ASSESSMENT OF THE INFLUENCE OF ELECTRONIC DATA INTERCHANGE ON INVENTORY MANAGEMENT IN KENYAN JUDICIARY

BY

Benjamin Mutua Mutuvi

MBA/NRB/2103/17

This dissertation is submitted to the faculty of Business, Communication and Computer studies in partial fulfillment of the requirements for the award of a Master of Business Administration degree from St. Paul's University.

July, 2019.

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Supervisor: Dr. Charity Muraguri (PhD)

July, 2019.

DECLARATION

This dissertation is a product of my own work and is not the result of anything done in collaboration. It has not been previously presented to any other institution. I agree that this dissertation may be available for reference and photocopying, at the discretion of the University.

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DEDICATION

I dedicate this work to my family; my wife Ann, daughters Prima and Bihankah, and son Evidence John for their unwavering and dedicated support during the entire period of my study work. Thank you for being patient and tolerant while I balanced between work, family, and school life. To my parents, thank you so much for your support, understanding and prayers. May our almighty Lord bless you all most abundantly!

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LIST OF ABBREVIATIONS/ACRONYMS

ANA	**:**	Article Number Association
ANSI	**:**	American National Standards Institute
CFA	**:**	Confirmatory Factor Analysis
EDI	**:**	Electronic Data Interchange
EDIFACT	**:**	Electronic Data Interchange for Administration, Commerce and Transport
ERP	**:**	Enterprise Resource Planning
		Europe
GS1	**:**	Global Standards One
ICT	**:**	Information Communications Technology
IOS	**:**	Inter-organizational Information System
IT	**:**	Information Technology
JIT	**:**	Just in Time
MPS	**:**	Master Production schedule
MRP	**:**	Materials Resource Planning
NACOSTI	**:**	National Commission for Science, Technology and Innovation
NVA	**:**	Non Value Adding
ODETTE	**:**	Organization for Data Exchange by Tele Transmission in Europe
SMART	**:**	Specific, Measurable, Achievable, Realistic and Time bound
SPSS	**:**	Statistical Package for Social Sciences
TAM	**:**	Technology Acceptance Model
TRADACOMS:		Trading Data Communications
UN	**:**	United Nations
VAN	**:**	Value Added Network

OPERATIONAL DEFINITION OF TERMS

Communication Flow	The exchange of information and ideas from one person (source) to another.
Documentation	Records containing data or information for reference.
Electronic Data interchange	The structured transmission of data by electronic means without human intervention.
Inventory Management	It constitutes the entire paradigm of determining the efficient and effective work operations within the firms stores and warehouses.
Non Value Adding	Activities that do not result into benefit rather into wastage of time and other resources.
Order processing	The efficient and proper method of picking, packing and delivery of goods or services.
Request For Quotations	An invitation to bidders to quote for supply of goods or services.
Quotation	A detail of prices, quality, quantity, specifications and delivery schedules of goods and services.

ABSTRACT

The study aimed at assessing the influence of Electronic Data Interchange (EDI) on inventory management in the Kenyan judiciary. Specific objectives were: to determine the influence of supplier performance on inventory management in the Kenyan Judiciary; to establish the influence of communication flow on inventory management in the Kenyan Judiciary; to determine the influence of work process on inventory management in the Kenyan Judiciary; and to establish the influence of institutional policies on inventory management in the Kenyan Judiciary. The study adopted a descriptive research design with a target population of 450 respondents. Proportionate stratified random sampling method was used to obtain the sample size. The study sample size therefore incorporated 225 respondents who included 10 top level management personnel representing a percentage of 5%, 25 middle level management personnel representing 11% and 190 lower level management personnel representing 84%. The study collected data by use of questionnaires which were administered. The researcher then analyzed the data by use of qualitative and quantitative statistics. The quantitative data was analyzed using descriptive and inferential methods. Inferential statistics was used through multiple regression analysis which was conducted using the Statistical Package for Social Sciences (SPSS). Results of quantitative analysis were presented through figures and tables. From the descriptive analysis, it was found out that all the indicators: supplier performance, communication flow, work process, and institutional policies influenced electronic data interchange on inventory management in the Kenyan judiciary to great or moderate extent. The findings showed that taking all other independent variables at constant, a unit increase in institutional policies will lead to a 0.679 increase in the inventory management in the Kenyan Judiciary with a p value of 0.000. A unit increase in supplier performance will lead to a 0.148 increase in inventory management in the Kenyan Judiciary with a p value of 0.087. It was also found out that a unit increase in communication flow would result to a 0.0344 increase in inventory management in the Kenyan Judiciary with a p value of 0.790, while a unit increase in work process would result to a 0.118 increase in inventory management in the Kenyan Judiciary with a p value of 0.401. From the ANOVA results the significance value was found to be 0.000 which is less than p=0.05. Therefore the model was found to be statistically significant in predicting how electronic data interchange influence inventory management in the Kenya Judiciary.

CHAPTER ONE
INTRODUCTION

1.1.Background of the Study

Organizations are streamlining inventory management through deployment of information technology (IT) in order to achieve success in today's global market place. Advances in information communications technology (ICT) have made the availability of Electronic Data Interchange (EDI) easier as well as improving on decision making process and performance in service delivery. Effective use of EDI tools in organizations help in integrating their trading partners and enabling them to be able to quickly respond to changes in market dynamics (Dawei, 2011).

According to Pound, Bell and Spearman (2014) inventory management is the coordination of purchases, storage and warehousing of stocks so as to achieve adequate supply of the right quantity and right quality of such stocks at the right place and at the right time. Inventory is the supplies or materials that are stored or warehoused to meet customer demands. Inventory management is therefore basically concerned asset management, carrying and holding costs of inventory, inventory lead times, inventory demand forecasting, storage and warehousing, inventory quality management, and customer demand forecasting.

Changing technologies have posed a challenge to many companies and institutions not only in Kenya but worldwide. The use of computer has created numerous opportunities for improving performance in the supply chain particularly in procurement process in the present world. Electronic data interchange advancement is widely rated as causing remarkable change in inventory management as it results in bringing down considerably an organizations operating costs. (Harrison & Hoek, 2011).

Many of the organizations have gained an upper hand in reducing cost, faster market penetration and procurement procedures through implementing the use of computer technology in the procurement process. However, in Kenya, the use of doing business electronically otherwise known as e-business is slowly gaining shape. The concept of EDI in supply chains in Kenyan business is currently practiced by global and international supply and freight companies such as Direct Handlers limited (DHL). (Collins, 2011)

The Kenyan Judiciary supply chain management department still conducts business with

stakeholders through traditional documentation processes which normally take long lead times before deliverables are realized. These processes are mainly done on paperwork and exchanged via carriers and couriers. Only in few instances is communication done via e-mails and or computer networks. According to the Judiciary Transformation Framework (JTF) Handbook, there is need to harness technology in the judiciary so as to enhance service delivery in all sectors of the justice system. Hence there is need to embrace technology such as EDI in inventory and supply chain management in the Kenya Judiciary. (JTF, 2015)

1.1.1. Inventory Management

Inventory management constitutes the entire paradigm of determining the optimal stocks that a firm needs for efficient and effective work operations within the firms stores and warehouses. Inventory is no doubt one of the most valuable assets in a firm. Shortage of inventory when and where it is needed will definitely be extremely detrimental to the organization. However, excess inventory holding has its related demerits. These include pilferages, damages, spoilt items, obsolescence, and demand shifts. The Just-In-Time inventory management technique will be of particular focus here. It is also worth noting that inventory must be insured, and if it is not sold in time it may have to be disposed of at clearance prices, or simply destroyed (Halim, Rashed, & Azeem, 2010).

