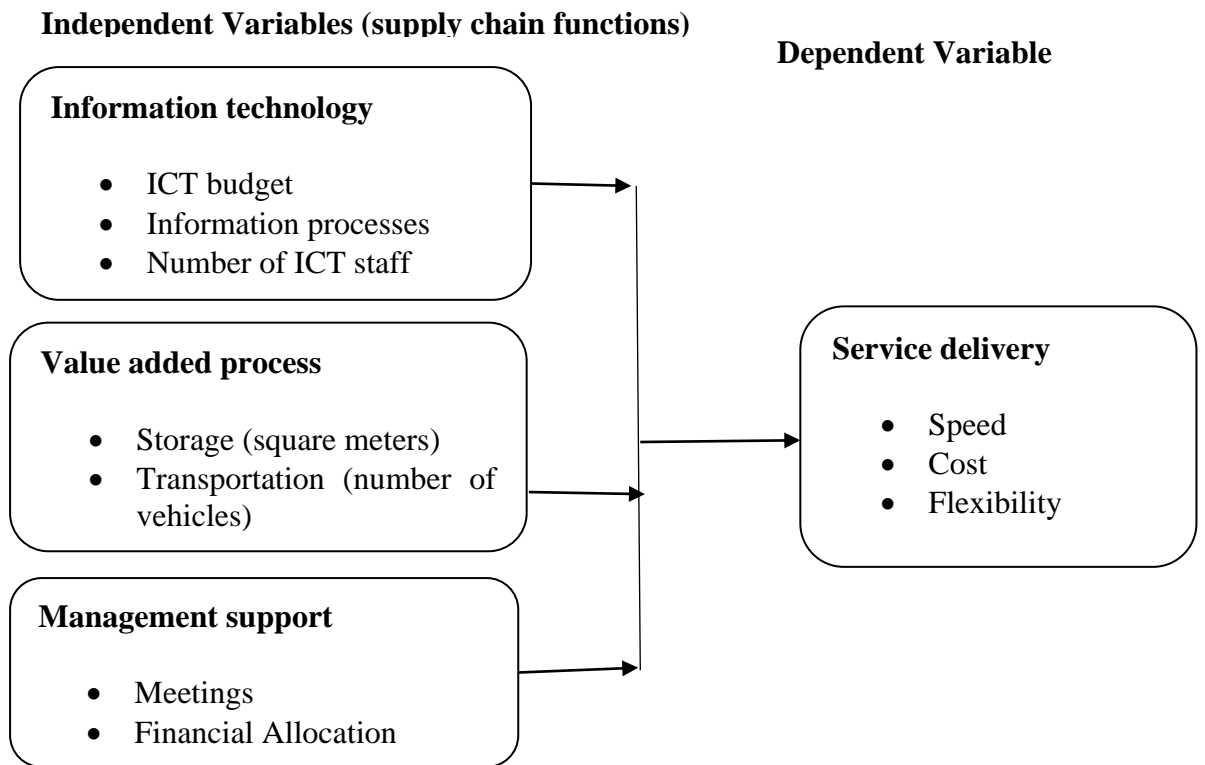
As much as provision and accessibility of services is important, even more should satisfaction of consumer needs through offering quality services. A study in Freetown, Sierra Leone by Harris (2015) indicated that the problems of collective action affect market imperfections and these include: decrease in systems coverage and low levels of access. They found out that most consumers prefer contacting informal service providers. The findings of Cammack (2017) further showed that for a long duration, small number of kiosks was able to offer water services to residents and therefore, they chose consuming water from unclean sources.

Poor responsiveness brought about by low quality can lead to delivering unrequited services to people who are in need of quality service. Bisau (2014) discovered that the level to which people are satisfied differ based on different services delivered to them. It further revealed that the services being offered were of two sectors which were

grouped as follows: environmental, health, and education sectors; and employment, roads, as well as power sectors. The survey observed that there was low satisfaction on the first category, especially within the rural areas in respect to environmental and social services. On other hand, there was a high satisfaction on second category and the people living in urban centers were dissatisfied in delivery of employment services.

## **2.5 Conceptual Framework**

This gives a pictorial illustration of the expected relationship between a dependent and independent variable in a study. It explains the relationship which is being investigated by a researcher. In this study, the dependent variable is Service Delivery operationalized in terms of costs, speed and flexibility while the independent variables include Information Technology, Value Added Processes and Management Support. Each of these variables is operationalized accordingly to ensure appropriate measurements.



**Figure 2.1: Conceptual Framework**

## 2.6 Summary and Knowledge Gap

Han, Kim, and Srivastava (2013) conducted a study on environmental uncertainty and service delivery in the market. However, no significant influence was established between the variables. Bisau (2014) examined the effectiveness of UNCHR supply chain management strategies in service delivering, in the 2006 Israel Lebanon war crises. However, the study focused on humanitarian operations; in addition, the study interviewed staff in Lebanon only and did not involve supply staff in other neighboring operations.

## 2.7 Chapter Summary

The study has reviewed relevant theories and concepts. The Resource-Based View (RBV) and goal setting theories anchoring the study are presented. The section also



covers general literature of the four study variables and empirical literature. It has a section on conceptual framework, drawing the relationship between study variables.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

In this chapter, the design that was adopted was clearly indicated. The population of the study and the technique to be used to sample were also presented. The methods for collecting and analyzing of data was also discussed.

