

**FACTORS INFLUENCING EFFECTIVE SUPPLY CHAIN MANAGEMENT IN
DELIVERY OF PUBLIC DEVELOPMENT PROJECTS IN NAKURU TOWN
AND BARINGO CENTRAL CONSTITUENCY, KENYA**

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FOR THE REQUIREMENTS OF THE DEGREE OF MASTER OF ARTS IN
PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF
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DECLARATION

This research report is my original work and has not been presented for the award of a Degree in any other university.

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This research report has been submitted for examination with my approval as the university supervisor.

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DEDICATION

This research report is dedicated to my beloved parents Mr. and Mrs. Ogega, my sister Elizabeth, my brothers Dominic and Emmanuel for their endless support, encouragement, correction, care and concern they accorded me during the entire project period. You all truly inspired me.

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ABBREVIATIONS AND ACRONYMS

CDF	Constituency Development Fund
C.D.F.C	constituency development fund committee
G.O.K	Government of Kenya
L.A.T.F	Local Authority Transfer Funds
MTP	Medium Term Plans
NMB	National Management Board
PMC	Project management committee
P.M.I	Project Management Index
PPDA	Public Procurement and Disposal Act (2005)
PPDR	Public Procurement and Disposal Regulation
S.A.G.A	Semi Autonomous Government Agency
S.W.O.T	Strength, Weakness Opportunities and Threats
WB	World Bank

ABSTRACT

In a contemporary shift towards result-based management across governments and a deliberate focus on customer service in both development initiatives and business environments, there is a problem in effective management of supply chain in projects that lead to late completion and overrun in costs. The study sought to find out the factors influencing effective supply chain - management in delivery of public development projects. The objectives of the study were to assess the role of supply chain management in timely and cost effective delivery of public funded development projects, assess the importance of early identification of a need in projects supply chain-management, the role of supplier involvement and determine challenges facing supply chain management procedures in public funded development projects. A descriptive survey was conducted using a sample size of 88 officers who are actively involved in supply chain management in projects. Questionnaires were then circulated to these officers through research assistants and were analysed using Statistical Processes for Social Scientists. A response of 86% was obtained. 52.6% of suppliers could not deliver within the specified timeliness. 52.6% of used a standby list of reliable suppliers and act on need basis. 57.9% of the respondent's performance measurement systems and internal company optimization. 52.6% of respondents felt implementation of law and engaging professionals on how government, can have influence towards better methods of supply chain management. 31.6% were of the opinion that adhoc requisition by user department should be flexible with reliable suppliers and advance communication. The findings from the survey revealed that majority of the Project Management Committees had attained university education 68.4%, 52.6% had attended at least one training. Majority of respondents indicated although a training needs analysis was carried out, it did not emphasize on the areas of supply chain management as a method of cutting costs. 42% of the respondents chose cost effectiveness in procurement as a method of moving towards lean supply. 15.8% chose enhanced supplier relationship and only 5.3% chose involvement of supply chain staff identified. There was however little or no stakeholder involvement. The study recommended that recommendation into the Project Management Committees should be set on the minimum set requirements. Training especially those based on project supply chain management should be encouraged. In addition there is need to develop steps to develop sound monitoring indicators that are jointly formulated before monitoring and education and auditing takes place. The study provides information to county governments and policy makers involved in project supply chain management in Kenya on better methods of managing supply chain from early identification of a need, early supplier involvement, and better selection of procurement method.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The term Supply Chain Management entered the public domain when Keith Oliver a consultant used it while interviewing for financial times in 1982. The term was slow to gain dominance in organizations but however was generally accepted by the mid 1990s.

Owing to intense competition in the textile and apparel industry world-wide, leaders in the US apparel industry formed the Crafted With Pride in the USA Council in 1984 (Kurt Salmon Associates, Inc., 1993). In 1985, Kurt Salmon Associates were commissioned to conduct a supply chain analysis. The results of the study showed the delivery time for the apparel supply chain, from raw material to consumer, was 66 weeks long, 40 weeks of which were spent in warehouses or in transit. The long supply chain resulted in major losses to the industry due to financing the inventory and lack of the right product in the right place at the right time.

The result of this study was the development of the quick response (QR) strategy. QR is a partnership where retailers and suppliers work together to respond quickly to consumer needs by sharing information. Significant changes as a result of the study were the industry adoption of the UPC code used by the grocery industry and a set of standards for electronic data interchange (EDI) between companies. Retailers began installing point of sale (POS) scanning systems to transfer sales information rapidly to distributors and manufacturers. "QR maximizes the profitability of inventory by placing the company's dollars where and when they are needed based on point of sale data plus sales history" (Mullin, 1994). QR incorporates marketing information on promotion, discounts, and forecasts into the manufacturing and distribution plan.

The concept of Supply Chain Management was introduced within the Kenyan public Sector as part of the series of budgetary and financial reforms that were initiated by the NARC Government beginning 2003 in its attempt to modernize the management of the public sector. The Public Procurement and Disposal act (PPDA 2005) was debated and passed in parliament as a means towards efficient management of the public procurement

sector. The act describes the concept supply chain management as an integral part of financial management that seeks to introduce internationally accepted best practice principles, whilst at the same time addressing government's preferential Procurement policy objectives. The act sought to address inefficiencies in Government's historic method of procurement, contract management, inventory/asset control and obsolescence Planning.

Numerous challenges are experienced in this regard due to a lack of the development of a detailed supply chain management implementation plan best suited for development projects. As a result, public sector institutions are not reaping the full rewards associated with an efficient and effective project supply chain management system becoming a major concern as it directly impacts on Government's ability to generate savings. That can be relocated to meet the needs of the communities it serves.

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. This study hence aims at finding out the supply chain management challenges and suggests ways through which the challenges can be addressed to prevent future reoccurrences and gain suggest ways to better project supply chain challenges.

A UNESCO (2005) report on challenges to effective implementation of free primary education introduced in 2003 by the NARC government highlighted procedural challenges as one of the major hindrance 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 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 will manage projects on behalf of the central government and if projects are not handled by the right people with the relevant expertise and skills this projects will either not be completed on time or a lot of wastes are going to be incurred .The study hence seeks to find the gaps in the procedures, where costs cutting can be implemented and better methods of projects supply chain management.

Projects do not last for ever there are for a specific period of time, work is one off, risks involved is high .The devolved government that has been establish will handle projects that will commit huge tax payers money and if no proper training, procedures, management and checks are incorporated then resources put into this projects are likely to go down to waste.

One of the essentials to timely projects is effective supply chain management. This is in form of materials, equipments, consultants, training, goods and services in order to meet the whole scope of the project.

Project team leaders having come up with the work plan of the project need to have proper supply chain management professionals from the onset before the implementation of the plan and processes. These professionals will come up with a procurement plan in line to project activities that will center on what to procure and what can be done in-house, how much to procure -the scales especially if it is continuous, when to procure

Product specifications or a statement of works are normally required early enough if procurement of the goods, works and services can be available as and when required. This is one of issues that supply chain management looks into while coming up with a procurement plan. Specifications also give details to the procurement entity if and where the commodity of purchase will be available. Supply chain professional are required especially if the project has to deal with issues involving contracting and negotiation on behalf of the project administration they are also the right people to evaluate the current market trends. However small these issues may seem they have a huge bearing to successful completion of the project.

Supply chain management is hence an essential tool within a project manager's tool kit. A proper integration of the activities is needed so as to procure materials services, transform them into intermediate goods and final products and finally deliver them to customers. Archiving the effective and efficient completion of projects from the available resources requires a comprehensive set of supply chain management skills and techniques. This person will be able to identify the risks involved that a layman in supply chain management may not be able to identify. He can also avoid Projects delays can be avoided if late placed orders are dealt with swiftly. Suppliers are not normally keen to work with projects from the on off nature on the work that does not result into long term stream of work for the suppliers.

1.2 Problem Statement

It is almost a mandatory requirement to include proper supply chain management plan and procedures in implementation of projects in developed world. This culture has been weak not only in Kenya and in other developing countries.

According to Basuzwa (2003) little is known about project supply chain management. Projects mainly aim to fulfill a certain purpose and are normally in existence for a stipulated period of time. If materials works and services are not available within the required period of time there is definitely going to be delays in the completion of the projects. This will means more and more resources in terms of money, time and

human labour and capital are going to be used this will definitely be beyond what had been planned. The government having introduced a devolved method of provision of services down to the local community at the constituency level has meet challenges mainly in form of effective management of projects to ensure timely completion. Supply chain management is key to effective delivery of projects. The study seeked to look at a broad application to effective supply chain management techniques and processes and how it will aid at effective utilization of resources allocated to projects, areas of improvement to be recommended, stakeholder's involvement and lastly training areas to be recommended.

1.3 Purpose of the Study

The purpose of this study was to analyze factors influencing effective supply chain management in delivery of public development projects in Nakuru town and Baringo Central constituencies.

1.4 Objectives of the Study

The objectives of the study were:

1. To assess the role of supply chain management in timely and cost effective delivery of public funded development projects in Nakuru town and Baringo Central Constituencies.
2. To assess the importance of early identification of a need in projects supply chain management in order to effectively deliver projects need in Nakuru town and Baringo Central Constituencies.
3. To assess the role of early supplier involvement towards effective supply chain management in Nakuru town and Baringo Central Constituencies.
4. To determine the challenges facing the project supply chain management procedures in public funded development projects and advice on areas of improvements in Nakuru town and Baringo Central Constituencies.

1.5 Research Questions

The study sought to answer the following questions.

1. What role does supply chain management play in timely and cost effective delivery of public funded development projects in Nakuru town and Baringo Central Constituencies?
2. What the importance of early identification is of need in projects supply chain management in order to effectively deliver projects need in Nakuru town and Baringo Central Constituencies?
3. Why is it important to involve a supplier early enough in ensuring effective supply chain management in Nakuru town and Baringo Central Constituencies public development projects?
4. What are the challenges of project supply chain management procedures in public funded development projects and what is the advice on areas of improvements in Nakuru town and Baringo Central Constituencies?

1.6 Significance of the Study

This study sought to find out challenges within project supply chain management procedures, role of supply chain management in timely and cost effective delivery of public funded development projects, training areas needed for project officers on projects supply chain management for them to effectively manage supply chain projects and advice county governments on effective supply chain management methods and processes drawing lessons from management of CDF projects. The county government having started operations, this study will seek to advise public officials managing county development projects of the importance of proper supply chain management to projects. Effective supply chain management has a link in transformation for instance in the areas of results based management, performance budgeting, evidences-based policy making. The continued pressure from international donor agencies and the developed countries on the delivery of measurable results/outcomes (World Bank 2006) from donor sponsored projects/programs interventions makes this study particularly important to a developing country like Kenya.