According to Macharia and Ismail (2015), in inventory management, the store man will attempt to procure and stock stores or inventory bearing in mind the economic order quantities so as to keep in control the related ordering, handling and other costs thereto incidental. Inventory management is equally concerned with actual determination of requisite stock levels within the distribution chain. This aims at balancing between availability of products and maintaining minimal stocks to avert escalation of stock holding costs. (Santagate & Ellis, 2017).

IT investments have become the largest category of capital expenditure globally in businesses over the past decade. When an organization makes a decision to migrate to electronic processes, from processes that are document based, there are vast advantages that will ensue. These advantages include lower holding costs, fast processing of documents, error reduction and eventual improvement of relations with trading partners (Wingreen, Maryam and Hritik, 2014). One of the pillars in the Kenyan Judiciary transformation framework handbook is to harness technology for enhanced service delivery. EDI will therefore come in handy in the

procurement unit to decouple the MRP system of inventory management in the Kenyan Judiciary inventory and supply chain management.

1.1.2. Electronic Data Interchange

According to Lyson (2005), Electronic Data Interchange (EDI) is a technology based approach where an organization makes decision to embrace technology to communicate documents electronically instead of using paper documentation. Processing of communication is via computer manipulation alone and the involvement of human acts is only for correcting errors and reviewing quality management. EDI is therefore defined as the structured transmission of electronic data through agreed message formations from one computer to another without any form of human interactions. The electronic data interchange technology is designed to ensure efficacy of inventory management processes by ensuring simplicity of documentation and achievability of accuracy from the manual inventory management systems (Collins, 2011).

By moving from a paper-based exchange of business document to one that is electronic, businesses enjoy major benefits such as increased supplier performance leading to decreased lead times, increased product availability, increased supplier flexibility and better communication networks. It also ensures better communication flow supported by enterprise recourse planning platform, internet connectivity and computer networks. Equally, the business will achieve enhanced work process through support of top management, total quality management, and better staff training. The business will also be able to ensure better compliance to its institutional policies such as the procurement guidelines, communication channels, and its supplier relationship management (Macharia & Ismail, 2015).

Companies that decide to trade in partnership may decide to coordinate their activities via peer to peer network communication systems. The peer to peer networks however have some demerits, which may be cured by use of value added networks (VANs). Value added network operates in a similar way like a general post office which receives consignments that is to be transferred to owner at a different destination. Besides the value added networks, internet connectivity is also applicable as observed by Walsh, 2014.

Standards for EDI exist to facilitate parties transacting instruments without having to make special arrangements. Some major sets of EDI standards: The UN-recommended

UN/EDIFACT which is the only international standard, the US standard ANSI ASC X12 (X12) widely used in North America, GS1 EDI set of standards developed by the GS1 and is widely used in global supply chains, the Trading Data Communications (TRADACOMS) standard developed by the Article Number Association (ANA) and is predominant in the United Kingdom retail industry, the ODETTE standard used mainly within the European automotive industry.

Institutional policies such as procurement guidelines, communication channels, supplier relationship manuals must be properly aligned to the company overall strategy. Top management must support the EDI initiative to ensure success during implementation. Inventory management guidelines must be clearly communicated among the trading partners to ensure long term relationships between the partners (Zhang, 2010).

1.1.3. The Kenyan Judiciary

The Judiciary is one of the three State organs established under Chapter 10, Article 159 of the Constitution of Kenya. It establishes the Judiciary as an independent custodian of justice in Kenya. Its primary role is to exercise judicial authority given to it, by the people of Kenya. The institution is mandated to deliver justice in line with the Constitution and other laws. It is expected to resolve disputes in a just manner with a view to protecting the rights and liberties of all, thereby facilitating the attainment of the ideal rule of law. The Judiciary and its related institutions; Judicial Service Commission (JSC), Kenya Law, Tribunals and the Judiciary Training Institute (JTI) perform the following functions; administration of justice, formulation and implementation of judicial policies and compilation and dissemination of case law and other legal information for the effective administration of justice. (Constitution 2010)

The Judiciary consists of the Judges of the Superior Courts, Magistrates, other judicial officers and staff. The Head of the Judiciary is the Chief Justice, who is also the President of the Supreme Court. The leadership is cascaded throughout the courts through the President of the Court of Appeal, the Principal Judge of the High Court and the Heads of Stations. In carrying out their respective mandates, the courts are facilitated by administrative services provided through the Office of the Chief Registrar, who is the Chief Administrator and Accounting Officer of the Judiciary. The registrars in the various courts – the Supreme Court,

Court of Appeal, High Court, Employment and Labor Relations Court and Subordinate Courts, are responsible for day to day administration of the court. (JTF, 2015)

In the Kenyan Judiciary structure, there is established directorates that are designed to facilitate secondary services to primary core mandate of administration of justice. The secondary services involve procurement, performance and organizational development, records management, and human resources management and administration. In the year 2012, the Kenyan Judiciary embarked on a journey to transform its operations. This attempt culminated in the production of a blue print coded the Judiciary Transformation Framework. According to the blue print, the Kenyan Judiciary leadership had made a decision to pull the institution out of decades of near paralysis to modern service oriented government institution operating on world class platform.(JTF, 2015)

According to the Transformation Framework Handbook (2015) the Kenyan Judiciary outlined four pillars to spearhead the transformation process; people focused delivery of justice; transformative leadership, organizational culture and professional staff; adequate financial resources and physical infrastructure; and harnessing information communications technology (ICT) as an enabler for delivery of justice. Harnessing technology calls for systems such as EDI in inventory management in the Kenyan Judiciary so that procurement process can be done efficiently, effectively and more transparently.

1.2.Statement of the Problem

For decades, many organizations have faced several challenges in the inventory sector such as slow supplier performance, communication flow, poor work processes and bureaucratic institutional policies. Inventory management has been a huge headache without automation. In order to be competitive in servicing the customer base, some organizations have made significant investments in technology to boost on their performance. Institutions that adopted organizational information system (IOS) technologies such as Electronic Data Interchange are reaping benefits including reduced lead times, reduced order and data storage costs, as well as reduced errors therefore improving performance (Hamid & Krishnapillai, 2010).

Kenyan Judiciary for the past ten years has lowered down its operational activities thus creating a downward resultant trend in its performance. Reports aimed at restoring the public confidence in the Kenyan Judiciary identified a myriad of problems facing the Judiciary one

of which was a weak procurement system evidenced with irregular procurement procedures ineffective communication flows, and bureaucratic policies. The Judiciary Transformation Framework (2015) made recommendations to restore the credibility of the judiciary through harnessing technology in delivery of justice. This cannot be viewed in isolation but must be integrated in all the judiciary functions including the procurement process, hence the need to embrace technologies such as Electronic Data Interchange (EDI) in the supply and inventory management. Therefore, there is need to further assess effect of EDI application in procurement and more specifically in the inventory management in the Kenyan Judiciary.