#### **3.2 Research Design**

This study adopted a descriptive research design. This design gives an account on questions of how, when, where and who on a given problem (Yin, 2013). Descriptive studies were always handled with investigative questions and they served a number of objectives in the study (Cooper & Schindler, 2008).

Descriptive research was employed to get detailed information on how events or phenomena are in their current state. The design therefore helped in explaining the existing link between supply chain operation management and delivery of services in the context of devolved units.

#### **3.3 Population**

The study was concentrated on all the devolved units/sectors in Makueni County (agriculture, transport, infrastructure, trade development and regulation, pre-primary education, health care and planning and development) as the target population.

The target population comprised of 60 respondents comprising of the following respondents from each sub-county offices (Monitoring and Evaluation Officers, Public Participation Officers, IT Officers, Transport Officers, Accountants,

Procurement Officers and Clients) from the Government of Makueni County. The target population was as shown in the table below:

**Table 3.1: Target Population**

<b>Category</b>	<b>Population</b>
Monitoring and evaluation	6
Public participation officers	6
IT Officers	6
Transport officers	6
Accountants	6
Procurement Officers	6
Clients	24
<b>Total</b>	<b>60</b>

**Source: Makueni County, 2018**

### **3.4 Sampling Technique**

A study sampling technique was a method that researchers used to select a representative list of respondents from the entire study population (Csikszentmihalyi & Larson, 2014). Sample size was a small section of subjects drawn from the larger population (Yin, 2013). For this study all the target population elements were included into the study hence a census. The target population was small and was easily reached within the County.

### **3.5 Data Collection**

This study collected data using structured questionnaires. The questions covered the study objectives: information technology, value added process and management support in service delivery. It also had a section on background information of the respondents. The questionnaire was semi-structured.

In this study, the primary data was collected through self-administered questionnaires, because it was cost effective for the researcher and the target population is also learned hence can easily read and understand the questions. The drop and pick method

were adopted to allow the respondents sufficient to respond. The respondents were requested to give their contact information for correspondence throughout the week-long period of filling the questionnaire.

### **3.6 Data Analysis**

Data analysis refers to analyzing what has been collected and making deductions and inferences from it (Yin, 2013). It is extracting significant variables, detecting anomalies, and testing any assumptions. The questionnaires were checked for completeness and consistency; any gaps edited and filled. The collected data was coded and entered into Statistical Package for Social Science (SPSS) version 23.0 for further analysis (Chandran, 2012). Inferential statistics (regression analysis) was done to establish the relationship between the independent and the dependent study variables.

The regression model adopted was presented under:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$$

Whereby

Y = Service Delivery

X<sub>1</sub>= Information Technology

X<sub>2</sub>= Value-Added Processes

X<sub>3</sub>= Management Support

$\epsilon$  = Error Term

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND DISCUSSION

#### 4.1 Introduction

The study aimed at analyzing supply chain management and service delivery in devolved units in Kenya using a case of Makeni County. To achieve this, the study targeted 36 officers and 24 clients from each sub-county offices in data collection. The study targeted 60 respondents but due to their busy schedules 45 managed to schedule and attend which formed the basis of analysis.

#### 4.2 Background Information

Respondents were asked to indicate their background information regarding period worked in their current department, number of years worked in a public sector and current position held. The findings are as shown in subsequent sections.

##### 4.2.1 Period Worked

The researcher sought to establish the appropriateness of the respondents, to achieve this the researcher asked them to state the period they had worked in their current department. The findings are as shown in Table 4.1.

**Table 4.1: Period Worked in Current Department**

	Frequency	Percent
Less than 3 years	8	27.6
4-6 years	16	55.2
7-10 years	5	17.2
<b>Total</b>	<b>29</b>	<b>100.0</b>

**Source; Research Data (2018)**

The findings show that 27.6% had worked for less than 3 years, 55.2% indicated 4-6 years and 17.2% indicated 7-10 years. Most of the respondents stated that they had

worked in their current department for more than 3 years. The responses show that majority of the respondents had worked long enough in their department to understand how supply chain management practices influenced service delivery. The responses show that the respondent would give reliable data required by the study.

#### **4.2.2 Number of Years Worked in Public Sector**

The respondents were further asked to indicate the number of years they had worked in a public sector to ascertain their level of understanding on influence of supply chain management on service delivery. The findings are as shown in Table 4.2.

**Table 4.2: Number of Years Worked in Public Sector**

	<b>Frequency</b>	<b>Percent</b>
Less than 3 years	6	20.7
4-6 years	16	55.2
7-10 years	7	24.1
<b>Total</b>	<b>29</b>	<b>100.0</b>

**Source; Research Data (2018)**

The study established that 20.7% had worked for less than 3 years in public sector, 55.2% indicated 4-6 years and 24.1% indicated 7-10 years. From the responses, most of the respondent had worked for more than 4 years in public sectors. The responses show that the respondents were well conversant with service delivery in public sectors and how supply chain management influenced service delivery. The responses show that the respondents were appropriate for the study as they were aware of how the public sector runs its service delivery.

#### **4.2.3 Position Held**

The researcher further asked the respondents to indicate their current positions at public sector. The findings are as shown in Table 4.3.