1.7 Limitation of the Study

The difficulties in obtaining information as project staff were reluctant to give information for fear of victimization. The researcher also acknowledges that each constituency has a unique characteristics and generalization of the finding certainly will be a major limiting factor of the study

1.8 Delimitation of the Study

The study was restricted to six donor funded development projects, ten stalled C.D.F projects, data from the national taxpayers association and national C.D.F implementation board reports. District development officers and supply chain management officers from different parts of the two constituencies will also be interviewed being directly involved in project supply chain management.

The data collected and the findings together with the solution recommended will prove vital in the provision of a long lasting solution and can be available for use by other public entities in future.

1.9 Basic Assumptions of the Study

The assumptions made in the study was that the sample will represents the whole population and the data collection instruments were valid and the measurement accurate. Another assumption was that the respondents will answer accurately and truthfully.

1.10 Definition of Significant Terms

Capacity development Refers to a process or the effort of investing in the human capital and institutions so as to strengthen there capacity in planning, implementing and evaluating programmes and policies aimed at benefiting the community.

Constituency development	Refers to projects financed and funds implemented through Kenya's constituency development fund (C.D.F).
Impacts	These are long term highest goal level achievement of a project intervention. This are long term changes, negatives or positive intended or unintended to the target beneficiary.
Supply chain management	This is as a set of approaches utilized to effectively integrate supplies, manufacturers, warehouse and stores so as a product is produced and distributed at the right quantity to the right location and at the right time this is in order to reduce system wide costs while at the same time satisfying service level requirements.
Outcome indicators	This is a means of the direct effect of a programme/project intervention. Example of which include timely completion of projects
Lead time	Time taken from a user raising a requisition and the actual delivery of a need.
Public development Projects	This are development projects that use public assets in any forms of contractual undertakings including public private undertakings
Threshold matrix	Schedule of grid used by public entities to determine the kind of procurement procedures to be used.
Procurement requisition	This are statements that inform the procuring entity of the intended requirement of the user department it also contains detailed specification of specialized items, delivery and completion time required. And the estimated costs and quantity required.
Requests for Proposals	This is normally used in order to obtain proposals to satisfy a requirement of goods and services where the scope of work, technical specifications or characteristics cannot be

precisely determined or described, or are of a complex/specialized technical nature which requires significant input from the supplier.

Invitations to Bid

Used for the procurement of simple, uncomplicated goods of standard and firm specifications or very specifically defined and continuously used services. Based on analysis of quotations, the award is given to a supplier that meets specifications, delivery terms and lowest price.

Sole Source contracting

Is a method of acquisition where a contract is awarded after soliciting and negotiating with only one source

1.11 Organization of the Study

Chapter one commences the study by giving a background against which supply chain management has come to fore. It highlights some of the experiences around the world as well as the Kenyan experience. The chapter follows by stating the problems which culminates into the main objectives of the study with corresponding research questions. The chapter concludes by delineation of the study's limitations and assumptions that allowed the researcher to generalize and make logical findings.

Chapter two of the study examines the existing body of knowledge to create a logical association between the identified variables and establish the probable gaps in knowledge. The chapter as well presents the theoretical background of the study. Lastly a conceptual framework has been illustrated diagrammatically to show the relationship between the independent variable and the dependant variables.

Chapter three explains the research design and method of data analysis which will be used to analyze and interpret information collected from the respondents. The validity and reliability of the research instruments and the operationalisation of the variables is also included.

Chapter four presents the analysis of the data and its interpretation. The analyzed data has been presented in the tables that show the varying trends of the responses. Further the chapter made an interpretation of the findings in the write up prepared to explain the tables.

Chapter five is the final chapter for the report. It describes the summaries of findings and this has further been done in tabular form with regard to objectives of the study. The main findings have been discussed at length with linkage have been discussed at length with linkage made with the past underlying theories. The chapter ends with conclusions of the study and suggests possible recommendations for the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter will systematically identify, locate, and analyse information relating to the study from a historical point of view, the factors that influence effective supply chain management in public projects and the knowledge gap that need to addressed.

The term Supply Chain Management entered the public domain when Keith Oliver a consultant used it while interviewing for financial times in 1982. The term was slow to gain dominance in organizations but however was generally accepted by the mid 1990s. Owing to intense competition in the textile and apparel industry world-wide, leaders in the US apparel industry formed the Crafted With Pride in the USA Council in 1984 (Kurt Salmon Associates, Inc., 1993). In 1985, Kurt Salmon Associates were commissioned to conduct a supply chain analysis. The results of the study showed the delivery time for the apparel supply chain, from raw material to consumer, was 66 weeks long, 40 weeks of which were spent in warehouses or in transit. The long supply chain resulted in major losses to the industry due to financing the inventory and lack of the right product in the right place at the right time.

The result of this study was development of quick response (QR) strategy. QR is a partnership where retailers and suppliers work together to respond more quickly to consumer needs by sharing information. Significant changes as a result of the study were the industry adoption of the UPC code used by the grocery industry and a set of standards for electronic data interchange (EDI) between companies. Retailers began installing point of sale (POS) scanning systems to transfer sales information rapidly to distributors and manufacturers. "QR maximizes the profitability of inventory by placing the company's dollars where and when they are needed based on point of sale data plus sales history" (Mullin, 1994). QR incorporates marketing information on promotion, discounts, and forecasts into the manufacturing and distribution plan.

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Numerous challenges are experienced in this regard due to a lack of the development of a detailed supply chain management implementation plan best suited for development projects. As a result, public sector institutions are not reaping the full rewards associated with an efficient and effective project supply chain management system becoming a major concern as it directly impacts on Government's ability to generate savings. That can be relocated to meet the needs of the communities it serves.

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. This study hence aims at finding out the supply chain management challenges and suggests ways through which the challenges can be addressed to prevent future reoccurrences and gain suggest ways to better project supply chain challenges.

A UNESCO (2005) report on challenges to effective implementation of free primary education introduced in 2003 by the NARC government highlighted procedural challenges as one of the major hindrance 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 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 it self 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.

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Projects do not last for ever there are for a specific period of time, work is one off, risks involved is high .The devolved government that has been establish will handle projects that will commit huge tax payers money and if no proper training, procedures, management and checks are incorporated then resources put into this projects are likely to go down to waste.

One of the essentials to timely projects is effective supply chain management. This is in form of materials, equipments, consultants, training, goods and services in order to meet the whole scope of the project. Project team leaders having come up with the work plan

of the project need to have proper supply chain management professionals from the onset before the implementation of the plan and processes. These professionals will come up with a procurement plan in line to project activities that will center on what to procure and what can be done in-house, how much to procure -the scales especially if it is continuous, when to procure.

Product specifications or a statement of works are normally required early enough if procurement of the goods, works and services can be available as and when required. This is one of issues that supply chain management looks into while coming up with a procurement plan. Specifications also give details to the procurement entity if and where the commodity of purchase will be available. Supply chain professional are required especially if the project has to deal with issues involving contracting and negotiation on behalf of the project administration they are also the right people to evaluate the current market trends. However small these issues may seem they have a huge bearing to successful completion of the project.

2.2 Factors which Aid in the Effective Supply Chains Management in Public Development Projects

Supply Chain in projects varies in complexity and size depending on the magnitude of the project. In order to avoid delays in delivery of projects there is a need for proper demand forecasting, capacity management, scheduling and quality management.

Supply chain is normally long and a client may choose to either deal with one supplier (contractor) or many suppliers to supply the commodities that the project needs.

Swink et al (2010) provides a holistic definition of the project supply chain where he defines it as: Converting raw materials and information into products and services. Consuming the products and services and disposing of the products and services.

This is however of a product concept that includes value adding activity that includes planning, sourcing, make and finally delivery of products and services to meet customers need.

Another useful definition to project supply chain will be by Simchilevi et al (2003) who defines it as a set of approaches utilized to effectively integrate supplies, manufacturers, warehouse and stores so as a product is produced and distributed at the right quantity to the right location and at the right time this is in order to reduce system wide costs whose at the same time satisfying service level requirements.

Proper supply chain aims at minimizing costs in delivery of goods and satisfaction of a project need. In order to achieve this, a system wide approach is needed. Supply chain needs to seek to find a formulae through which inventory can flow so as to avoid cases of overstocking or under stoking and achieve output to the customers specification on time at the least costs. There is a need to ensure reduction in lead time and product is always exactly as specified and delivered on time at costs are reduced through elimination of any activity that does not add value and inventory reduction through holding and handling costs.

A project will normally be involved with very many suppliers. The Heathrow Terminal 5 project involved likely more than 100 key suppliers. Closer home the Nyali Bridge and the Thika Super Highway required at least 25 key suppliers and consultants in ensuring that project resources are delivered as required. Supply chain management and project operational management to be effectively managed and closely work together to ensure project delivery and avoid unnecessary delay in completion is key. Supply chain management working hand in hand with operational management ensures optimum customers by balancing costs, time and quality however the mindset of project managers appears to exclude the principles and objectives of supply chain management Ala –Risku and Kavkainen (2006).

A supply chain is considered linear if materials, products or services are sourced from a single supplier. However this single supplier may be served by several other suppliers or subcontractors hence the processes becomes non linear. A proper professional supply chain department hence handles contractual matters that may be involved in this project both with key suppliers and other suppliers down the tier The department / division will again be involved in handling of the risks especially if it involves a multiple tier of suppliers from lack of proper supplies commitment, poor order control, expected variations in lead time, critical materials damaged during shipment and changes induced by supplier and producers this may have a catastrophic effect on the project.

Another essential part of project supply chain management is logistics management where coordination and collaboration with channel partners is included, both in bound and out bound logistics.

New supply chain management processes introduced later on include e- supply chain management. It includes all customers' right down to the end user or customer, suppliers, customers, suppliers and many other international companies like Dell and Toyota where they are using e-supply chain to source for materials and products in response to customers demand and minimizing both inventory and dealers. This collaborative culture built by working together closely hence managing relationships between customers. Enterprise Resource Planning (ERP) systems integrating all data and processes of an organization into a single unified system in order to achieve integration.

Harmony among all the divisions is needed so as to work closely with each other if total supply chain management is to be released in projects. There is a need for holistic value stream approach to supply chain or a total supply chain management approach in supervising projects In order to have a total supply chain management three cross – functional processes are needed Systems and procedures, Regular reviews Quality and performance management.

Key is total supply chain management is value stream mapping. Basuzwa, Pp: 122 of all the activities required to bring a product through the main flow. The objective of creating a value stream map is to identify every action required to make a specific product or complete a specific process.

Key to proper project delivery understands the impact of supply chain management and its impact on the project and identifies areas to take supply chain to a more strategic level within the project. This can be done through development of a framework for planning and implementation of an integrated supply chain management. The roles and responsibility of supply chain professionals in delivery of project creation of a costs and performance system that provides management with the information needed to effectively deploy, coordinate and control the activities of the supply chain.