1.3.Objectives of the Study

1.3.1. General Objective of the Study

The general objective of the study was to assess the influence of electronic data interchange on inventory management in the Kenyan judiciary.

1.3.2. Specific Objectives of the Study

The specific objectives of the study were:

i. To determine the influence of supplier performance on inventory management in the Kenyan Judiciary.
ii. To establish the influence of communication flow on inventory management in the Kenyan judiciary.
iii. To determine the influence of work process on inventory management in the Kenyan judiciary.
iv. To establish the influence of institutional policies on inventory management in the Kenyan Judiciary.

1.4.Research Questions

The research questions of the study were:

i. What is the influence of supplier performance on inventory management in the Kenyan Judiciary?

ii. How does communication flow influence inventory management in the Kenyan Judiciary?

iii. Does work process influence inventory management in the Kenyan Judiciary?

iv. What is the influence of institutional policies on inventory management in the Kenyan Judiciary?

1.5.Significance of the Study

Inventory management and procurement of goods and services in Kenyan Judiciary is undoubtedly very important to all levels of the management. It has taken a great strategic importance in the institution in the recent years and will assume even greater significance in the years ahead. The key for improvement in communication and advancement in EDI in procurement is gaining a lot of relevance. All organizations and institutions are therefore switching gears to it and therefore it is imperative for the Judiciary procurement unit to shape up in keeping with the current global SMART practice in order to be able to focus on the challenges ahead.

This research study is equally going to be of more significance to purchasing and sales departments in other organizations and institutions who are facing the same challenges. These challenges include slow supplier performance, ineffective communication flows, and bureaucratic policies. The research findings are therefore going to highlight the problems and/or challenges faced by organizations in inventory management and recommend ways of overcoming such challenges, specifically by embracing Electronic Data Interchange in procurement function.

The research is going to add value to the wide academic knowledge in this area which can be used by other researchers as a reference in the future. Researchers and research institutions may also use this study for literature review and come up with further research studies based on the findings hereof. Scholars likewise are going to find the literature in this in-depth report worth to read and expound on the findings and recommendations thereof.

1.6.The Scope of the Study

The research examined the effect of electronic data interchange on inventory management. Electronic data interchange was to be measured using supplier performance, communication flow, work process, and institutional policies. The research variables for this study were underpinned by the diffusion of innovations theory, technology acceptance model, and the

balanced score card model. The unit of analysis in this study was the Kenyan Judiciary whereas the unit of observation was employees at the headquarters of the Kenyan Judiciary in Nairobi. The target population was 450 employees of the Kenyan Judiciary stationed in Nairobi headquarters while the sample size was 225 respondents

1.7.Limitations of the Study

This study identified possible limitations including inaccessibility of respondents, biased responses from the participants and low response rate. Accessibility of respondents was overcame by booking appointment to meet with them at their convenience; while getting objective information from the respondents was achieved by getting permission from the office of the Chief Registrar of the Judiciary. Adequate response rate was achieved by establishing a contact person for follow up with them; while self-reporting from respondents was mitigated by use of secondary data to validate their responses.

CHAPTER TWO

LITERATURE REVIEW

2.1.Introduction

This chapter comprises a review of the major theories that were used to anchor the research variables to the study. It equally also undertook a critical review of empirical studies related to the study. Furthermore the chapter provides a summary of the literature review as well as presents the conceptual framework and identifies research gaps to be filled.

2.2.Theoretical Literature Review

2.2.1. Technology Acceptance Model

Technology Acceptance Model (TAM) was proponed by Davis (1989). TAM provides a valid and reliable measure that predicts the acceptance or adoption of new technologies by end-users. The model was further proponed by Baggozi and Davis (1992).

According to Davis (1989) the original TAM assumes that the end users will accept the technology on basis of how they think the technology will be useful and how it will be easy to apply for a specific work environment. Davis applied the model to work settings, and defined perceived use as the degree to which people believe that using a particular system would enhance work performance. According to Davis and Baggozi (1992), technology usefulness is the degree to which the technology is assumed to enhance work performance; while ease of use is degree to which application of a technology is believed to be free from effort.

According to Holden and Karsh (2010), the Technology Acceptance Model traces how users come to accept and use a technology. TAM suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. In inventory management therefore it can be assumed that the application of EDI technology will enhance supplier performance by ensuring less lead times. Equally, this will enable trading partners to achieve enhanced and better work process besides ensuring total quality management of products/inventory.

2.2.2. Diffusion of Innovations Theory

The Diffusion of Innovation theory was proponed by Rogers (2003). It was further proponed by Medlin (2001) who suggested that diffusion of innovations theory is the most appropriate for investigating the adoption of technology in institutions and businesses. According to Rogers (2003), a technology is a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome.

Rogers defines diffusion as the process in which an innovation is communicated thorough certain channels over time among the members of a social system such as institutions. The theory comprises four main elements that influence the spread of a new idea: the innovation itself, communication channels, time, and a social system. The innovation must be widely adopted in order to self-sustain.

It can therefore be deduced that the diffusion of innovations theory supports the applicability of EDI system in inventory management; more so as communication flow and timeliness/ lead times are anchored therein. Inventory management will no doubt require an innovative approach in order to self-sustain. Applying EDI in inventory management will equally enhance buyer- supplier relationship in the Kenyan Judiciary.

2.2.3. The Balanced Score Card model

The Balanced score card was developed by Kaplan and Norton (1992). According to another proponent Vliet (2010), the Balanced Scorecard is a strategic work performance measurement model. The starting point of the balanced scorecard is the vision and the strategy that are viewed from four perspectives: the financial perspective, the customer perspective, the internal work process, learning and growth.

According to Kaplan and Norton (1992), the model's proposition is to translate an organization's mission and vision into actual operational actions in strategic planning. In addition, it can help provide information on the chosen strategy, manage communication feed forward and feedback in work process. The model's indicators include management support and total quality management initiatives as well as institutional policies set out to support the work process.

In inventory management customer perspective is assumed to relate directly to supplier performance, while business processes are directly related to work process (Vliet, 2011). According to Kaplan and Norton (1992), each organization serves a specific need in the market. The application of EDI in inventory management will assumedly impact positively on quality and timely deliverables from suppliers thereby enhancing their performance. From the perspective of internal process, EDI will enhance internal processes thereby adding value within the trading partners and ultimately enhancing supplier flexibility and acceptability of the processes.

2.3.Empirical Literature Review

Today, there is no doubt that the environment in which businesses operate is highly turbulent and competitive. Therefore, organizations must align their operations in order to achieve and maintain effectiveness and efficiency through economies of scale, and not diseconomies of scale. Some organizations attempt to procure and hold inventory for purposes of meeting customer demand. Nevertheless, holding the inventories so that the organizations can achieve their goals may pose some demerits and challenges. These challenges include stock obsolescence, high insurance cover, damages and pilferage. To mitigate against these challenges associated with stock holding, organizations have therefore turned to using modern technology to overcome such challenges (Kitheka, 2012).

2.3.1. Supplier Performance and Inventory Management

In many countries across the world, 60% of quality systems in public procurement have not adequately delivered the expected benefits. In developing countries like Kenya, public procurement is increasingly being appreciated as essential in service delivery and it accounts for a high proportion of total expenditure of taxpayers' money (Hunja, 2011).