**Table 4.3: Position Held**

	<b>Frequency</b>	<b>Percent</b>
Monitoring and Evaluation Officers	3	6.7
Public Participation Officers	4	8.9
IT Officer	5	11.1
Transport Officers	5	11.1
Accountant	6	13.3
Procurement Officer	6	13.3
Clients	16	35.6
<b>Total</b>	<b>45</b>	<b>100.0</b>

**Source; Research Data (2018)**

The findings show that 6.7% of the respondents were monitoring and evaluation officers, 8.9% were public participation officers, 11.1% were IT Officers and transport officers, both accountants and procurement officers accounted for 13.3% each, while the clients were 35.6%. This shows that the respondents came from all of the sectors that were engaged in service delivery, an indication that they were well informed on how supply chain management influences service delivery in the public sector of Makueni County.

### **4.3 Information Technology**

#### **4.3.1 ICT Budget**

The researcher asked the respondents to indicate their ICT budget, the findings are as shown in Table 4.4.

**Table 4.4: ICT Budget**

<b>ICT Budget</b>	<b>Frequency</b>	<b>Percent</b>
Below 500000	5	17.2
500001-800000	16	55.2
Above 800000	8	27.6
<b>Total</b>	<b>29</b>	<b>100</b>

**Source; Research Data (2018)**

From the responses, 17.2% of sub-county offices had an ICT Budget of below 500000, 55.2% indicated a budget of 500001-800000 and 27.6% indicated above 800000. The findings show that majority of the sub-county offices in Makueni County had a budget ranging from KShs 500001-800000. The responses with the optimal budget indicated that they had already implemented ICT to fasten work output in their offices and needed the amount to purchase more computers. This finding is consistent with Wu, Straub and Liang (2015) who stated that the growth, integration and sophistication of IT are changing our society and economy. Today, computers around the world are connected via Internet. Consumers now can use the Internet through various devices to interact with sellers and transact business operations. Firms can leverage on technologies to speed up the flow of information, increase on effectiveness and efficiency while at the same time ensuring the operations are conducted in the most transparent manner. The response from the respondents with a minimum budget indicated that they had not implemented ICT in their applications hence needed funding on ICT implementation.

#### 4.3.2 Number of Staffs

The researcher further asked the respondents to indicate the number of staffs in their ICT department, the findings are as shown in Table 4.5.

**Table 4.5: Number of Staffs**

<b>Number of Staffs</b>	<b>Frequency</b>	<b>Percent</b>
1-3	6	20.7
3-5	19	65.5
Above 5	4	13.8
<b>Total</b>	<b>29</b>	<b>100.0</b>

**Source; Research Data (2018)**



The study found out that 20.7% of the sub county offices had 1-3 employees, 65.5% had 3-5 employees and 13.8% indicated above 5 employees. From the response, majority of the sub-county offices had an average of 5 employees in ICT department. This shows that Makueni County had embraced ICT due to devolution and its sub-counties used ICT in their processes to ease up. This finding is in line with Schwalbe (2015) who indicated that the benefits accruing from deployment of ICT can be conceptualized in a number of ways. One of these benefits is the ability of IT to increase the flow of information for effective and sound decisions making among companies. IT also results into expansion of accessibility to suppliers and markets, timely process of all activities and operations in the business.

#### **4.3.2 Processes Automation**

The respondents were further asked to indicate what percentages of their processes were automated, the findings are as shown in Table 4.6.

**Table 4.6: Processes Automation**

	<b>Frequency</b>	<b>Percent</b>
Less than 25%	19	65.5
26-50%	8	27.6
Above 50%	2	6.9
<b>Total</b>	<b>29</b>	<b>100.0</b>

**Source; Research Data (2018)**

The findings established that 65.5% of sub counties had automated their processes by less than 25%, 27.6% indicated a range of 26-50% and 6.9% indicated above 50%. The findings showed that all of sub counties offices of Makueni County Government had partially automated their processes. This shows that Makueni County had partially automated their processes to enhance cost reduction and update operations. This finding is consistent with Croson and Drnevich (2013) who indicated that by use

of technology, an organization can enhance cost reduction, update operations and improve on level of customer services. With the implementation of information technology, the researcher established that the project has realized several key benefits among them being faster service delivery and increased revenue collection.

#### **4.4 Value Added Process**

##### **4.4.1 Storage Area in Square Meters**

Respondents were asked to indicate whether their storage area in square metres was owned or leased. The findings showed that all of the sub county offices storage area was owned and none had leased a storage area an indication that county government of Makueni owned their storage areas. The findings on the storage space in square metres are as shown in Table 4.7

**Table 4.7: Storage Area in Square Meters**

	<b>Frequency</b>	<b>Percent</b>
10 M <sup>2</sup>	2	6.9
10-15 M <sup>2</sup>	9	31
15-20 M <sup>2</sup>	11	37.9
Above 20 M <sup>2</sup>	7	24.2
<b>Total</b>	<b>29</b>	<b>100.0</b>

**Source; Research Data (2018)**

The study established that 6.9% indicated that their storage area was 10 square meters, 31% had a storage area of 10-15 M<sup>2</sup>, 37.9% had 15-20 M<sup>2</sup> and 24.2% had a storage of above 20 M<sup>2</sup>. The findings show that the sub county offices had a storage space of 10 M<sup>2</sup> and above.

#### 4.4.2 Number of Vehicles

The researcher further asked the respondent to indicate whether they owned any vehicle in their departments, the findings are as shown in Table 4.8.