Proper supply chain management can be a tactical tool that is applied to the ongoing operational activities. These activities may include customer service, control of in-bound and outbound flow of materials and information and elimination of channels influences, costs and redundancies extending from raw materials, acquisition through manufacturing, distraction, consumption and final return through the channel by way of recycling or disposal.

2.2.1 Supply Chain can Normally be Broken Down into Four Stages

Plan- Balancing of aggregate demand and supply so as a proper cause of action is developed that is within the time scale and demand of a project. It includes the plan activities with a focus on demand. During planning certain issues are covered from access of available resources aggregating and prioritizing on the demand requirements, planning inventory and distributing requirements and assessing production, materials, and capacity for all products and channels planning also encompasses make or buy decision s. long term capacity and resources planning and business planning.

The second step is sourcing where it involves processes that procure the goods and services to meet planned and actual demand. This includes managing sourcing

infrastructure vendor verification and feedback, component engineering, vendor contracts and vendor payments. Make will cover all components that transform goods to a finished state internally so as to meet planned or actual demand.

Delivery is the third step that includes all the processes that provide finished goods and services to meet planned or actual demand. It includes order management, warehouse management, transportation and installation management, in a nutshell it involves delivery infrastructure.

Cross functional teams is an essential component of supply chain management where it is focused on consolidated operations to an integrated supply chain at least internally which brings together people from manufacturing logistics, and customer service to solve problems.

Another way to ensure delivery of projects within the specified time and cost is through an extended supply chain stage which requires organization to develop mutual well defined edge of critical business processes and the operation of multiple channel partners. This process may require intra and inter channel process teams who agree fundamental operational objectives both within the project and between channel members.

Matching of supply with consumption patterns greatly reduces the inventory and hence costs incurred in supply chain to achieve this goal it requires that the manufacturing system along with suppliers, distributors and retailers that participate in the supply pipeline activities become linked through electronic and other means so as to eliminate buffers and queues, reduce lead time and enhance flexibility.

There is a need to do value addition in each stage of the supply chain since this will save on costs and delays in completion of the project. Key to implementation of total integrated supply chain management is training of key staff especially those involved in supply chain management form bidding, tendering floating of quotation early supplier involvement this will aid in improvement of the supply chain process.

The findings of the research will aim at finding methods of greater sharing of information among those tasked with the implementation of supply chain management through use of technology proper use of technology and find out ways through which public and private entities can benefit through public private entities in service delivery.

The Kenyan government having developed public procurement and disposal Act 2005 and public procurement and disposal regulation, public funded projects are still poorly managed and implemented. Previous research showing poorly trained officers involved in handling of projects / funded by the public (public officers, vested interest, corruption and lack of enough information to suppliers on their obligation in the fulfillment of projects needs.

Kenya being a third world country require supporting development aid groups like the World Bank, UN, USAID and ADB, several issues have been pointed out to causing late completion of projects from corruption to lack of enough check points and flouting or rules. The research aims at finding and recommending the best supply chain management procedures. It also seeks to establish a monitoring and evaluation system meant to ensure that public resources have been used efficiently in implementation of projects.

Introduction of certain procedures that seek to work together with suppliers for example early supplier involvement and indemnity to cut down on losses and non performance. It is at this stage that key performance indicators are introduced. It is also essential that procurement is involved in the early stages as possible and proper feedback from suppliers.

Identification of Need and Fulfillment of Need

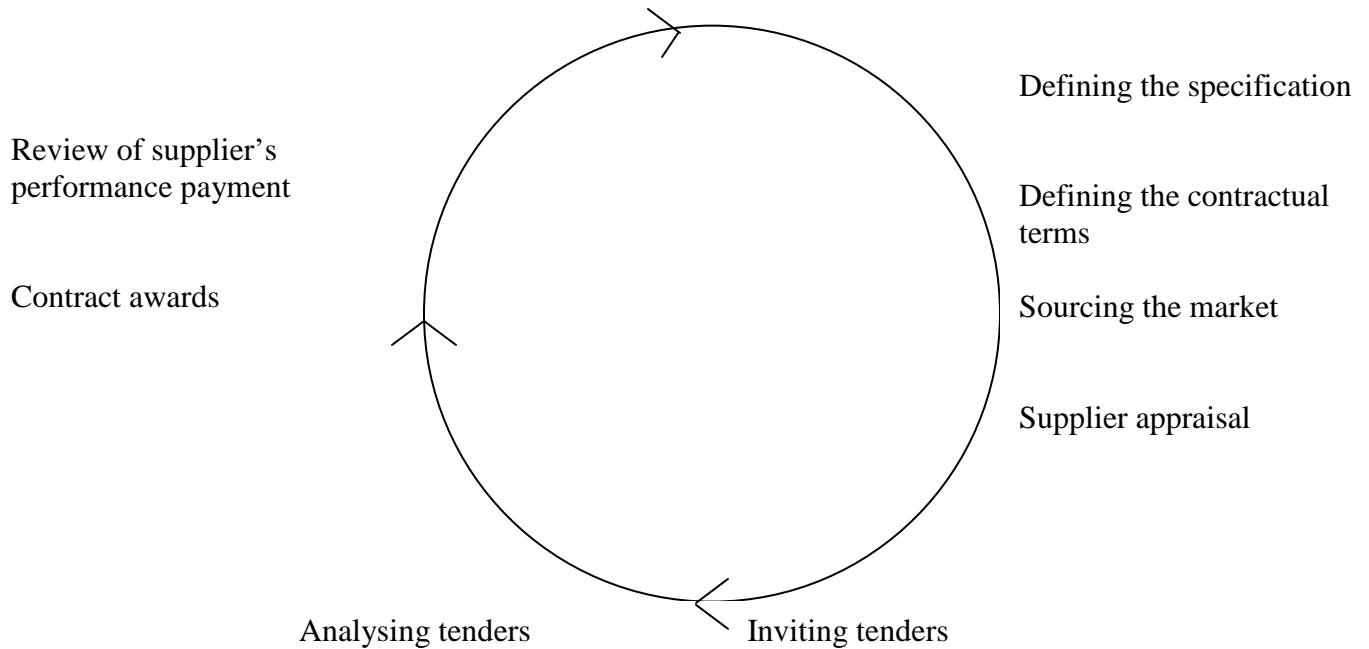


Figure 1: Efficient Project Supply Chain Management Cycle

2.3 Public Development Projects Supply Chain Management Issues that Need to be Addressed Include

It also important that a huge emphasis is placed on public officer's project management skills especially those involved in implementation of projects. The next important component in project management is to develop project management capabilities. This enables them find areas of project reviews that sustain the achievement of project goals.

Properly trained project managers are able to sustain a project momentum issues on the horizon to deal with forecast and projections are well handled where proper supply chain management is existence.

Incorporation of supply chain management enables a project plan, focus and put a strategy from end to end and therefore avoids Adhoc buying it enables a project have a lean approach to orders and needs of specialist users.

Issues dealing with time, quality and costs of materials and production may compromise sustainability issues especially where supply chain management experts are not used. The supply chain management expert will be able to zero in on sustainability related risks and opportunities great care has to be taken into account especially for projects that are to be beneficial to a community for decades to come risks involved in projects are normally high and supply chain management plays a critical role in ensuring that these risks are mitigated at the earliest opportunities possible this is to cut back on the effects that they may have on performance of the project. Certain method of controlling risks is direct physical control. Other methods that can be used to lower risks involve collaboration with suppliers and customers to redesign processes, components and products and having incentives to improve performance of supplier. Vendor managed inventories (VMI) is another method through in which risks can be minimized this reduces the projects stock holding costs.

Success of projects as highlighted by supply management March 2008 issue on the success of Heathrow terminal five project is clear supply chain requirements even in basic terms such as time, quality costs and safety this makes it difficult to get a full picture of the state of a project from the clients or supplier's side and lack of risk management. Culture able to adopt to change from time to time. Risk management requires agility to new occurrence.

Outsourcing non core activities and frequent measuring of supplier's performance and costs avoidance through indirect procurement. There is need for creative thinking and introduction of category management were knowledge and expertise of the category is vital, also vital is flexibility and adapting to processes and creativity is vital. Good awareness of the market while at the same time managing stakeholders needs down the work breakdown structure.

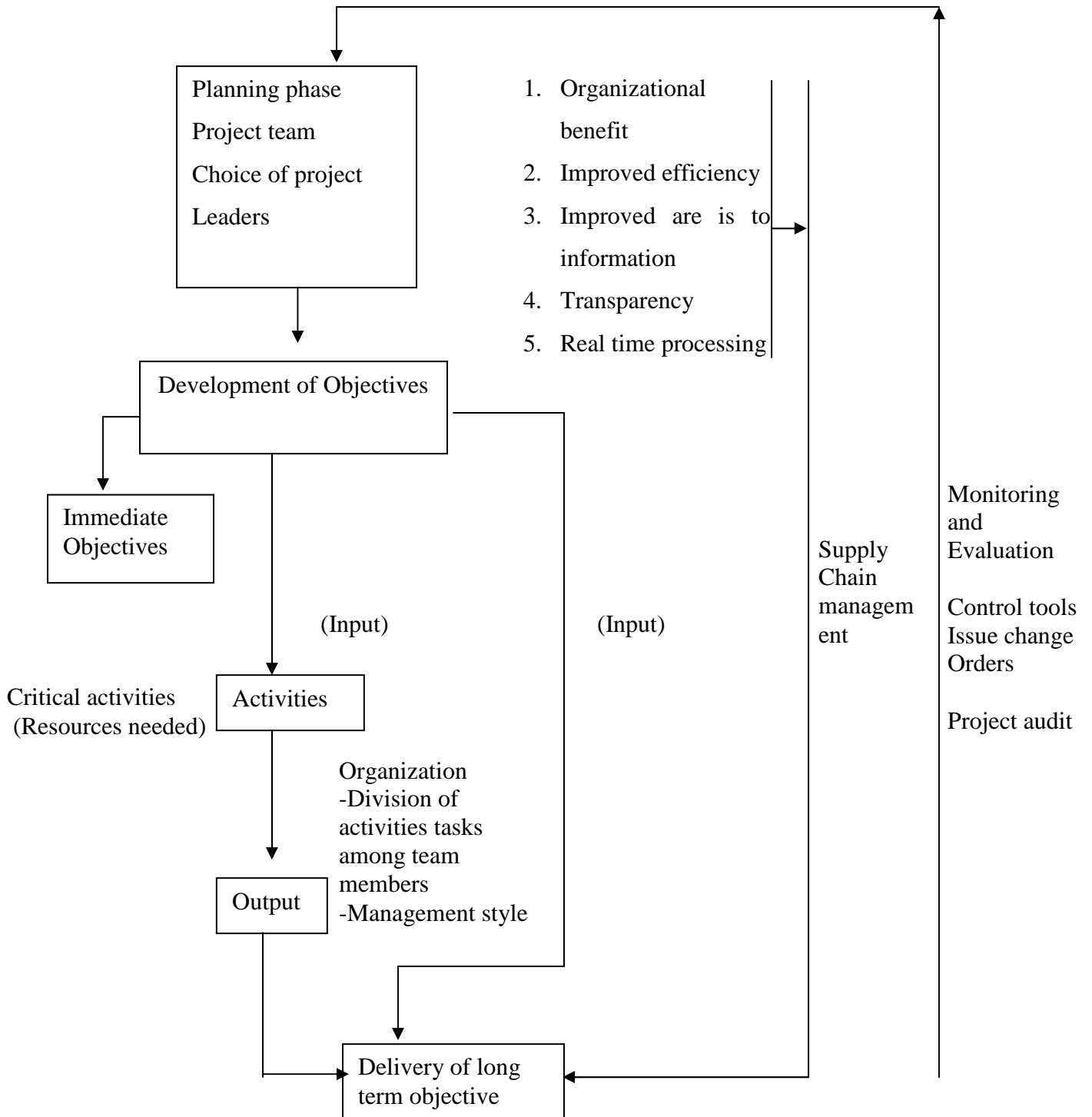


Figure 2: Role of supply chain management in delivery of long time delivery of projects objectives