A study conducted by Collins (2011) suggests that enhanced competitiveness, product availability, supplier flexibility and inter-organizational communication networking arising from use of EDI point out that these information systems point to basic essentials that an organization must embrace so as to beat pressures of current turbulent business environment. The relationship between electronic data interchange technology application and just-in-time (JIT) inventory management strategy is the result of organizations bearing focus on lean production. EDI has recently received considerable attention and the benefits are well documented through such case studies.

An exploratory study carried out by Skipper *etal* (2009) indicates that at the start of a buyer/supplier relationship, expectations should be outlined so both parties understand what the other is looking for in the terms of performance of a contract. Key elements to consider include lead times for delivery, availability of products, supplier flexibility and communication networks between the trading partners. The study concluded that organizations that embrace electronic data interchange technology to integrate their suppliers get merits such as shorter lead times, reduced order processing errors, and low document storage costs. They also attain increased customer satisfaction levels; since EDI permeates through the entire communication channels thereby increasing communication flow and ensuring integration of alliances.

Another study conducted by Anvari (1992) shows that supplier flexibility in the supply chain adds the requirement of flexibility within and between all partners, including departments within organizations and external partners, including suppliers, carriers, third party logistics (3PL) companies, and information systems. Several studies suggest that entities may not always be able to predict or avoid a disruption, but they can reduce their risk exposure by enhancing flexibility through the implementation of key strategic tools such as EDI communication network. If employed properly, these strategic initiatives enhance the ability of the organization to respond to a disruption effectively, minimizing the negative impacts of the event on overall supply chain performance levels.

2.3.2. Communication Flow and Inventory Management

Organizational communication and efficient flow of information are a crucial part of any organizations operational processes. Without information flow, no financial or material can exist. Having a well-organized information flow can provide a competitive advantage through reduced costs improved customer service and more efficient business processes. Computer based information systems, such as enterprise resource planning system (ERP), facilitate the information flow. Application of EDI supported by internet connectivity, enterprise resource planning (ERP) platforms, and computer networks is therefore the way forward in ensuring long term customer/supplier relationships (Nousiainen, 2008).

A study by Walsh and Schrader (2014) which used qualitative data revealed that in a competitive business environment, the success of an organization depends on its timely communication with vendors, customers, suppliers and other external entities. EDI enables a

business to create documents within minutes and transmit them within seconds thus giving an upper communication edge.

Momanyi and Sanewu (2014) investigated the impact of technology on inventory control systems in Kenya ferry services. The study concluded that technology has had bigger impact on inventory control in terms of efficiency, ease of accessing information and accuracy thereby affecting organizational performance. The study recommends that modern inventory control systems should be well implemented since it forms a platform for ease of evaluating risk in which the organization invest a lot of money in purchasing of inventory. Additionally the study recommends that organization should integrate all its inventory management functions with information communication technology as well.

Kitheka (2012) sought to address the following two objectives; to establish the extent of inventory management automation and to determine the effect of inventory management automation on the performance of supermarkets in Western Kenya. The findings of the study revealed that inventory management automation affected the performance of the supermarkets and that there was a positive linear relationship between inventory management automation and the performance of the supermarkets. The study recommended that supermarkets should automate their inventory management systems so as to improve customer service delivery levels and reduce operational costs. It was also recommended that the supermarkets should decentralize their management structures, encourage specialization of labour and do enough research before investing in any new technology.

According to Layson (2005), EDI is an on-line transaction system that facilitates computer to computer communication of standardized business documents and transactions across organizational boundaries. He also argued that supplier/customer relations will be another benefit of EDI in inventory management. Further, the amount of trust and faith put into a supplier by the buyer is tremendous as the buyer will be depending on the supplier to supply them with quality goods at the right quantity whenever need arises.

According to a study by Halim, Rashed and Azeem, 2010 execution of a succeeding event depends on the timely and successful completion of a preceding event and non-value adding (NVA) activities such as inventories should be minimized. Managers should therefore practice minimizing inventories and applying EDI to create ways of eliminating buffer stocks to guard against costs related with stock holding. The application of EDI and JIT (Just-IN-

Time) are likely to decentralize decision making within an organization thereby creating room for better and enhanced communication flow between trading partners. This also helps to enhance continued long term relationships between the buyer and the supplier.

2.3.3. Work Process and Inventory Management

Everything from supply chain management to customer satisfaction can be solved using IT. Clearly, IT will continue to change the way we do business in the world today. Many aspects of business have been drastically changed by advancements in technology. New technologies are allowing entities to communicate better and greatly increase the speed and efficiency with which people do business. By taking full advantage of technology, businesses can achieve profits and success beyond their wildest dreams (Fawcett, Magnan and McCarter, 2005).

Mesa (2018) assessed the determinants of procurement performance in the Judiciary Department at the Nakuru Law Courts. The objectives of the study were to determine the relationship between procurement planning, ICT, staff competency, contractual management and procurement performance. From the findings, there was a strong correlation between procurement planning, staff competency, contractual management, ICT and procurement performance. As a result, the study concluded that proper procurement planning determines the success of service delivery, employees were regularly trained on procurement procedures, proper management of contracts enhances procurement performance and not all suppliers are able to access tender information and apply online. Further, the study recommended that adequate resources should be provided for procurement planning in the Judiciary department at Nakuru Law Courts, professionalism should be enhanced to ensure compliance to procurement laws, the judiciary procurement department should focus on contract terms and timelines to minimize delays in service delivery by suppliers and procurement staff should be regularly trained on ICT to facilitate procurement performance.

Chan, Tasmin, Aziati, Rasi, Ismail, and Yan (2014) sought to identify the problem of inventory management faced by the manufacturing small medium enterprise and also to determine the factors that will influence the effectiveness of inventory management. The result showed that the problems of inventory management faced by manufacturing organization were underproduction, overproduction, stock out situation, delays in the delivery of raw materials and discrepancy of records. The factors, documentation/store records, planning, knowledge of employees/staff skill have shown to significantly influence the

effectiveness of inventory management while the funds have shown slightly significant influence on the inventory management in manufacturing small medium enterprises.

Sadikoglu and Olcay (2014) explored the effects of Total Quality Management (TQM) practices on performance and the barriers to TQM practices in Turkey. The study has showed that different TQM practices significantly affect different performance outcomes. Results revealed that primary obstacles that the firms in Turkey face were lack of employee involvement, awareness and commitment of the employees, inappropriate firm structure, and lack of the resources. It recommended that firms should continue implement TQM with all variables to improve performance. Firms should also improve employees' involvement to TQM, enhance firm structure, and provide resources to overcome the barriers that prevent effective implementation of TQM practices.

According to the World Bank (2011), total quality management programs help firms to reduce wastage. Firms that hold on to inventory must pay for the storage of such stores as well as for management and tracking of the same. The costs of holding inventory are built into the price of the product. Implementing a quality programme reduces the amount of inventory that costs the firm money and occupies space besides tying up capital and without adding value. Electronic Data Interchange is a sure way of ensuring effective communication between trading partners so that only the right quantity of goods and/or services is delivered at the right time and at the right quality.