**Table 4.8: Number of Vehicles**

	<b>Frequency</b>	<b>Percent</b>
1-3	7	24.1
3-5	16	55.2
Above 5	6	20.7
<b>Total</b>	<b>29</b>	<b>100.0</b>

**Source; Research Data (2018)**

Based on the findings, 24.1% of the respondents had 1-3 vehicles, 55.2% had 3-5 vehicles and 20.7% indicated above 5 vehicles. From the response, the study established that the departments owned more than 3 vehicles that catered for better service delivery in different destination. Respondent was further asked to indicate the number of vehicles they had leased. From the response, the departments indicated that they had not leased vehicles since they had their own vehicles to deliver services. This finding is consistent with Alexander (2013) who indicated that firms carry out a number of undertakings to offer goods and services to consumers. In each of these systems, raw materials are received which are latter transformed into final products. An activity and operation are deemed to be effective when it results into an output with greater value as its original input.

#### 4.5 Management Support

##### 4.5.1 Number of Meetings

The respondents were asked to indicate the number of meetings they held in their department per quarter year, the findings are as shown in Table 4.9.

**Table 4.9: Number of Meetings**

	<b>Frequency</b>	<b>Percent</b>
1	4	13.8
1-2	5	17.2
2-3	7	24.2
Above 3	13	44.8
<b>Total</b>	<b>29</b>	<b>100.0</b>

**Source; Research Data (2018)**

From the response, 13.8% of the respondents indicated that they held 1 meeting per quarter year, 17.2% indicated 1-2 meetings, and 24.2% indicated 2-3 meetings and 44.8% indicated above 3 meetings. The study established that majority of staffs held at least 3 meetings. The responses also indicated that the meetings enhanced generation and implementation of new ideas that led to efficiency in production.

#### **4.5.2 Financial Budget**

The respondents were further asked to indicate the financial budget of their departments, the findings are as shown in Table 4.10.

**Table 4.10: Financial Budget**

	<b>Frequency</b>	<b>Percent</b>
KShs. 3000000-5000000	4	13.8
KShs. 5000000-8000000	20	69
Above KShs. 8000000	5	17.2
<b>Total</b>	<b>29</b>	<b>100.0</b>

**Source; Research Data (2018)**

The study established that 13.8% of the respondents indicated that their department needed Ksh 3-5 Million, 69% indicated 5-8 Million and 17.2% indicated above 8 million. From the responses, majority of the respondents indicated that they needed an average of KShs.5, 000,000-8,000,000 for proper management of the systems processes implemented on the departments. Therefore, they need more funds from investors to support their process of acquiring and implementation. This finding is

supported by Andebe, (2011) who indicated that organizations have continued to adopt SCM with the aim of reducing inventory handling related costs, improving the quality of services delivered, and reducing the production cycles of products. Supply chain management is basically focused on meeting and surpassing the dynamic needs of customers. It has been observed as one of the most effective ways for organizations to improve on their performance.

## 4.6 Service Delivery

### 4.6.1 Quality of Service Delivery

The researcher asked customers/clients to determine whether the quality of service delivery the county had improved in the last one year, the findings are as shown in Table 4.11.

**Table 4.11: Quality of Service Delivery**

	<b>Frequency</b>	<b>Percent</b>
No change	1	6.3
Improved	8	50
Very improved	7	43.7
<b>Total</b>	<b>16</b>	<b>100</b>

**Source; Research Data (2018)**

The study found out that 6.3% of the customers indicated no change, 50% indicated that that quality of service delivery had improved while 43.7% indicated very improved. From the response, the study established that the level of quality of service delivery had improved significantly.

### 4.6.2 Speed of Service Delivery

The respondents were further asked to comment on the Speed of service delivery in the county in the last one year, the findings are as shown in Table 4.12.

**Table 4.12: Speed of Service Delivery**

	<b>Frequency</b>	<b>Percent</b>
No change	1	6.2
Improved	7	43.8
Very improved	8	50
<b>Total</b>	<b>16</b>	<b>100</b>

**Source; Research Data (2018)**

The study found out that 6.2% of the respondents indicated that the speed of service delivery at sub county offices in Makueni had not changed, 43.8% indicated improved while 50% indicated very improved. From the response, the study established that the speed of service delivery was very improved due to adoption of ICT in the departments. This finding is concurrent with Chae, Koh and Prybutok (2014) who noted that the growth in IT has helped beneficiaries to receive smart cards which store their information. With this, field staff and other workers are able to timely update the services delivered.

#### **4.6.3 Percentage of the Cost Used**

The respondents were further asked to indicate the percentage increase / decrease in sub county costs from the previous year, the findings are as shown in Table 4.13.

**Table 4.13: Percentage increase in sub county costs**

	<b>Frequency</b>	<b>Percent</b>
0-20%	10	62.5
20-40%	5	31.3
40-60%	1	6.2
<b>Total</b>	<b>16</b>	<b>100</b>

**Source; Research Data (2018)**

Respondents indicated that the county government had showed an increase in sub county costs. This shows that there was a subsequent increase in service delivery as compared to the previous year an indication that the clients were satisfied with

services offered by the county government of Makueni. The finding is in line with Ullah and Lai (2013) who identified that IT facilitates efficient operations and activities especially among government department.

#### 4.6.4 Flexibility in Service Delivery

The researcher asked the respondents to indicate the rate of the flexibility in service delivery in the Makueni County, the findings are as shown in Table 4.14.