Projects being huge and complex efficient supply chain management will greatly improve productivity and project management effectiveness and ultimately the delivery of the planned objectives

2.4 Conceptual Framework

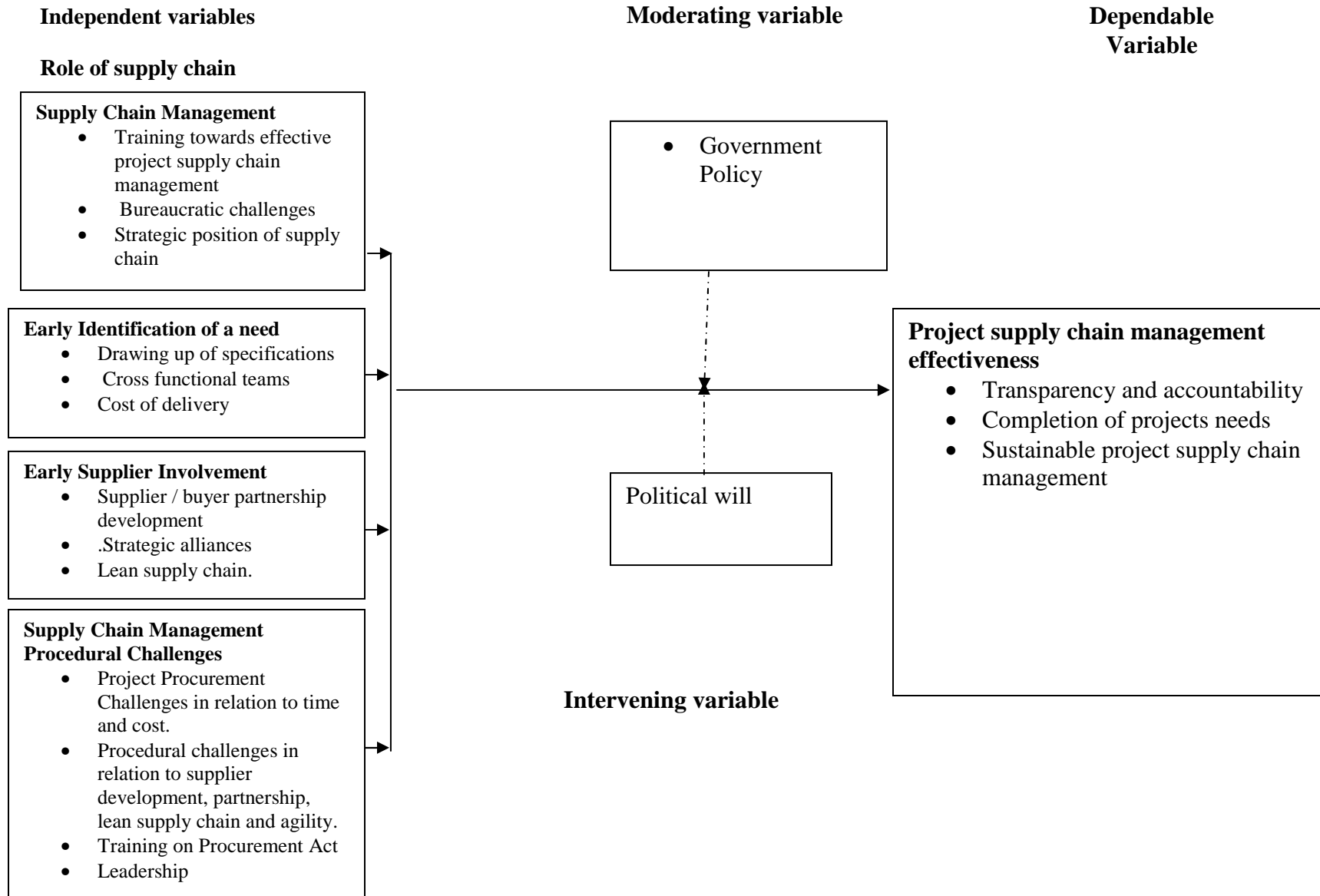


Figure 3: Conceptual Framework

The conceptual framework of the study is given in figure 3 above.

2.5 Knowledge Gap

Literature review showed that there is limited information on effective supply chain management in public development projects. It has also revealed different options that could be considered in order to effectively manage supply chain in public development projects. The researcher was again able to highlight the gap in skills that exists in effective supply chain management in development projects in Nakuru and Baringo county constituencies.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives the research methods, which were used in the study. The chapter covers research design, population, sampling techniques and data collection procedure and data analysis techniques.

3.2 Research Design

A descriptive survey design was used in the study. This type of design enabled the researcher to get both internal and external insights into the study and also help to get more information that will aid in the interpretation of the data. A case study was an effective method of collecting descriptive data regarding characteristics of the population.

A descriptive design study was also efficient method of collecting descriptive data that regard the characteristics of the population. To gather information from the relative large cases by implying simple procedures and cutting down case and maintaining reliability. Based on the findings the researcher will make conclusion and recommendations from the study.

3.3 Target Population

The study focused and targeted on the District Development Officers and project team leaders of various government and donor funded projects. The subjects who were selected provided necessary data for the study. The total number of Purchasing and Supplies Officers, District Development Officers and Project Team leaders who will be targeted for the study will be twenty five from the two constituencies. This number is deemed appropriate since it is at least more than half the number of officers available in the management of public funded projects for response it is important that some respondents are in close proximity to each other so that the researcher can easily collect data being that some certain projects normally work across different departments in government.

3.4 Sampling Techniques and Sample Size

The study used purpose sampling since it allowed the researcher to use cases that the required information will be received from with respect to the objectives of the study. Purposive sampling allowed the researcher to select only those cases that will give information for the study. Cases of the study were handpicked with the help of the procurement officers at the Ministry since they have the relevant information and they particularly knew who the experts in that area are. The total sample size was one hundred. This included twenty four supply chain management officers, twenty four suppliers, ten district development officers, ten officers of the semi autonomous government agencies and ten extension officers attached to the Ministry by development partners.

Table 3.1 Proportionate Sampling Procedure to be used in Data Collection

	Total number of officers involved in development projects	Sampled officers
1. Supply chain management officers	24	24
2. Suppliers	36	24
3. District development officers	10	10
4. Officers in SAGAS	10	20
5. Development partners extension officers.	20	19
Total	100	88

3.5 Data Collection Methods

To collect the data from the respondents a number of data collecting techniques were employed in this study. The researcher submitted questionnaires to be filled by the officers at the purchasing and supplies department and district development office as

advised by the supply chain department. The questionnaire is a primary data collection method (Kothari, 2004).

The questionnaires contained both open ended and close ended items that enabled the respondents to give their direct answers. It allowed the respondents to leave out the questions that they are not able to answer. Closed ended questions allowed the researcher to find out if the officers have a deeper and clear understanding on supply chain management in projects. The closed ended questions ensured the researcher captured particular variables of the study problems. Open ended questions allowed the researcher to get a more complete picture of respondents feeling and attitudes (Kothari, 2004).

3.5.1 Validity of Instruments

Validity is defined as the accuracy and the meaningfulness of the inferences based on the research result (Mugenda and Mugenda 2002). This basically has to do with how accurate the data is. The researcher used content validity in order to measure if the data collected will be valid. The researcher identified the content that needs to be measured in effective supply chain management through the use of professionals and experts in supply chain management.

3.5.2 Reliability of Instruments

Reliability is defined as the measure of the degree to which a research instrument yields consistent results or the data after repeated trials (Mugenda and Mugenda 2002). The researcher used coefficient correlation computed by split half technique. The test scores were divided into two parts of even and odd numbers randomly selected and correlated using the Spearman Brown proficiency formulae. A reliability coefficient of 0.8 was obtained and was regarded as adequate.

3.6 Data Analysis

Raw data collected from the field is usually unorganized. This data needs to be compiled and cleaned for potential errors. The researcher needs to analyze data in order to analyze research questions. The next step involves questionnaires coding before being entered into a computer. Descriptive statistical analysis of quantitative data was made possible through computer software known as (Statistical Package for Social Sciences) that will be used to measure central tendencies and average of respondents. In addition measures of dispersion were used. This enabled the researcher to draw conclusions on data variability using simple standard of deviation. The qualitative data in the field was expressed in write ups so as to enrich the descriptive analysis in the quantitative methods.

3.7 Ethical Considerations

As an initial step to research effort the researcher obtained a transmittal letter from the University. In addition the researcher assured anonymity and confidential treatment of responses to protect the credibility of the respondent. This was done through questionnaire coding.

3.8 Operational Definition of Variables

The Operational Definition of Variables is elaborated in Table 3.2.

Table 3.2: Operational Definition of Variables

Research Objectives	Independent Variable	Indictors	Measures	Measurement Scale	Tools of Analysis
To assess Role of supply chain management in cost effective delivery of projects.	Level of stakeholder involvement in project activities. Procurement methods in place.	Timely delivery of project needs. Delivery of project rules within the stipulated budget.	Perceived level of performance indicators and utilization of costs variance reports. Perceived definition of project outputs and outcomes from monitoring and evaluation.	Nominal Ordinal	Means Percentages
To assess the importance of early identification of a need in projects supply chain management in order to effectively deliver projects need in Nakuru town	Technical skills training of project supply chain management and project management skills	Project supply chains management training sessions. Project committee education background Observable extent to project supply chain management skills. Performance of	Amount of expenditure allocated to training of individual involved in supply chain management ° Perceived levels of project supply chain management competences.	Ratio Ordinal	Means Percentages

		projects.			
To assess the role of early supplier involvement towards effective supply chain management in Nakuru town and Baringo Central Constituencies.	Best strategy to implementation of proofed supply chain management. Supplier buyer partnership development. Establishment of cross functional teams.	Buyer / supplier partnerships in place. °Perceived level of openness and grant to public scrutiny. Problems as at present	Areas where time and costs can be done. Benchmark against top of class constituency	Ordinal Ratio Nominal	Means Percentages
To determine the challenges facing the project supply chain management procedures in public funded development projects and advice on areas of improvements in Nakuru town and Baringo Central Constituencies.	Delays through procedures Elimination of suppliers partnership	Procedural challenges Policies in place.	Procedural gaps	Ratio Nominal	Means Percentages

	Dependable variables Transparency and accountability Timely and cost effective delivery Sustainable projects delivery			Ratio Nominal	Means Percentages
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CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the Data analysis, presentation of findings and interpretations following objectives of the study.