A study by Harrison and Hoek (2011) revealed that order processing systems assist in quickly processing large volumes of orders and avoiding delays in delivery. Order processing software assists in providing order status details and timely order processing adjustments. It minimizes the manual entry of information related to sales order and does not require making changes to existing business practice. Current information technology is capable of handling the most demanding customer requirements and when required order information can be exchanged between trading partners. It makes little sense for a firm to accumulate orders at a local sales office for a week, mail them to a regional office, process the orders in a batch, assign them to a distribution warehouse and then ship them via air to achieve fast delivery. A well-integrated and structured EDI system will ensure enhanced and accurate order processing system in the Kenya Judiciary inventory management.

Another study according to Dawei (2011) concluded that job aids and written process documents are fine, but nothing can substitute for an actual training session. That way, all employees will be able to help monitor raw materials, work in progress, and finished products. Inventory management training focuses on materials planning, but also emphasizes the importance of the entire inventory process including supplier management, production scheduling and performance metrics. Dawei (2011) concluded that having trained specialists on board can be a key competitive advantage. However, since inventory can easily get out of control and absorbs so much of a company's assets, each sales team members and production team members should also know the basics of inventory management software such as EDI.

2.3.4. Institutional Policies and Inventory Management

With the increasing focus in enhancing supply management chain through use of the rapid development of Information and Communication Technology, businesses are seeking to develop and organize strategic, efficient and world-wide inventory control system for its use. In order to promote such global inventory control system, which are also compatible with sustainability objectives, organizations need to develop and implement effective systems both individually and collectively. This has resulted to Modern inventory control as a result of improved technology being one of the most strategic initiative embraced by organization in partnering initiatives for encouraging collaboration and information sharing among trading partners (Angulo, 2007).

Nzuza (2015) attempted to identify factors affecting the success of inventory control and to assess strategies used by the Stores Division of the Thekwini Municipality in Durban to control inventory. The findings of the study revealed that employees lack proper training and education and that there is poor inventory control planning, lack of staff communication and lack of procurement time management when processing inventory orders. Respondents also indicated that there are no common strategies in place to control inventories. The study recommends that the Stores Division should consider the levels of staff qualifications, provide more staff training, and improve inventory control planning; communication; time management, and instigate innovative strategies in order to eradicate growing costs of inventory stocks. Moreover, the internal control processes need to be mapped according to the various roles identified.

According to a study conducted by Chattered institute of purchasing and supplies (CIPS) in 2012, institutional policies are guidelines that govern the conduct of business within and without an organization. They guide staff and other stakeholders in their undertakings and dealings in the course of business transactions. According to the study, the beginning of e-procurement was around the year 1980 which saw the development of electronic data interchange (EDI). EDI started enabling trading partners especially in retail industry involving fast moving consumer good (FMCG) to transact business through applications such as secure store and call forward networks. These EDI systems enabled businesses to transact and integrate data files on their inventories, their prices, specifications and information about each company location and their trading policies.

Another study conducted by Zhang (2010), observes that maintaining trading partnerships and interpersonal relationships within the EDI roles will assume increasing importance. Alliances involving inter-organizational policies are moving farther away from transactional exchanges premised on short-term deals towards long-term relationships based on trust and mutual understanding. According to the case study, the inception of electronic data interchange technology occasioned a paradigm shift in the way of transacting business between all the partners. Small and medium enterprises were able to choose their terms of doing business with the bigger trading partners since in EDI relationships there must be mutual agreement between the partners. EDI therefore allows small and medium enterprises to integrate with bigger organizations by mutual agreements so that each business gets their appropriate market share from the alliance.

George (2010) asserts that the degree of consistency with procurement regulations largely affects the efficacy of the procurement guidelines in public sector institutions. The study found that application of poor sourcing tactics played a key role in causing impediment to actualization of efficient procurement performance in many government institutions in Kenya. The study contends that use of information communications technology in procurement is also very critical in determining the performance of procurement in state corporations.

2.4. Summary of Literature Review and Research gaps

There are many studies that have been carried out on the area of current study. A critical review of the studies has revealed research gaps which have presented a strong case for the current research to be conducted in an attempt to fill such gaps. The gaps are presented in Table 2.1.

Table 2.1 Summary of Literature Review and Research Gaps

Author	Research topic	Research findings	Contextual gap	Conceptual gap	Focus of Current Study
Momanyi & Sanewu (2014)	The impact of technology on inventory control systems in Kenya ferry services.	Technology has had bigger impact on inventory control in terms of efficiency, ease of accessing information and accuracy thereby affecting organizational performance.	The impact of technology on inventory control systems in Kenyan Judiciary.	The impact of EDI on inventory control systems	The impact of EDI on inventory management in the Kenyan Judiciary

Kitheka (2012)	The effect of inventory management automation on the performance of supermarkets in Western Kenya	Inventory management automation affected the performance of the supermarkets and that there was a positive linear relationship between inventory management automation and the performance of the supermarkets.	Effect of inventory management automation on the performance of the Kenyan Judiciary	Effect of EDI on the performance of supermarkets in western Kenya	Effect of EDI on inventory management in the Kenyan Judiciary
Mesa (2018)	Determinants of procurement performance in the Judiciary Department at the Nakuru Law Courts	There was a strong correlation between procurement planning, staff competency, contractual management, ICT and procurement performance.	-	Effect of supplier performance, work process and institution policies on procurement performance in the Judiciary	Effect of supplier performance, communication, work process and institution policies on procurement performance in the Judiciary

Chan *et al* (2014),	Factors that will influence the effectiveness of inventory management in manufacturing small medium enterprise	The factors, documentation/store records, planning, knowledge of employees/staff skill have shown to significantly influence the effectiveness of inventory management	Factors that will influence the effectiveness of inventory management in the Judiciary	Influence of supplier performance, communication flow and institution policies on effectiveness of inventory management	Influence of supplier performance, communication, work process and institution policies on effectiveness of inventory management in the Judiciary
Sadikoglu and Olcay (2014)	Effects of Total Quality Management (TQM) practices on performance and the barriers to TQM practices in Turkey	Primary obstacles that the firms in Turkey face were lack of employee involvement, awareness and commitment of the employees, inappropriate firm structure, and lack of the resources.	Effects of Total Quality Management (TQM) practices on performance and the barriers to TQM practices in Kenyan Judiciary	Effects of supplier performance, communication flow and institution policies on performance	Effect of supplier performance, communication, work process and institution policies on procurement performance in the Judiciary
Nzuza (2015)	Factors affecting the success of inventory control in the Stores Division of the	Employees lack proper training and education and that there is poor inventory control planning, lack of staff	Factors affecting the success of inventory control in Kenyan Judiciary	Effects of supplier performance, communication flow and work process on	Effect of supplier performance, communication, work process and institution

	Thekwini Municipality in Durban to control inventory stocks.	communication and lack of procurement time management when processing inventory orders.		performance	policies on procurement performance in the Judiciary
Walsh & Schrader (2014).	The Impact of Industry communication on the Supply Chain	In a competitive business environment, the success of an organization depends on its timely communication with vendors, customers, suppliers and other external entities. EDI enables a business to create documents within minutes and transmit them within seconds thus giving an upper communication edge.	The Impact of Industry communication on the Supply Chain in Kenyan Judiciary	Impact of supplier performance, work process and institution policies on Supply Chain	Impact of industry communication, supplier performance, work process and institution policies on Supply Chain in the Kenyan Judiciary

(Halim, Rashed, & Azeem, 2010)	Effect of Information and Knowledge Sharing on Supply Chain Performance: A Survey Based Approach	Procurement guidelines of an institution must be aligned to EDI requirements in order to achieve effectiveness and efficiency in operations. Effective communication policies must likewise be put in place to ensure timely communication between the trading partners.	Effect of Information and Knowledge Sharing on Supply Chain Performance in the Kenyan Judiciary	Effect of supplier performance, work process and institution policies on Supply Chain performance	Effect of Information and Knowledge Sharing, supplier performance, work process and institution policies on Supply Chain Performance in the Kenyan Judiciary

Source: Author and Literature Review (2019)

2.5.Conceptual Framework

According to Neuman (2006) a conceptual framework represents a group of concepts that are broadly defined and systematically organized to provide a focus, a rationale, and a tool for the integration and interpretation of information. In this dissertation, the conceptual framework in Figure 2.1 shows the correlation between EDI and inventory management in Kenyan Judiciary.