**Table 4.14: Flexibility in Service Delivery**

	<b>Frequency</b>	<b>Percent</b>
Inflexible	1	6.2
Moderately Flexible	3	18.7
Flexible	7	43.8
Very Flexible	5	31.3
<b>Total</b>	<b>16</b>	<b>100</b>

**Source; Research Data (2018)**

According to the study, 6.2% of clients indicated that service delivery was inflexible, 18.7% indicated moderately flexible, 43.8% indicated flexible, 31.3% indicated very flexible. From the findings, respondents indicated that the rate of service was flexible hence would be carried out at any time. The finding is concurrent with Wu, Straub and Liang (2015) who stated that Firms can leverage on technologies to speed up the flow of information, increase on effectiveness and efficiency while at the same time ensuring the operations are conducted in the most transparent manner.

The respondents were asked to indicate any comment about service delivery in the county. From the findings, one respondent indicated that service delivery had improved due to the harmony between the executive and the county assembly. The respondent also established that the department had introduced a check list which had reduced the period of processing transactions. This finding is echoed by Wisner, Tan

and Leong (2010) who indicated that Supply Chain Management involves organization and integration of the distribution of goods and services along the supply chain. For supply chain management to have a positive impact, organizations must team up on issues like demand forecasts, production plans, changes in production capacity, new market strategies, ultra-modern product and service developments, modern technologies adopted, procurement plans, delivery and other aspects that have an effect on the firm's procurement, production and logistical layouts.

#### **4.6.5 Summary of the Observations**

Table 4.15 presents a summary of the observations of the study in terms of the independent and the dependent variables per Sub County. The independent variables were; ICT, Value added process and management support while the dependent variable was service delivery.



**Table 4.15: Summary of the Observations**

Subcounty	ICT			Value Added Processes		Management Support		Service Delivery			
	Budget(log)	Staff	% Automation	Storage Area (Sq M)	No. of Vehicles	No. of Meeting	Financial Budget(log)	Quality of Service	Speed	Cost	Flexibility
Kaiti Subcounty	6.051	3	23.8	37	3	3	7.233	4	4	13	4
Kilome Subcounty	5.901	3	23.5	22.5	3	3	7.270	4	4	14	3
Kibwezi East Subcounty	5.950	5	20.8	24	4	3	7.099	3	3	18	3
Kibwezi West Subcounty	5.889	5	20	34	5	3	7.051	4	4	12	3
Mbooni Subcounty	6.099	5	22	30.4	3	3	7.174	3	3	13	3
Makueni Subcounty	6.144	6	20.6	27	3	3	7.037	3	3	24	3

**Source; Research Data (2018)**

From Table, ICT was measured by the budget, number of staff and percentage of automation. Value added processes were measured by storage area and number of vehicles, management support was measured by number of meetings and financial budget while service delivery was measured in terms of quality of service, speed, cost and flexibility. Since the values for the ICT budget and the departmental financial budget were in terms of millions, the researcher applied the natural logarithm. This was done to standardize the findings.

## 4.7 Regression Analysis

The researcher conducted regression analysis to establish the effect of supply chain management and service delivery in devolved units in Kenya. The findings are as shown in subsequent sections.

### 4.7.1 Effect of Supply Chain Management on Speed

The findings on effect of supply chain management on speed are as indicated below:

#### 4.7.1.1 Model Summary

The findings of coefficient of correlation R and coefficient of adjusted determination  $R^2$  is as shown in Table 4.16.

**Table 4.16: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.801 <sup>a</sup>	.642	.633	2.22670

a. Predictors: (Constant), Information Technology, Value Added Process, Management Support

#### Source; Research Data (2018)

The findings established that coefficient of correlation R was 0.801, an indication of a strong correlation with the variables. The findings also established that coefficient of adjusted  $R^2$  was 0.633 which translates to 63.3%. This explains that 63.3% changes of speed on service delivery can be explained by the following variables; information technology, value added process, management support. The residual of 36.7% can be explained by other factors beyond the scope of the current study.

#### 4.7.1.2 ANOVA

An ANOVA was conducted at 95% level of significant, the findings of  $F_{\text{Calculated}}$  and  $F_{\text{Critical}}$  are as shown in Table 4.17.

**Table 4.17: ANOVA**

<b>Model</b>	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	1518.305	3	506.102	24.474	.000 <sup>b</sup>
Residual	847.854	41	20.679		
<b>Total</b>	<b>2366.159</b>	<b>44</b>			

a. Dependent Variable: Service Delivery

b. Predictors: (Constant), Information Technology, Value Added Process, Management Support

**Source; Research Data (2018)**

The findings in Table 4.17 show that  $F_{\text{Calculated}}$  was 24.474 and  $F_{\text{Critical}}$  was 2.8164 an indication that  $F_{\text{Calculated}} > F_{\text{Critical}}$ . Therefore, the overall regression model was significant for the study. The study established that the p value was 0.00 which is less than 0.05 an indication that at least one variable significantly influenced speed of service delivery in Makueni County.

#### 4.7.1.3 Regression Coefficients

The findings are as shown in Table 4.18.

**Table 4.18: Effect of Supply Chain Management on Speed**

<b>Model</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
(Constant)	9.669	1.418		6.818	.000
Information technology	.587	.134	.992	4.381	.000
Value-added processes	.110	.029	.256	3.770	.000
Management support	.371	.049	.485	7.581	.000

a. Dependent Variable: Service Delivery

**Source; Research Data (2018)**

All the variables had  $p=0.000 < 0.05$ , an indication that all the key variables are significant.