4.2 Response Rate

A total of 88 respondents were issued with questionnaires and 80 respondents returned the questionnaires. This number is deemed appropriate since it is at least more than half the number of officers available in the management of public funded projects in the two constituencies. A response rate of 86% was obtained in the study which is considered by Mugenda and Mugenda (1999) as adequate to make generalizations.

The research data was collected from a total of 16 different sources drawn from district development offices, semi autonomous government agencies and government ministries. These included KEMSA (Global Fund, Nakuru branch), Ministry of State for Provincial Administration (Rift valley, Itabua), Kamathatha Water Project (Gilgil), and Ministry of Planning and Devolution (Rural, Municipality/Central). Others are District Development Office (Central, Nakuru West), Planning office (Nakuru Municipality), Nakuru Rural Group (Nakuru, Kangaru), Technical Evaluation Committee (procurement, Baringo) and Gitare Water Project (Gilgil, Karunga). The other sources of research data were Rigongo Primary School (Bahati), Kamiruri Water Project (Bahati), Ikiro Water Project (Bahati) and Site Advisory Committee (for Strengthening protected areas in Afromontane hotspots of Kenya project in free area, Katrek, Baringo township, Nakuru Municipality and Ileho). In addition are School Management Committee (Eldama ravine, East Baringo), Spring Protection Committee (Nakuru East, West Baringo) and Reproductive Health Committee.

The above PMCs are drawn from the sectors of water (36.8%), health (31.6 %), infrastructure (10.5%), Procurement Department (10.5%), education (5.3%) and Environment/Biodiversity Conservation (5.3%). Most of the respondents or 9 (47%) were members of PMCs, 4 (21%) were secretaries while 2 (10%) were Project Extension

Officers. The remaining 4 respondents included a procurement assistant, a procurement/supply chain management officer, a clerical officer and a planning assistant each represented by 5%.

4.3 Role of Supply Chain Management in Timely and Cost Effective Delivery of Public Funded Development Projects

The role of supply chain management consists of cost effective delivery of public funded development projects, steps taken by supply chain management towards lean supply, supply chain tiering, project status and level of satisfaction on progress of supply chain management.

4.3.1 Supply Chain Management in Cost Effective Delivery of Public Funded Development Projects

76 respondents (94.7%) indicated that supply chain management was at the strategic level of project delivery as compared to only 1 respondent or 5.3% who disagreed. The implication of this is that all the projects in the study have taken off and are ongoing or complete. They are therefore relevant for the study and are able to provide the required data. In addition, all the respondents indicated that supply chain management is the function targeted by their project management teams. It can be deduced that due to its components of M&E and financial management, supply chain management is an essential tool in project management and is key to effective delivery of projects.

Table 4.1 shows that 41 respondents (57.9%) indicated that the contribution of supply chain management to cost cutting was mainly by awarding tenders to lowest bidders and to ensure timely delivery. This included contracting cost efficient distributors for supply. It can be deduced that effective supply chain management is one of the essentials to timely projects by planning what and when to procure thus having a huge bearing to successful completion of the project. Other respondents chose not to overstock to minimize warehousing costs (15.8%) and to promote outsourcing of business development services or BDS through employing experts in given fields hence avoiding

wastage (15.8%). The other respondents chose to implement supplier arrangement by reducing total cost of ownership or TCO (10.5%).

It can be deduced that proper supply chain management aims at minimizing costs in delivery of goods and satisfaction of a project need by awarding tenders to lowest bidders and by achieving output to the customer’s specification on time and at the least costs by avoiding cases of overstocking or under stoking.

Table 4.1: Contribution of Supply Chain Management to Cost Cutting in Project Delivery

Table 4.1 shows contribution of supply chain management to cost cutting in project delivery.

Courses Attended	Frequency	Percentage
Awarding tenders to lowest bidders and ensure timely delivery	11	57.9
No overstocking to minimize warehousing costs	3	15.8
Promote outsourcing of BDS and avoid wastage	3	15.8
Implement supplier arrangement by reducing TCO	2	10.5
Total	19	100.0

Table 4.1 shows 57.9% of cost cutting in supply chain management is through award of tenders to the lowest bidder while 10.5% is implementation of supplier management by reducing total costs of ownership.

4.4 Training Areas Needed to Effectively Manage Supply Chains in Projects

From the data collected from the project management committees it was evident that 68.4% of the respondents had university degrees and 52.6% of the respondents had also

attended at least one training course that enlightens on project management. It was however to be conducted especially on areas dealing with cost leadership and better procurement methods.

4.4.1 Highest Level of Education

Table 4.2 below illustrates that most of the respondents attained university education (68.4%) followed by Post/tertiary secondary (21.1%) while only (10.5% were of the level of secondary. Positions in supply chain management in public development projects include some technical components and require persons who can easily grasp financial concepts. Therefore a higher level of education is a pre-requisite and an advantage for effective supply chain management.

Table 4.2: Highest Level of Education

Table 4.2 shows the level of education attained by each respondent.

Level of Education	Frequency	Percentage
University	13	68.1
Post / tertiary secondary	2	21.1
Secondary	2	10.5
Total	19	100.0

Table 4.2 shows 68.4% of the interview had university level of education, while a less percentage of 10.5% had

4.4.2 Number of Training Courses Attended

As shown in Table 4.3, majority of the respondents (52.6%) have attended only one training course in supply chain management while 4 respondents or 21.1% have attended 2 courses. Two respondents each or 10.5 % have attended 3 or more than 3 courses respectively. Only one respondent has not attended any training course. These results show that despite the contribution of training to supply chain management for timely and cost effective delivery of public funded development projects being known, only a few

personnel attend these courses. This may be as a result of limited resources being allocated towards capacity development.

Table 4.3: Training Courses Attended

Table 4.3 shows the training courses attended by respondents.

Courses Attended	Frequency	Percentage
1	10	52.6
2	4	21.1
3	2	10.5
>3	2	10.5
0	1	5.3
Total	19	100.0

Table 4.3 shows that 52.6% had attended training courses and 5.3% had not attended any training course.

4.4.3 Training Needs Assessment, Relevance of Training and Components of Training

A total of 63 respondents (78.9 %) revealed that there was training needs assessment prior to the training. Only 3 (15.8%) denied the existence of training needs assessment while 5.3 % of the respondents had no knowledge of the same. This indicates that stakeholders attached importance to offering training where and when it is needed the most. When asked about relevance of training, all the respondents were of agreement that training in daily project implementation was relevant. This is represented by 63.2% who chose very relevant and 36.8% who chose relevant. It can be deduced that training plays an important role in supply chain management for timely and cost effective delivery of public funded development projects. Implementation of supply chain management therefore requires training of key staff especially those involved in supply chain management from bidding, tendering, floating of quotation and early supplier involvement.

71 respondents (89.5%) indicated that the training they underwent included components of monitoring and evaluation (M&E) while only 10.5% said that the training did not include this component. These results show that M&E is a strong component of the training on supply chain management due to the importance attached to timely and cost effective delivery of public funded development projects. Similarly, on supply chain component in training, all respondents indicated that it was the strongest component in the training that they underwent. This is because supply chain management is the core function and responsibility in their current positions and thus the training is vital for timely and cost effective delivery of public funded development projects.

4.5 Steps Taken by Supply Chain Management Towards Effective Supply Chain Management

When asked about the steps taken by supply chain management towards lean supply, 8 or 42.1% of the respondents chose cost effective procurement, 36.8% chose value chain analysis and development of procedures, 15.8% chose enhanced supplier relationship by engaging reputable suppliers who deliver without follow-up and giving friendly specifications to all suppliers. Only 1 respondent or 5.3% chose involvement of supply chain staff in identification. Table 4.4 illustrates these results. While cost effective procurement includes dealing with prequalified suppliers and using restrictive tendering in certain circumstances and expediting orders, it also ensures that requirements are bought when they are needed to avoid holding excess stock hence deterioration and costs to the firm. Value chain analysis and development of procedures ensures that correct and best practices are adopted in supply chain management hence assisting the organization save costs and deliver projects.

Table 4.4: Steps Taken by Supply Chain Management towards Lean Supply

Table 4.4 shows steps taken by supply chain management towards lean supply.

Steps taken	Frequency	Percentage
Cost effective procurement	8	42.1
Value chain analysis and development of procedures	7	36.8
Enhanced supplier relationship	3	15.8
Involvement of supply chain staff in identification	1	5.3
Total	19	100.0

Table 4.4 shows that 42.1% had adapted cost effective procurement value chain while 5.3% had adopted involvement of supply chain staff in identification.

4.5.1 Supply Chain Tiering, Project Status and Level of Satisfaction on Progress of Supply Chain Management

When asked about supply chain tiering, 57.9% of the respondents indicated that they considered using supply chain tiering as a method of cutting down expenses to deal with suppliers while 42.1% of the respondents disagreed. The respondents who supported tiering indicated that not tiering caused the organization to incur production costs of the items they consume. Tiering also eliminates unnecessary middlemen who only elongate supply chains by instead dealing with those relevant to performance or experts. On the other hand, those against it said that similar significant benefits exist for organizations coordinating and collaborating across multiple supply chain partners or tiers. This includes cost savings, revenue enhancement, responsiveness and redesigning. Tiering is also considered a bit strenuous especially at locational level due to difficulty in implementation. Instead, prequalification procedures and the quotation process are considered ideal.

Majority of the respondents (89.5%) indicated that the status of their projects was ongoing while only 10.5% of the respondents said that their projects had been completed. It can be deduced that the projects are relevant to the study since they can provide data and information which is still helpful. On the level of satisfaction on progress of supply chain performance and effectiveness, 68.4% of the respondents were satisfied, 21.1% were neither satisfied nor unsatisfied while only 10.5% of the respondents were very satisfied. These results indicate that due to adequate training, most respondents are able to determine the progress of supply chain performance. Alternatively, those who may have received inadequate training in supply chain management may seek to justify and protect their positions by indicating their satisfaction on progress of supply chain performance.