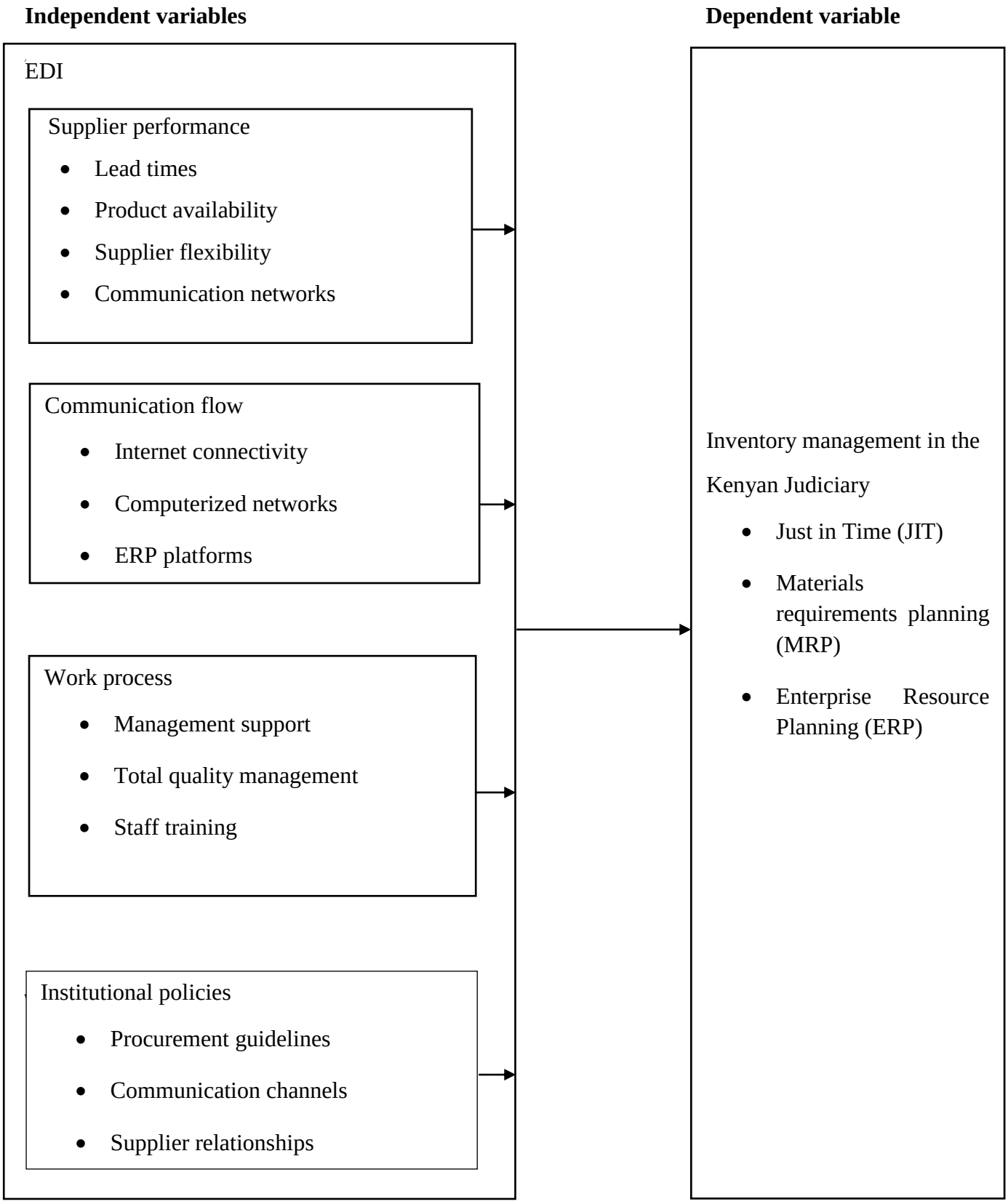


Figure 2.1 Conceptual Framework

Source: Author (2019)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1.Introduction

This chapter narrates in a systematic and coordinated manner the steps and processes that were employed by the researcher to collect, analyze and process data in the study. The methodology that was used in the research study include research design, target population, sampling design, data collection and analysis procedures.

3.2.Research Design

According to Noum (2007), research design is the plan, detail or tactic employed by the researcher to bring out answers to research problems. The aim of the researcher is to collect data at a specified place in particular time and use it to depict the state of existing conditions. This research used a descriptive research design to assess the effect of Electronic Data Interchange (EDI) in inventory management in the Kenyan Judiciary.

According to Kombo and Tromp (2011) a descriptive design is a description of the state of affairs as it exists. Kothari (2008) points out that descriptive studies are not just supposed to find facts but rather may result in the deduction of vital tenets of knowledge and solution to a significant problem. Descriptive research provides clearly defined information and its findings are conclusive. It also determines the frequency at which the variables are conveyed. Therefore it is suitable for obtaining systematically factual information for decision making, identifying the current practices, conditions, opinions and relationships among variables hence was appropriate for investigating the effect of EDI on inventory management in the Kenyan Judiciary.

3.3.Target Population

According to Mugenda and Mugenda (2008), target population is defined as the totality of cases of people, organization, or institutions which pose certain commonalities that are relevant to the study. The population of interest was be the employees of the Kenyan Judiciary stationed at the headquarters in Nairobi. The target population was 450 people including top level management, middle level management, and lower level personnel as

shown in table 3.1. This is the total number of employees in judiciary headquarters, Nairobi.

Table 3.1 Target Population

Category	**Target population**	**Percentage**
Top level	20	4
Middle level	50	11
Lower level	380	85
Total	**450**	**100**

Source: Judiciary (2019)

3.4.Sampling Procedure and Sample Size

Proportionate stratified random sampling technique was used to sample data on the basis of management levels to determine the sample size to be drawn from each category in the research study. Kombo and Tromp (2011) points out that it involves dividing the population into homogeneous sub groups and then taking a simple random sample from each group. The stratified random sampling method was the best suited for the study because the population consisted of different levels of employees working for the Kenyan Judiciary in Nairobi. This method was deemed appropriate because it was able to represent or extrapolate not only the overall population but also the key sub groups of the entire population. It also minimized biasness or subjectivity.