#### 4.7.2 Effect of Supply Chain Management on Cost

The findings of effect of supply chain management on cost are as indicated in the next page.

#### 4.7.2.1 Model Summary

The findings of coefficient of correlation R and coefficient of adjusted determination  $R^2$  is as shown in Table 4.19.

**Table 4.19: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807 <sup>a</sup>	.651	.643	2.34568

b. Predictors: (Constant), Information Technology, Value Added Process, Management Support

#### Source; Research Data (2018)

The findings established that coefficient of correlation R was 0.807, an indication of a strong correlation with the variables. The findings also established that coefficient of adjusted  $R^2$  was 0.643 which translates to 64.3%. This explains that 64.3% changes of cost can be explained by the independent variables. The residual of 35.7% can be explained by other factors beyond the scope of the current study.

#### 4.7.1.2 ANOVA

An ANOVA was conducted at 95% level of significant, the findings of  $F_{\text{Calculated}}$  and  $F_{\text{Critical}}$  are as shown in Table 4.20.

**Table 4.20: ANOVA**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1540.370	3	513.457	25.493	.000 <sup>b</sup>
Residual	825.789	41	20.141		
<b>Total</b>	<b>2366.159</b>	<b>44</b>			

c. Dependent Variable: Service Delivery

d. Predictors: (Constant), Information Technology, Value Added Process, Management Support

#### Source; Research Data (2018)

The findings in Table 4.20 show that  $F_{\text{Calculated}}$  was 25.493 and  $F_{\text{Critical}}$  was 2.8164 an indication that  $F_{\text{Calculated}} > F_{\text{Critical}}$ . Therefore, the overall regression model was significant for the study. The study established that the p value was 0.00 which is less than 0.05 and indication that at least one variable significantly influenced cost of service delivery in Makueni County.

### 4.7.1.3 Regression Coefficients

The findings of regression coefficient is as shown in Table 4.21.

**Table 4.21: Effect of Supply Chain Management on Cost**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.043	1.033		6.818	.000
Information technology	.241	.069	.784	3.498	.010
Value-added processes	.211	.043	.357	4.907	.000
Management support	.030	.022	.024	1.358	.670

a. Dependent Variable: Cost

b. Predictors: (Constant), Information Technology, Value Added Process, Management Support

**Source; Research Data (2018)**

The findings show that two variables: information technology and value-added processes had a positive influence on cost while management support negatively influenced cost of service delivery.

### 4.7.3 Effect of Supply Chain Management on Flexibility

The findings on effect of supply chain management on flexibility are as indicated below:

#### 4.7.3.1 Model Summary

The Model Summary in Table 4.22 indicates among other things the coefficient of correlation R and the coefficient of determination R square.

**Table 4.22: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.862 <sup>a</sup>	.743	.734	2.34568

a. Predictors: (Constant), Information Technology, Value Added Process, Management Support

The findings established that coefficient of correlation R was 0.862, an indication of a strong correlation with the variables. The findings also established that coefficient of adjusted R<sup>2</sup> was 0.734 which translates to 73.4%. This explains that 73.4% changes of flexibility of service delivery can be explained by the three independent variables.

The residual of 26.6% can be explained by other factors beyond the scope of the current study.

#### 4.7.3.2 Analysis of Variance (ANOVA)

The findings of ANOVA is as indicated in Table 4.23.

**Table 4.23: ANOVA**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1758.056	3	586.019	39.511	.000 <sup>b</sup>
Residual	608.103	41	14.812		
<b>Total</b>	<b>2366.159</b>	<b>44</b>			

a. Dependent Variable: Service Delivery

b. Predictors: (Constant), Information Technology, Value Added Process, Management Support

#### Source; Research Data (2018)

The findings in Table 4.23 show that  $F_{\text{Calculated}}$  was 39.511 and  $F_{\text{Critical}}$  was 2.8164 an indication that  $F_{\text{Calculated}} > F_{\text{Critical}}$ . Therefore, the overall regression model was significant for the study. The study established that the p value was 0.00 which is less than 0.05 and indication that at least one variable significantly influenced frequency of service delivery in Makueni County.

#### 4.7.3.3 Regression Coefficient

The findings of regression coefficient is as shown in Table 4.24.

**Table 4.24: Effect of Supply Chain Management on Flexibility**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.808	1.033		5.622	.000
Information technology	.126	.045	.536	2.789	.000
Value-added processes	.123	.033	.464	3.727	.002
Management support	.014	.037	.433	3.773	.000

a. Dependent Variable: Flexibility

b. Predictors: (Constant), Information Technology, Value Added Process, Management Support

#### Source; Research Data (2018)

All the variables had  $p < 0.05$ , an indication that all the key variables are significant.

## **4.8 Discussion of the Key Findings**

The study found out that information technology had a positive influence on service delivery in Makueni County. Makueni County has embraced ICT due to devolution and its sub-counties use ICT in their processes to ease up transactions processes. Makueni County has automated some of their processes to enhance cost reduction and update operations. This finding is consistent with Croson and Drnevich (2013) who indicated that by use of technology, an organization can enhance cost reduction, update operations and improve on level of customer services.