4.5.2 Importance of Early Identification of a Need in Projects Supply Chain Management in Order to Effectively Deliver Projects Need

Importance of early identification of a need in projects supply chain management is explained by implementation of supply chain development in projects, person involved in supply chain management and methods used for sourcing and involvement of users in sourcing.

4.5.3 Implementation of Supply Chain Development in Projects

Table 4.5 covers specific questions posed to respondents on implementation of Supply Chain Development in Projects. The range was 'strongly agree' extent (5) to 'strongly disagree' (1). The scores of strongly agree and agree extent have been taken to present a variable which had an impact to a large extent (L.E) equivalent to a mean score of 3.5 to 5.0 on the continuous Likert scale; ($3.5 \leq L.E. < 5.0$). The scores of moderate extent have been taken to represent a variable that had an impact to a moderate extent (M.E.) equivalent to a mean score of 2.5 to 3.4 on the continuous Likert scale ($2.5 \leq M.E. < 3.4$). The score both of disagree and strongly agree have been taken to represent a variable which had an impact to a small extent (S.E.) equivalent to a mean score of 0 to 2.4 on a

continuous Likert scale; ($0 \leq L.E. < 2.4$). A standard deviation of >1.5 implies a significant difference on the impact of the variable among respondents. Measure of central tendency (mean) and a measure of variation (Std. deviation) was used to analyse the data.

Table 4.5: Responses on Implementation of Supply Chain Development in Projects

Table 4.5 shows responses of implementation of supply chain development in projects.

Responses on Supply Chain in Projects	N	Mean	Std. Deviation
Utilization of knowledge for project deliver	19	2.00	1.155
Use of suppliers to aid project implementation	19	2.05	0.848
Training for project fulfilled PMC needs	19	2.00	1.000
Selection of committees on delivery of results	19	2.26	1.240
Supply chain a hindrance to project delivery	19	2.95	1.393

Table 4.5 shows a mean of 2.00 and a standard deviation of 1.55 on implementation of effective supply chain development in projects. Majority of the respondents were in favor of the use of suppliers in the supply of deliverables that aid in project implementation. This was represented by a standard deviation of 0.848. This result conforms with early involvement of suppliers to aid in delivery of projects. However, respondents had divergent views and seemed not to agree with the statement that supply chain is a hindrance to project delivery as represented by a standard deviation of 1.393. Most respondents therefore have a high regard for supply chain management and do not regard it as a hindrance to project delivery.

4.5.4 Person (s) Involved in Supply Chain Management

Table 4.6 illustrates that the person (s) responsible for supply chain management were mainly the community PMC and the supplier (57.9%). The former also includes CDF fund committees while the later also comprises of contracted agencies registered with government departments. Other respondents indicated that the person responsible was a procurement manager or a supply chain specialist (32.5%), project supervisor (5.3%) and finance manager (5.3%). These results are due to the large number of organizations in the study which are mainly comprised of PMCs as far as project delivery is concerned.

Table 4.6: Person (s) Involved in Supply Chain Management

Table 4.6 shows persons involved in supply chain management

Person (s) involved	Frequency	Percentage
Community PMC and the Supplier	11	57.9
Procurement manager / supply chain specialist	6	32.5
Project supervisor	1	5.3
Finance manager	1	5.3
Total	19	100.0

Table 4.6 shows that 57.9% of the people were involved in Supply Chain Management and financial manager was 5.3%.

4.5.5 Methods Used for Sourcing and Involvement of Users in Sourcing

When asked about their awareness of the methods used for sourcing, majority of the respondents indicated their knowledge of tendering/quotations (57.9%) followed by general procurement procedures (26.3%) and single sourcing or restrictive tendering (15.8%). These results are shown in Table 4.7 below. Due to the basic knowledge in procurement possessed by respondents, it is expected that they are aware of the most common methods of procurement such as tendering, quotations and general procurement procedures. In addition, all the respondents indicated that users are properly involved in

sourcing for the goods, works and services. The reason for this is because the need for procurement in these organizations mostly originates from the user department hence their involvement in sourcing for goods, works and services.

Table 4.7: Methods Used for Sourcing

Table 4.7 shows methods used for sourcing.

Method	Frequency	Percentage
Open tendering / quotations	11	57.9
Procurement procedures	5	26.3
Single sourcing / restrictive tendering	3	15.8
Total	19	100.0

Table 4.7 shows the percentage use of the different methods for sourcing open tendering being 57.9 and single sourcing 15.8%.

4.6 Role of Early Supplier Involvement towards Effective Supply Chain Management

Role of early supplier involvement towards effective supply chain management is explained by early supplier’s involvement for timely project completion, experience in handling suppliers, emergency response to demand and steps taken by organizations to assist in development of suppliers.

4.6.1 Early Suppliers Involvement for Timely Project Completion

Table 4.8 illustrates that 15 respondents (78.9%) thought the area where early suppliers involvement will aid towards timely project completion and satisfaction was by good project design, production and specification levels. Only 4 respondents or 21.1% chose prequalification of qualified suppliers. It can be deduced that early supplier involvement will aid towards timely project completion and satisfaction due to the development of specifications and identification of high quality but cost effective materials and

components. Early supplier involvement usually cuts down on losses and non performance and also allows proper feedback from suppliers.

Table 4.8: Suppliers Involvement for Timely Project Completion

Table 4.8 shows suppliers involvement for timely project completion.

Supplier Involvement	Frequency	Percentage
Good design, production and specification levels	15	78.9
Prequalification of qualified suppliers	4	21.1
Total	19	100.0

Table 4.8 shows the different stages of suppliers involvement throughout project life cycle through design, production and specification levels at 78.9% and prequalification of qualified suppliers at 21.1%.

4.6.2 Experience in Handling Suppliers

Table 4.9 illustrates that the experience of most respondents (52.6%) in handling suppliers was by goods or services not being delivered within specified time lines or specifications. This was characterized by inconsistencies and not following the right procedures. However, some respondents (21.1%) experienced good and reliable relationships by being handled well and informing suppliers about requirements in time. Other respondents indicated that their experience was by clients creating standards early by use of store ledgers such as S13 (15.8%) and also by complicated relationships due to lengthy procedures (10.5%). UNESCO (2005) identified challenges to effective implementation of free primary education to be procedural challenges and one of the major hindrances to implementation. These procedural challenges involve lengthy supply chain procedures that have a direct effect on cost and delivery time.

When asked about the origin of specifications of goods, works and services to be delivered, a large majority of the respondents (89.5%) indicated the user department. The other two respondents (5.3%) chose supplier on one hand and the selected procurement

officers by the government department on the other. It can be deduced that the need for procurement in most organizations originates mostly from the user department hence their involvement in sourcing for goods, works and services.

Table 4.9: Experience in Handling Suppliers

Table 4.9 shows the experience of handling suppliers.

Experience	Frequency	Percentage
Not delivering within specified time lines	10	52.6
Good and reliable relationships	4	21.1
Client creates standards early	3	15.8
Complicated due to lengthy procedures	2	10.5
Total	19	100.0

Table 4.9 shows experience of project officers in handling suppliers, through no delivery within specified timeliness at 52.6% and complications due to lengthy procedures and 10.5%.

4.6.3 Emergency Response to Demand

When asked about whether they had any plan on emergency response to demand, the respondents listed the following; standby list of reliable suppliers and act on need basis (52.6%), emergency budget with restricted tendering (26.3%) and Rapid response initiative or RRI (21.1%). These results are shown in table 4.10 below. These results reveal that it is basically prudent that most organizations will seek to plug shortfalls in supply by requesting for goods directly from known suppliers or by modifying other forms of procurement. It is also known that only a limited number of organizations in the study possess emergency budgets.

Table 4.10: Emergency Response to Demand

Table 4.10 shows the rate of emergency response to demand.

Emergency Response	Frequency	Percentage
Standby list of reliable suppliers and act on need basis	10	52.6
Emergency budget with restricted tendering	5	26.3
Rapid response initiative (RRI)	4	21.1
Total	19	100.0

Table 4.10 shows Emergency Response to Demand by a standby list of reliable suppliers and act on need basis at 52.6% and emergency budget with restricted tendering (RRI) at 21.1%.

4.6.4 Steps taken by Organizations to Assist in Development of Suppliers

Table 4.11 shows that most of the respondents (73.7%) indicated that their organizations were involved in training suppliers and bidders on procurement procedures and regulations while other respondents (21.1%) ensured prompt payment and encouraged new suppliers. Only 1 respondent (5.3%) indicated that the organization offered financial management training for the tender committee. These results indicate that for organizations to receive deliverables as required, they need to train suppliers and bidders on procurement procedures and regulations. The same is also a requirement of procurement regulations as captured the PPOA Act and regulations.

Table 4.11: Steps Taken to Assist in Development of Suppliers

Table 4.11 shows steps taken to assist in development of suppliers.

Steps taken	Frequency	Percentage
Training suppliers and bidders	14	73.7
Paying promptly and encouraging new supplies	4	21.1
Financial management training for tender committee	1	5.3
Total	19	100%

Table 4.11 shows Steps Taken to Assist in Development of Suppliers through training of suppliers and bidders on procurement regulation at 73.7% financial management training to tender committee at 5.3%.

4.7 Challenges Facing the Project Supply Chain Management Procedures in Public Funded Development Projects and Advice on Areas of Improvements

Challenges facing the project supply chain management procedures include government influence on project performance, influence of political interest and manipulation, Ad hoc placement of requisition by use department and ways of improving performance and supply chain which aid improvement of performance.

4.8 Government Influence on Project Performance

As illustrated by Table 4.12, most respondents (52.6%) were of the opinion that the government influenced project performance at constituency level through implementation of law and engaging professionals followed by engaging the community in project identification and implementation by developing constituency tender committees (21.1%) and training of stakeholders (5.3%). Government efforts include ensuring compliance of PPOA Act through capacity development, specification development involving a team of suppliers, users and technical persons and through sealing all corruption loopholes. The rest of the respondents indicated that government influence was through prequalifying suppliers with full technical, financial and human resource capabilities and giving preference to local contractors (10.5% each). In Kenya, public funded projects are still poorly managed and implemented. Previous research shows poorly trained officers involved in handling of projects funded by the public. The result is vested interest, corruption and lack of enough information to suppliers on their obligation in the fulfillment of projects needs.

Table 4.12: Government Influence on Project Performance

Table 4.12 shows government influence on project performance.

Government Influence	Frequency	Percentage
Implementation of law and engage professionals	10	52.6
Engage community in project identification and implementation	4	21.1
Prequalifying suppliers with capabilities	2	10.5
Giving preference to local contractors	2	10.5
Training of stakeholders	1	5.3
Total	19	100.0

Table 4.12 shows government influence on project performance at 52.6% and training of stakeholders at 5.3%.