Kothari (2008) argues that random sampling ensures the law of statistical regularity which guarantees representativeness of the characteristics of the universe. According to Mugenda and Mugenda (2009), a sample size representing 10% of the target population is adequate. However, such a sample should have a minimum of 30 elements is recommended. In this case, the researcher decided to take 50% of the target population for the research sample which was deemed to be within the thresholds recommended according to Mugenda and Mugenda (2009) and Kothari (2008) as shown in Table 3.2. The study sample size was therefore taken at 225 people. Each person had however a calculable and non-zero probability of being selected.

Table 3.2 Distribution of Sample Size

Category	**Target population**	**Multiplier factor**	**Sample size**	**Percentage**
Top level	20	0.5	10	5
Middle level	50	0.5	25	11
Lower level	380	0.5	190	84
Total	**450**		**225**	**100**

Source: Judiciary (2019)

A sample of 225 respondents distributed proportionately across all management levels was to be selected from the target population. Top level management with the smallest population made the least contribution of 5%. However, lower level personnel however resulted in the largest contribution of 84%.

3.5.Data Source and Collection Instruments

The researcher chose to use primary data and secondary data. The study used questionnaires that were to be used to collect crucial primary information from the three levels of management personnel in Kenyan Judiciary headquarters in Nairobi. Kothari (2008) argues that the questionnaire method of data collection is quite popular, particularly in case of extensive enquiries. Closed-ended questions were used to provide more structured responses that were deemed appropriate for quantitative analysis and drawing of conclusion. Open-ended questions were tailored to provide additional information that may not be captured by the closed-ended questions.

The questionnaires were then dropped to the respondents and picked later to seek for detailed information. Data there from was later tabulated and subjected to a statistical manipulation under the study. Secondary data for this study was collected through document review from Kenya Judiciary records. These records included but not limited to The Judiciary Transformation Framework handbook and the Judiciary Strategic plan 2013-2018. The secondary data was used to verify and validate the primary data obtained from the respondents.

3.6.Data Validity and Reliability

3.6.1. Data Validity

According to Mugenda and Mugenda (2009), validity is concerned with the integrity of the conclusions that are generated from a piece of research. It is the degree to which an instrument measures what it purports to measure. It estimates how accurately the data in the study represents a given variable or construct in the study. Validity indicates usefulness of the research tool and shows correlation of constructs and how the study conceptualizes the ideas from the collected data.

The researcher did pre-test the questionnaire for validity through group discussions before the actual data collection was carried out. The researcher engaged ten respondents with ten questionnaires who discussed the contents and structure of the research instrument. Confirmatory factor analysis (CFA) was therefore conducted to test the instrument validity. According to Neumann (206), Confirmatory factor analysis is done to describe variability among observed variables and correlated variables in terms of lower number of unobserved/latent variables called factors. To establish the validity of the research instrument the study also sought for opinions of experts in the field of study especially the study's supervisors and lecturers in the school of business and communications.

Confirmatory factor analysis was used to establish construct validity for all the variables in this study. All of the items in the variables were then subjected to factor analysis, and were loaded in accordance with prior theoretical expectations. According to Neumann (2006), factor analysis helps in grouping variables with similar characteristics together. This helps in reducing a large number of variables for modeling purposes and to select subset variables from a large set, based on which original variables had the highest correlations with the factor. Squared factor loading then indicate what percentage of the variance in the original variables is explained by a factor. (Field, 2009).

3.6.2. Data Reliability

According to Treiman (2009), data reliability is the tendency towards consistency and different measures of the same concept or the same measurements repeated over time should produce the same results. Reliability is synonymous with the consistency of a test, survey, observation, or other measuring device. Reliability is commonly used in relation to the question of whether the measures that are devised for concepts in business are consistent.

A pilot study was then conducted involving ten respondents selected from the target population. The respondents involved in the pilot test were however then excluded from the sample selected for the final research. The purpose of the pilot research was to determine the reliability of questionnaire. Cronbach's alpha based on internal consistency was calculated using Statistical Package for Social Sciences (SPSS) version 21.0 programme to establish the reliability of the research instrument. This methodology measures the average of measurable items and its correlation. The index alpha was then computed for all items comprising each research variable and as such the aggregate reliability for the entire questionnaire was thus established. Field (2009) contends that Cronbach's alpha value that is at least between 0.70 and 0.9 suffices and thus a threshold of 0.70 was thus used to establish the reliability of the data collection instrument. The results of the reliability test pilot study are shown in table 3.3

Table 3.3 Reliability Test

Variables	Number of items	Cronbach Alpha
Supplier Performance	10	0.777
Communication Flow	10	0.788
Work process	10	0.754
Institutional Policies	10	0.702

Source: Author (2019)

The results show that supplier performance had a cronbach alpha of 0.777; communication flow had a cronbach alpha of 0.788; work process had a cronbach alpha of 0.754; while institutional policies had a cronbach alpha of 0.702. The results show that all the variables had a cronbach alpha of 0.7 and above. Therefore the results are consistent with Fieled, 2009 contention that a value of 0.7 is sufficient, and therefore the test was reliable.

3.7.Data Analysis Methods

The collected data was sorted and edited to remove errors and spot any inconsistencies resulting from the use of the questionnaire. Editing was to make coding more objective. There were codes assigned to the questionnaires which allowed the researcher to minimize errors during data entry and processing as well as provide easy interpretations of results. After coding, the data was then carefully keyed in according to the assigned codes and a final check done on the data file for accuracy, erroneous data, completeness and inconsistencies. Both descriptive and factor statistical techniques were then used. Quantitative data was

analyzed using descriptive and inferential statistics. Descriptive statistics included percentage, frequency, mean, and standard deviation while inferential statistics involved regression. According to Noum (2007) the use of descriptive statistics is fundamental in organizing research data as it serves to summarize data on the questionnaires.

The study was thus guided by multiple regression models presented below.

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

Where;

Y = Inventory management

X_1= Supplier performance

X_2= Communication flow

X_3= Work Process

X_4= Institutional policies

$\beta_1, \beta_2, \beta_3, \beta_4$ = Beta coefficients

ε = Error term

Multiple regression analysis was then conducted using SPSS. Analysis of variance was used to test whether the overall model was statistically significant by indicating whether or not R^2 could have occurred by chance alone. The F-ratio generated in the ANOVA table was then used to measure the probability of chance departure from a straight line. In case the p value of the F-ratio generated is less than .05 the model is usually considered statistically significant at 95% confidence level. For the individual variables, *p* values of their coefficients generated in the regression analysis must be less than .05 for their relationship to be concluded significant at 95% confidence level. Qualitative data from open ended questions was then analyzed on the basis of common themes and presented in a narrative form.

3.8.Ethical issues

According to Zhang (2010), ethics involves making a judgment about right and wrong behavior. In this research study, confidentiality was upheld as the information relating to the study is critical to the institution of the Kenyan Judiciary. As noted by Mugenda and

Mugenda (2008) the researcher made sure to avoid the use of questions that are embarrassing and irrelevant, as well as those with threatening language or are likely to make respondents nervous. The researcher made sure that names of the respondents remained anonymous throughout the research study course.