The study established that value-added processes had a positive influence on service delivery in Makueni County. The findings show that the sub county offices had a storage space of 10 M<sup>2</sup> and above and the departments owned more than 3 vehicles that catered for better service delivery in different destinations. This finding is consistent with Flint and Woodruff (2014) who states that when an organization strives to gain a competitive edge, there is usually value that accrues. Chetty, Friedman and Rockoff (2014) argues that the critical success factors of any organization lie in their ability to add value to products and have in place customer focus initiatives.

The study established that majority of staffs held at least 3 meetings. Majority of the respondents indicated that they needed an average of KShs.5, 000,000-8,000,000 for proper management of the systems processes implemented on the departments. This finding is supported by Andebe, (2011) who indicated that organizations have continued to adopt SCM with the aim of reducing inventory handling related costs, improving the quality of services delivered, and reducing the production cycles of products.

## **CHAPTER FIVE**

### **SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of the findings of the content analysis as presented in chapter four. Conclusion and recommendations are based on the summary of the findings. Suggestions for further studies are also drawn.

#### **5.2 Summary of the Findings**

The main purpose of the study was to analyze supply chain management and service delivery in devolved units in Kenya using a case of Makueni County. The study was guided by the following specific objectives; to establish the effect of information technology on service delivery in devolved units in Kenya using a case of Makueni County. To establish the effect of value-added processes on service delivery in devolved units in Kenya using a case of Makueni County. To establish the effect of management support on service delivery in devolved units in Kenya using a case of Makueni County.

##### **5.2.1 Information Technology**

From the responses, departments with a minimal budget had implemented ICT on a lower scale hence needed more funding to boost their ICT implementation. Majority of the sub-county offices had an average of 5 employees in ICT department. This shows that Makueni County had embraced ICT due to devolution and its sub-county's used ICT in their processes. All of sub counties offices of Makueni County Government had automated their processes.



### **5.2.2 Value Added Process**

The study established that all of the offices space had owned their storage area. None of the response indicated that they had leased a storage area an indication that county government of Makueni owned their storage areas. The study established that the departments owned more than 3 vehicles that catered for better service delivery in different destination. Respondents were further asked to indicate the number of vehicles they had leased. The departments indicated that they had not leased vehicles since they had their own vehicles to deliver services.

### **5.2.3 Management Support**

The study established that they held an average of 3 meetings. The responses indicated that the meetings enhanced generation and implementation of new ideas that the led to efficiency in production. Majority of the respondents indicated that they needed an average of 5 to 8 million for proper management of the systems processes implemented on the departments.

## **5.3 Conclusion**

The study concludes that information technology had been implemented by the county government and had led to effective production and deliverance of services. Embracement of ICT had led to reduced time in serving clients enhancing better service delivery. The study established that county government had their own office spaces and vehicles. This led to cost saving in leasing the space and vehicles hence using the extra cost in investing on ICT. The study further concludes that the management held an average of 3 meetings per quarter year. This conclusion concurs with transaction theory that focuses on an organization's decisions relating to

networks creation and other governance structures for optimal organization performance. The findings are in line with Systems Theory which states how production processes should proceed as expected and show how network with suppliers can be created so as to minimize costs in the supply chain.

#### **5.4 Recommendations**

The county government management ought to increase their budget on ICT implementation for better service delivery and for increased efficiency. The senior management ought to increase the number of employees in the ICT department in order to enhance service delivery. In order for the county government of Makueni to improve on the current levels of service delivery, the senior management ought to increase the level of automation.

The policy makers especially in the Ministry of devolution ought to influence government in formulation and implementation of supply chain management in the county. Policy makers in the county government of Makueni ought to ensure that the staffs employed to work in their respective departments are competent enough to produce effective results. Policy makers ought to ensure that all of the offices have embraced the use of IT. Policy makers ought to ensure that the county government have improved its service delivery.

#### **5.5 Limitations of the Study**

The study was limited to supply chain management on service delivery. Additionally, the study was limited to Makueni County as a devolved unit in Kenya. More so the study was limited to primary data that was collected by use of questionnaires. Some of the respondents did not participate in the study due to their busy schedules.

## **5.6 Suggestions for Further Studies**

The current study focused on analyzing supply chain management and service delivery in devolved units in Kenya on Makueni County, future scholars ought to carry out similar studies at different counties in Kenya. The current study current study focused on devolved units in Kenya, future scholars ought to carry out similar studies on private profit-making organizations. The current study relied on primary data which was qualitative, future scholars ought to carry out similar studies by use of quantitative data to measure their consistency.

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## APPENDICES

### APPENDIX I : QUESTIONNAIRE

#### SECTION A: DEMOGRAPHIC INFORMATION

1. Period you have worked in this department  
Less than 3 years [ ] 4-6 years [ ]  
7-10 years [ ] More than 10 years [ ]
2. How many years have you worked in the public sector?  
Less than 3 years [ ] 4-6 years [ ]  
7-10 years [ ] More than 10 years [ ]
3. What is your position in the Institution?  
Monitoring and Evaluation Officer [ ] IT Officer [ ]  
Public Participation Officers [ ] Transport officers [ ]  
Accountant [ ] Procurement Officer [ ]

#### SECTION B: INFORMATION TECHNOLOGY.

- i. What is your ICT budget?  
\_\_\_\_\_
- ii. How many staff do you have in the ICT department?  
\_\_\_\_\_
- iii. What percentage (%) of your processes are automated?  
\_\_\_\_\_

#### SECTION C: VALUE ADDED PROCESS

- i. What is your storage area in square metres?
  - a) Owned-----



b) Leased-----

ii. How many vehicles does your department have?

a) Owned-----

b) Leased-----

**SECTION D: MANAGEMENT SUPPORT**

How many meetings does your department hold per quarter year?