4.8.1 Influence of Political Interest and Manipulation

Most respondents (52.6%) indicated that the influence of political interest and manipulation on the outcome of project supply chain management was present followed by those who didn't know whether this influence existed. Only 5.5% did not agree to the proposition that political interest and manipulation influenced the outcome of project supply chain management. These results relate to circumstances surrounding most public projects which feature input from politicians. Table 4.13 describes the mode of this influence to include preference to local suppliers with poor products (57.9%). This means that politicians prefer to give contracts to their cronies thereby raising conflict of interest. Another way by which political interest and manipulation occurs is through streamlining complex ad hoc procurement procedures (26.3%) and poor follow-up of regulations, policies and sanctions (15.8%).

Table 4.13: Influence of Political Interest and Manipulation

Table 4.13 shows influence of political interests and manipulation.

Influence	Frequency	Percentage
Preference to local suppliers with poor products	11	57.9
Streamline complex ad hoc procurement procedures	5	26.3
Poor follow-up of regulations, policies and sanctions	3	15.8
Total	19	100.0

Table 4.13 shows the influence of political interest and manipulation and there effects on project performance of 57.9 and poor follow up of regulations and policies at 125.85.

4.8.2 Opinion on Ad hoc Placement of Requisition by Use Department

Most of the respondents (31.6%) were of the opinion that Ad hoc requisition by use, department should be flexible with reliable suppliers and advance communication followed by that such requisition should only be for emergency works and take shortest time (26.3%). Another (26.3%) said that Ad hoc placement of requisition by the user department was characterized by disagreements over specifications while 15.8% of the respondents indicated that there was need to seek clarification for such requisitions. Supply chain management enables a project plan, focus and strategy from end to end hence avoids Ad hoc buying and enables a project have a lean approach to orders and needs of specialist users. This is illustrated by table 4.14 below.

Table 4.14: Opinion on Adhoc Placement of Requisition by Use Department

Table 4.14 shows opinion of ad hoc placement of requisitions by user departments.

Opinion	Frequency	Percentage
Flexible with reliable suppliers and advance communication	6	31.6
Only for emergency works and to take shortest time	5	26.3
Characterized by disagreements over specifications	5	26.3
Seek clarification for request	3	15.8
Total	19	100.0

Table 4.14 shows the opinion of user departments and PMC members on Ad hoc Placement of Requisition by Use Department at 31.6% and seeking clarification for request at 15.8%.

4.8.3 Ways of Improving Performance and Supply Chain Aiding Improvement of Performance

All the respondents agreed that there are ways of improving performance of supply chain management. On how supply chain can aid improvement of performance, table 4.15 illustrates that 57.9% of the respondents said it was through performance measurement systems and internal company optimization or cost reduction. This includes reviewing procedures to improve efficiency hence quality services. It also includes involving supply chain management in project identification, conception and guidance to attain objectives in a cost efficient manner. This is achieved through having a work plan before the procurement process hence benefit optimization. 26.3% chose engaging pre-qualified or competent suppliers while 15.8% chose training PMC and stakeholders.

Table 4.15: How Supply Chain Can Aid Improved Performance

Table 4.15 shows how supply chain and improved performance.

Supply Chain Can Aid	Frequency	Percentage
Performance measurement systems and internal company optimization	11	57.9
Engage Pre-qualified / competent suppliers	5	26.3
Training PMC and stakeholders	3	15.8
Total	19	100.0

Table 4.15 above shows the role supply chain management can play in aiding improved performance measurement systems 57.9% and training of project management committees and stakeholders at 15.8%.

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS AND
RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, discussions, conclusions and recommendations for further study.

Summary of Findings

It emerged that 42% of the project management committees still use ineffective methods of supply chain management hence delays. In addition, 47.4% of the delays were caused mainly by bureaucracy and the time consuming methods of procurement. Although different trainings were conducted training on cost effectiveness and timely delivery of project was hardly conducted. Trainings done did not focus on these areas. Stockholder involvement in project success is still at a minimal level.

Although 78.9% of suppliers were involved at the early stage of design and specification, they had major complains hence citing frequent changes in contracts and specification, cancellation of contracts, frequent delays in signing contracts and project completion. About 52.6% of the interviewees felt that implementation of the law and engagement of professionals would aid to better procurement laws. Procedures lead to delays since it is difficult to implement cost saving strategies using some of the procedures. For example, early supplier involvement, lean supply chain management and just in time delivery. These methods lead to cost savings but are yet difficult to implement using existing procedures.

Findings on the Role of Supply Chain Management in Timely and Cost Effective Delivery of Public Funded Development Projects

The findings indicated that majority of the respondents (94.7%) were of the opinion that that supply chain management was at the strategic level of project delivery as compared to only 1 respondent or 5.3% who disagreed. All the respondents indicated that supply chain management is the function targeted by their project management teams. Most

respondents (57.9%) indicated that the contribution of supply chain management to cost cutting was mainly by awarding tenders to lowest bidders and to ensure timely delivery.

When asked about the steps taken by supply chain management towards lean supply, 8 or 42.1% of the respondents chose cost effective procurement while 36.8% chose value chain analysis and development of procedures. When asked about supply chain tiering, 57.9% of the respondents indicated that they considered using supply chain tiering as a method of cutting down expenses to deal with suppliers while 42.1% of the respondents disagreed. Majority of the respondents (89.5%) indicated that the status of their projects was ongoing while only 10.5% of the respondents said that their projects had been completed. On the level of satisfaction on progress of supply chain performance and effectiveness, 68.4% of the respondents were satisfied, 21.1% were neither satisfied nor unsatisfied while only 10.5% of the respondents were very satisfied.

Importance of Early Identification of a Need in Projects Supply Chain Management in Order to Effectively Deliver Projects Need

The findings indicate that majority of the respondents were in favor of the use of suppliers in the supply of deliverables that aid in implementation of supply chain development in projects. This was represented by a standard deviation of 0.848. However, respondents had divergent views and seemed not to agree with the statement that supply chain is a hindrance to project delivery as represented by a standard deviation of 1.393.

The person responsible for supply chain management was found to be the community PMC and the supplier (57.9%) and a procurement manager or a supply chain specialist represented by 32.5%. On the methods used for sourcing, it was found that majority of the respondents indicated their knowledge of tendering/quotations (57.9%) followed by general procurement procedures (26.3%).

Role of Early Supplier Involvement towards Effective Supply Chain Management in Public Development Projects

It was found that 78 respondents (78.9%) thought the area where early suppliers involvement will aid towards timely project completion and satisfaction was by good project design, production and specification levels. Only 4 respondents or 21.1% chose prequalification of qualified suppliers. It was also found that the experience of most respondents (52.6%) in handling suppliers was by goods or services not being delivered within specified time lines or specifications. On the origin of specifications of goods, works and services to be delivered, it was found that a large majority of the respondents (89.5%) indicated the user department.

It was found that the main plan on emergency response to demand possessed by respondents standby list of reliable suppliers and act on need basis (10 or 52.6%), emergency budget with restricted tendering (26.3%) and Rapid response initiative or RRI (21.1%). On the steps taken by organizations to assist in development of suppliers, I was found that most of the respondents (73.7%) indicated that their organizations were involved in training suppliers and bidders on procurement procedures and regulations while other respondents (21.1%) ensured prompt payment and encouraged new suppliers.

Challenges Facing the Project Supply Chain Management Procedures in Public Funded Development Projects and Advice on Areas for Improvement

It was found that most respondents (52.6%) were of the opinion that the government influenced project performance at constituency level through implementation of law and engaging professionals followed by engaging the community in project identification and implementation by developing constituency tender committees (21.1%). It was also found that most respondents (52.6%) indicated that the influence of political interest and manipulation on the outcome of project supply chain management was present. The mode of this influence includes preference to local suppliers with poor products (57.9%) and through streamlining complex ad hoc procurement procedures (26.3%).

On Ad hoc placement of requisition by use department, most of the respondents (6 or 31.6%) were of the opinion that Ad hoc requisition by use department should be flexible with reliable suppliers and advance communication followed by that such requisition should only be for emergency works and take shortest time (5 or 26.3%). Another 5 respondents (26.3%) said that Ad hoc placement of requisition by the user department was characterized by disagreements over specifications. It was found that all respondents agreed that there are ways of improving performance of supply chain management. On how supply chain can aid improvement of performance; the findings are that 11 or 57.9% of the respondents said it was through performance measurement systems and internal company optimization or cost reduction while 5 respondents or 26.3% chose engaging pre-qualified or competent suppliers.

5.2 Discussion of Findings

A discussion on the findings of the study are presented following the objectives.

5.2.1 Role of Supply Chain Management in Timely and Cost Effective Delivery of Public Funded Development Projects

The study revealed that majority of the respondents (94.7%) indicated that supply chain management was at the strategic level of project delivery. The implication of this is that all the projects in the study have taken off and are ongoing or complete. They are therefore relevant for the study and are able to provide the required data. In addition, all the respondents indicated that supply chain management is the function targeted by their project management teams. It can be deduced that due to its components of M&E and financial management, supply chain management is an essential tool in project management and is key to effective delivery of projects.

The study also revealed that most respondents (57.9%) indicated that the contribution of supply chain management to cost cutting was mainly by awarding tenders to lowest bidders and to ensure timely delivery. This included contracting cost efficient distributors for supply. It can be deduced that effective supply chain management is one of the essentials to timely projects by planning what and when to procure thus having a huge

bearing to successful completion of the project. It can be deduced that proper supply chain management aims at minimizing costs in delivery of goods and satisfaction of a project need by awarding tenders to lowest bidders and by achieving output to the customer's specification on time and at the least costs by avoiding cases of overstocking or under stocking.

The study revealed that 42.1% of the respondents chose cost effective procurement, while 36.8% chose value chain analysis and development of procedures as the steps taken by supply chain management towards lean supply. While cost effective procurement includes dealing with prequalified suppliers and using restrictive tendering in certain circumstances and expediting orders, it also ensures that requirements are bought when they are needed to avoid holding excess stock hence deterioration and costs to the firm. Value chain analysis and development of procedures ensures that correct and best practices are adopted in supply chain management hence assisting the organization save costs and deliver projects.

The study revealed that 57.9% of the respondents indicated that they considered using supply chain tiering as a method of cutting down expenses to deal with suppliers while 42.1% of the respondents disagreed. The respondents who supported tiering indicated that not tiering caused the organization to incur production costs of the items they consume. Tiering also eliminates unnecessary middlemen who only elongate supply chains by instead dealing with those relevant to performance or experts. On the other hand, those against it said that similar significant benefits exist for organizations coordinating and collaborating across multiple supply chain partners or tiers. This includes cost savings, revenue enhancement, responsiveness and redesigning. Tiering is also considered a bit strenuous especially at locational level due to difficulty in implementation. Instead, prequalification procedures and the quotation process are considered ideal.