---

What is the financial budget of your department?

---

**SECTION F: SERVICE DELIVERY (to be filled by 4 customers/clients per sub county)**

i. Quality of service delivery in the county has improved in the last one year

Deteriorated [ ]

No change [ ]

Improved [ ]

Very improved [ ]

ii. Comment on the Speed of service delivery in the county in the last one year

Much worse [ ]

No change [ ]

Improved [ ]

Very improved [ ]

iii. What is the Percentage increase/decrease in sub county costs from the previous year\_\_\_\_\_?

iv. Rate the flexibility in service delivery in the Makueni County

Inflexible [ ]

Moderately flexible [ ]

Flexible [ ]

Very flexible [ ]

Make any comment about service delivery in the county.

---

**THANK YOU**

## APPENDIX II: DATA USED FOR REGRESSION

Respondents	Sub county	ICT			VALUE ADDED PROCESSES		MANAGEMENT SUPPORT		SERVICE DELIVERY			
		Budget	Staff	% Automation	Storage Area (Sq M)	No. of Vehicles	No. of Meeting	Financial Budget	Quality of Service	Speed	Cost	Flexibility
Staff	Kaiti Subcounty	6.602	3	30	20	1	6	8.182				
Staff	Kaiti Subcounty	5.398	1	30	0	1	3	6.000				
Staff	Kaiti Subcounty	6.079	3	10	120	4	3	8.079				
Staff	Kaiti Subcounty	6.000	3	20	20	4	3	7.000				
Staff	Kaiti Subcounty	6.176	3	29	25	6	3	6.903				
Staff	Kilome Subcounty	6.602	1	30	20	1	6	8.176				
Staff	Kilome Subcounty	5.301	3	30	0	1	3	6.000				
Staff	Kilome Sub	6.000	3	10	50	8	1	8.000				

	county											
Staff	Kilome Subcounty	5.699	3	24	20	3	3	6.903				
Staff	Kibwezi East Subcounty	6.623	2	30	9	2	6	8.185				
Staff	Kibwezi East Subcounty	5.699	5	20	0	1	3	6.000				
Staff	Kibwezi East Subcounty	5.301	3	30	0	1	3	6.602				
Staff	Kibwezi East Subcounty	5.903	5	10	80	8	2	7.903				
Staff	Kibwezi East Subcounty	6.477	5	15	30	4	3	7.000				
Staff	Kibwezi East Subcounty	5.699	5	20	25	6	3	6.903				
Staff	Kibwezi West	5.477	5	30	0	1	3	6.301				

	Sub count y											
Staff	Kib wezi Wes t Sub count y	5.9 03	5	10	80	8	6	8.00 0				
Staff	Kib wezi Wes t Sub count y	6.4 77	5	18	30	4	2	7.00 0				
Staff	Kib wezi Wes t Sub count y	5.6 99	5	22	26	8	3	6.90 3				
Staff	Mbo oni Sub count y	6.6 99	3	25	30	1	6	8.19 0				
Staff	Mbo oni Sub count y	5.6 99	5	22	0	1	3	6.17 6				
Staff	Mbo oni Sub count y	5.3 98	2	30	0	1	2	6.60 2				
Staff	Mbo oni Sub count y	6.0 00	5	10	100	8	6	8.00 0				
Staff	Mbo oni Subc	6.6 99	5	23	22	5	3	6.90 3				

	ount y											
Staff	Mak ueni Subc ount y	5.6 99	5	20	0	1	3	6.30 1				
Staff	Mak ueni Subc ount y	6.0 00	5	23	0	1	3	6.60 2				
Staff	Mak ueni Subc ount y	6.1 76	5	10	100	8	2	8.07 9				
Staff	Mak ueni Subc ount y	7.0 00	12	25	5	1	2	7.30 1				
Staff	Mak ueni Subc ount y	5.8 45	5	25	30	5	3	6.90 3				
Clients/C ustomers	Kaiti Subcounty								3	4	15	4
Clients/C ustomers	Kaiti Subcounty								4	3	10	4
Clients/C ustomers	Kilome Sub county								4	4	13	3
Clients/C ustomers	Kilome Sub county								3	3	15	3
Clients/C ustomers	Kibwezi East Subcounty								3	2	20	2
Clients/C ustomers	Kibwezi East Subcounty								3	3	15	3
Clients/C ustomers	Kibwezi West Subcounty								3	3	10	3
Clients/C	Kibwezi								4	4	12	2

ustomers	West Subcounty										
Clients/C ustomers	Kibwezi West Subcounty							4	4	15	4
Clients/C ustomers	Mbooni Subcounty							3	3	15	3
Clients/C ustomers	Mbooni Subcounty							3	3	14	3
Clients/C ustomers	Mbooni Subcounty							3	4	10	3
Clients/C ustomers	Makueni Subcounty							4	3	10	4
Clients/C ustomers	Makueni Subcounty							3	3	15	3
Clients/C ustomers	Makueni Subcounty							3	3	14	3
Clients/C ustomers	Makueni Subcounty							3	3	56	3