It was found that majority of the respondents (89.5%) indicated that the status of their projects was ongoing while only 10.5% of the respondents said that their projects had

been completed. It can be deduced that the projects are relevant to the study since they can provide data and information which is still helpful. On the level of satisfaction on progress of supply chain performance and effectiveness, 68.4% of the respondents were satisfied. These results indicate that due to adequate training, most respondents are able to determine the progress of supply chain performance. This findings are in agreement with a study by Smith (2000).

5.2.2 Early Identification of a Need in Projects Supply Chain Management to Effectively Deliver Projects Need

On implementation of supply chain development in projects, it was found that majority of the respondents were in favor of the use of suppliers in the supply of deliverables that aid in project implementation. This was represented by a standard deviation of 0.848. This result conforms with early involvement of suppliers to aid in delivery of projects. However, respondents had divergent views and seemed not to agree with the statement that supply chain is a hindrance to project delivery as represented by a standard deviation of 1.393. Most respondents therefore have a high regard for supply chain management and do not regard it as a hindrance to project delivery.

It was also found that that the person (s) responsible for supply chain management were mainly the community PMC and the supplier (57.9%). The former also includes CDF fund committees while the later also comprises of contracted agencies registered with government departments. It was found that majority of the respondents indicated their knowledge of tendering/quotations (57.9%) and general procurement procedures (26.3%). Due to the basic knowledge in procurement possessed by respondents, it is expected that they are aware of the most common methods of procurement such as tendering, quotations and general procurement procedures. In addition, all the respondents indicated that users are properly involved in sourcing for the goods, works and services. The reason for this is because the need for procurement in these organizations mostly originates from the user department hence their involvement in sourcing for goods, works and services.

5.2.3 Early Supplier Involvement towards Effective Supply Chain Management

It was found that majority of the respondents (78.9%) thought the area where early suppliers involvement will aid towards timely project completion and satisfaction was by good project design, production and specification levels. It can be deduced that early supplier involvement will aid towards timely project completion and satisfaction due to the development of specifications and identification of high quality but cost effective materials and components. Early supplier involvement usually cuts down on losses and non performance and also allows proper feedback from suppliers This findings are in agreement with a report on strategies to reduce cost by martin (1999).

It was also found that the experience of most respondents (52.6%) in handling suppliers was by goods or services not being delivered within specified time lines or specifications. This was characterized by inconsistencies and not following the right procedures. UNESCO (2005) identified challenges to effective implementation of free primary education to be procedural challenges and one of the major hindrances to implementation. These procedural challenges involve lengthy supply chain procedures that have a direct effect on cost and delivery time. On the origin of specifications of goods, works and services to be delivered, it was found that a large majority of the respondents (89.5%) indicated the user department. This was due to the need for procurement in most organizations originating mostly from the user department hence their involvement in sourcing for goods, works and services.

The emergency response to demand known by most respondents is standby list of reliable suppliers and act on need basis (52.6%). These results reveal that it is basically prudent that most organizations will seek to plug shortfalls in supply by requesting for goods directly from known suppliers or by modifying other forms of procurement. On steps taken by organizations to assist in development of suppliers, it was found that most of the respondents (73.7%) indicated that their organizations were involved in training suppliers and bidders on procurement procedures and regulations. These results indicate that for organizations to receive deliverables as required, they need to train suppliers and bidders

on procurement procedures and regulations. The same is also a requirement of the public procurement and disposal act (2005).

5.2.4 Challenges Facing the Project Supply Chain Management and Areas for Improvement

It was found that most respondents (52.6%) were of the opinion that the government influenced project performance at constituency level through implementation of law and engaging professionals followed by engaging the community in project identification. Government efforts include ensuring compliance of PPOA Act through capacity development, specification development involving a team of suppliers, users and technical persons and through sealing all corruption loopholes. In Kenya, public funded projects are still poorly managed and implemented. Previous research shows poorly trained officers involved in handling of projects funded by the public. The result is vested interest, corruption and lack of enough information to suppliers on their obligation in the fulfillment of projects needs.

It was also found that most respondents (52.6%) indicated that the influence of political interest and manipulation on the outcome of project supply chain management was present. These results relate to circumstances surrounding most public projects which feature input from politicians. It was found that the mode of this influence includes preference to local suppliers with poor products (57.9%). This means that politicians prefer to give contracts to their cronies thereby raising conflict of interest. It was found that most of the respondents (31.6%) were of the opinion that Ad hoc requisition by use department should be flexible with reliable suppliers and advance communication followed by that such requisition should only be for emergency works and take shortest time (26.3%). Supply chain management enables a project plan, focus and strategy from end to end hence avoids Ad hoc buying and enables a project have a lean approach to orders and needs of specialist users.

All the respondents agreed that there are ways of improving performance of supply chain management. On how supply chain can aid improvement of performance, the study

revealed that 57.9% of the respondents said it was through performance measurement systems and internal company optimization or cost reduction. This includes reviewing procedures to improve efficiency hence quality services. It also includes involving supply chain management in project identification, conception and guidance to attain objectives in a cost efficient manner. This is achieved through having a work plan before the procurement process hence benefit optimization. These findings are in agreement with a report on advanced supply chain management by Swink (2010)

5.3 Conclusions

The following conclusions were made.

1. Timely and cost effective delivery of projects will only be achieved if proper procedural implementation is emphasized both at the planning and implementation stages.
2. It was concluded that early identification of needs ensures proper specifications that can be adjusted at the least cost with suppliers input. Schedule of delivery and purchase can easily be drawn up leading to cutting of costs.
3. It was concluded that early supply involvement will ensure that the supplier is involved in coming up of specifications. The supplier can also be developed to meet capacity and needs of the organization and ensure that projects implementation is on the right track.
4. The selection of procurement method should be put as part of consideration during procurement planning. The procurement method should be for each procurement package and conditions applicable for each procurement method to be met and threshold matrix set in the first schedule of the PPDR 2006 should be observed. Direct procurement should be only for disasters and emergencies, and should not be a preferred method of lack of competition. Framework contracts will ensure timely fulfillment of needs and cut down on procedural delays.

5.4 Recommendations

The following recommendations were made from the study.

1. In order to avoid delays in delivery of projects there is need for proper demand forecasting, capacity management, scheduling and quality management.
2. Supplier involvement and development should also be included at the planning stage of the project implementation chart.
3. County level government can develop laws so long as they are not in conflict with the public procurement and disposal act that will aid in faster delivery of project activities and adoption of processes such as lean supply chain management.

5.5 Suggestions for Further Research

The following are the suggestions for further research.

1. This study only focused on factors influencing effective supply chain management in delivery of public development projects. A further study can be carried out in other areas in Kenya for comparison purposes to assess how government policies and institutions solve the issue.
2. Other related studies on lean supply chain management, early identification of need, early supplier involvement should also be undertaken.
3. Methods that will aid on time delivery of project supply chain in public procurement using the public procurement and disposal act should be properly analyzed and benchmarked against the best in class so as to aid in better project implementation process.

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APPENDICES

APPENDIX 1: INTRODUCTION LETTER

Victor Ogega Mariaria,
P.O.BOX 48994-00100,
NAIROBI.

Dear Sir/Madam,

RE: REQUEST TO FILL OUT QUESTIONNAIRES

I am a student of the University of Nairobi pursuing a Master of Arts degree in Project Planning and Management.

The requirement of the course is that students must undertake a research project during their course of the study. I have now been released to undertake the same and I have identified your project for the purpose of data collection on factors influencing effective supply chain management in delivery of public development projects. A case study of Nakuru town and Baringo Central constituencies.

The information obtained will strictly be used for the purpose of this study.

I am writing to request you to kindly fill in the questionnaires to the best of your ability.

Yours faithfully,

Victor Ogega Mariaria
L50/73910/2012

APPENDIX 2: QUESTIONNAIRE FOR PROJECT MANAGEMENT COMMITTEE MEMBERS

Instructions

Please tick in the relevant box and fill in the blank spaces.

Part 1

1. Name of the project management committee (PMC).
.....
2. Position at PMC
3. Division
- Location
4. Sector in which the PMC falls.

	Sector	Please tick once
1.	Water	
2.	Education	
3.	Health	
4.	Agriculture	
5.	Infrastructure	
6.	Other project (specify)	

Part II

Education and technical projects skills to carry out effective M & E.

1. What is your highest level of education?
 Primary []
 Secondary []
 Post /tertiary secondary []
 University []
2. How many training courses in project supply chain management for development projects have you attended?

None	
One (1)	
Two (2)	
Three (3)	
More than three (>3)	

b) If your response is either 1, 2, 3, 7, 3 in question 2 (a) above.

1. Was there any training needs assessment prior to the training?

Yes []

No []

Don't know []

ii) How relevant did you find the training with respect to your day to day project implementation?

Very irrelevant []

Relevant []

Not sure []

Irrelevant []

Very irrelevant []

(iii) Were there components of monitoring and evaluation in your training?

Yes []

No []

(iv) Were there components of project supply chain management in your training?

Yes []

No []

3. Based on the following expressions what is your opinion with regard to project supply chain development projects implementation on a scale of 1 to 5.

1. Strongly agree []

2. Agree []

3. Not sure []

4. Disagree []

5. Strong disagree []

Statement	1	2	3	4	5
Utilization of local peoples knowledge and skills is critical to project supervisor monitoring and evaluation to delivery of project.					
Use of local suppliers in the supply of deliverables that aid in project implementation					
Training for project / management supply chain management fulfilled training needs of the PMC and community at large.					
The selection of project management committees member are based on capacity to delivery results.					
Are supply chain management procedures a hindrance to project delivery					

Part III

Measurement of Performance of Projects based on Effective Supply Chain Management Delivery.

1. What is the status of your projects progress currently?
Ongoing []
Completed []
Stalled []
2. On a scale of 1 – 5 what is your level of satisfaction on performance on the progress is supply chain management effective enough based on answer of Q1. above.
Very satisfied []
Satisfied []
Neither satisfied nor unsatisfied []
Unsatisfied []
Very unsatisfied []
3. Are there ways to improving performance?
Yes []
No []
4. If yes for Q3. above briefly explain how supply chain management can aid in improvement of performance.....
5. Who in relation to the projects are involved in the supply chain management of activities in the project?.....
6. Are you aware of any method used to source for goods, works and services for the projects?.....
7. Are the users properly involved in sourcing for the goods works and services?
Yes []
No []
8. What is your experience if any in the handling of suppliers of your needs?
.....
9. Who comes up with the specifications of goods, works, services to be delivered?

1. Supplier []
2. Use Department []
3. Procurement officers []
10. What government initiative do you think?.....
- (a) Will have an influence on project performance at the constituency level.
.....
- (b) Political interests and manipulation
- (i) Influence the outcome of project supply chain management in Nakuru county
- Yes []
- No []
- Don't know []
- (ii) If yes for the above briefly describe how this happens?
.....

Thank you for your contribution