Moreover, the researcher also made use of codes so as to uphold confidentiality of the information obtained through the responses recorded in the questionnaire. A letter of authority to undertake the research was also obtained from the National Commission for Science, Technology and Innovation (NACOSTI), after paying the requisite fees. At the organizational level, the researcher sought permission from the human resources manager of the Kenyan Judiciary as well as an informed consent obtained from individual participants. The researcher ensured and assured the respondents of confidentiality in handling all the information received from them. The respondents were then assigned code numbers to affix on the questionnaires instead of revealing their personal identities. This was done to ensure that their identities remained anonymous throughout the research period.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1.Introduction

This chapter presents a discussion on the interpretation and presentation of the findings and gives an analytical presentation of the data collected on the assessment of the influence of electronic data interchange on inventory management in the Kenyan Judiciary headquarters in Nairobi. Equally, the chapter gives the main findings and results of the research.

4.2.The Respondents' Response Rate in the Kenyan judiciary Head quarters

The study sought to find out the response rate of the respondents who were given the questionnaires. The results are presented in table 4.1**.**

Table 4.1 Response Rate the of respondents in the Kenyan judiciary Head quarters

Statistics					
		Gender	**Age in years**	**Highest level of education**	**Position in the Kenya Judiciary**
N	Valid	165	165	165	165
	Missing	60	60	60	60
	Total	**225**	**225**	**225**	**225**

Source: Researcher (2019)

The study targeted 225 respondents for purpose of collecting data. Results in table 4.1 show that 165 out of targeted 225 respondents filled and submitted in the questionnaires a representation of 73.3% response rate. This response rate was thus good and representative and is in conformity with Mugenda and Mugenda (2009) contention that a response rate of 50% is adequate for analysis and research reporting; a response of 73.3% therefore is excellent. This commendable response rate was made achievable by the fact that the researcher sought for services of research assistants who assisted to administer and later to collect the questionnaires. This response rate is adequate for analysis and reporting. However, 60 respondents contributing to 26.7% did not return the questionnaires.

4.3.Respondents' Demographic Characteristics

4.3.1. Gender of the Respondents in the Kenya Judiciary Head Quarters

The researcher made attempt to establish the gender of the respondents as shown in table 4.2 and figure 4.1

Table 4.2: Gender of the Respondents in the Kenya Judiciary Head quarters

		Gender			
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Male	90	54.5	54.5	54.5
	Female	75	45.5	45.5	**100.0**
	Total	**165**	**100.0**	**100.0**	

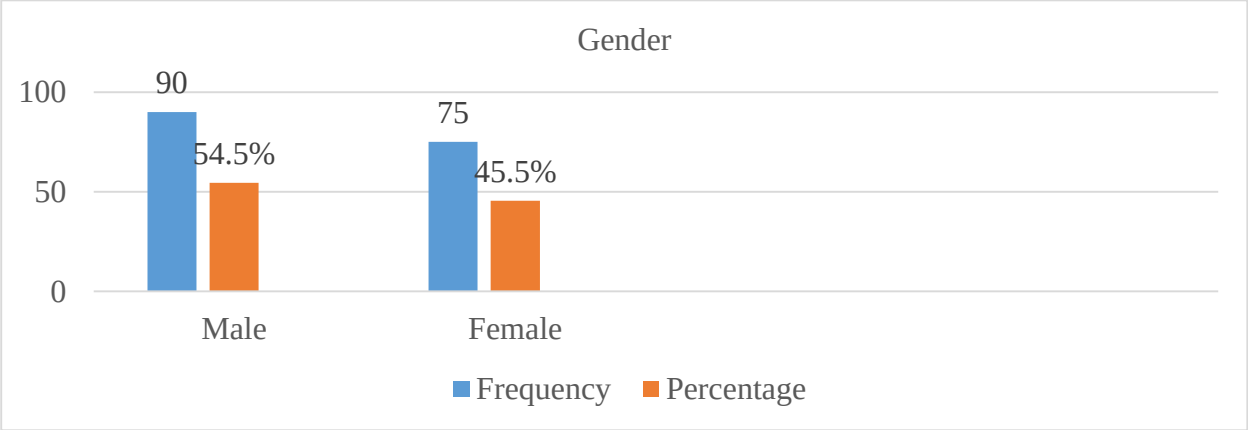


Figure 4.1: Gender of Employees in the Kenya judiciary Head quarters

Source: Researcher (2019)

According to the findings, majority of the respondents were male as represented by a frequency of 90 translating to 54.5% of the total respondents. The rest of the respondents were female employees as represented by a frequency of 75 and translating to 45.5% of the total respondents.

4.3.2. Age Brackets of the Respondents in the Kenyan Judiciary Head Quarters

The researcher sought to find out the age in years of the respondents. The findings are presented in table 4.3 and figure 4.2

Table 4.3: The Age in years of the Respondents in the Kenyan Judiciary head quarters

		Age in years			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 – 25 Years	25	15.2	15.2	15.2
	26 - 35 Years	36	21.8	21.8	37.0
	36 – 45 Years	65	39.4	39.4	76.4
	46 years and above	39	23.6	23.6	**100.0**
	Total	**165**	**100.0**	**100.0**	

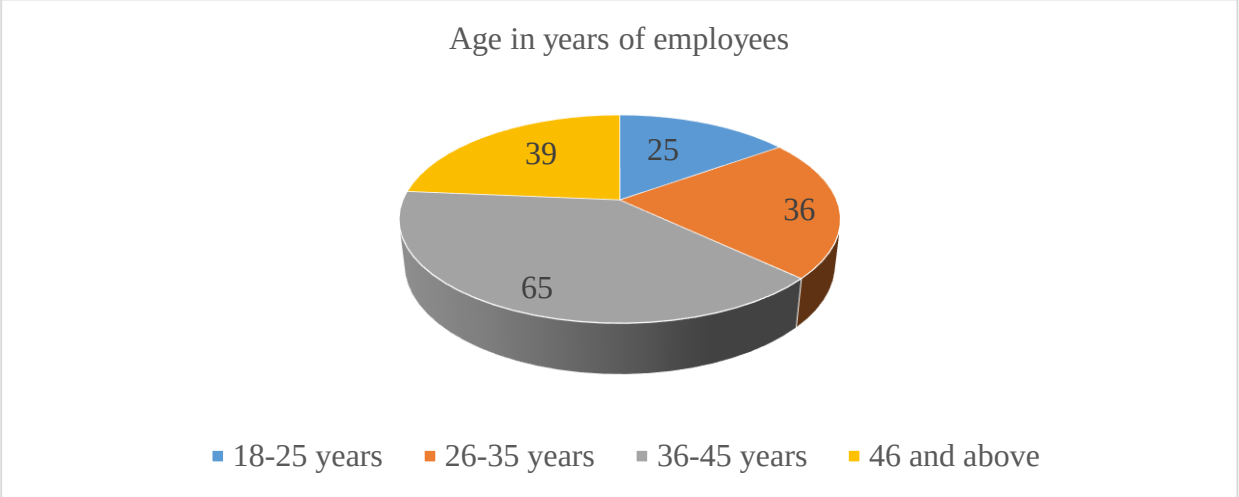


Figure 4.2: Age in years of employees in the Kenya Judiciary Head quarters

Source : Researcher (2019)

According to the findings, majority of the respondents were between the ages of 36 to 45 years as represented by a frequency of 65 which translated to 39.4%; a frequency of 39 of the respondents which translated to 23.6% were between 46 and above years of age. Respondents who were between 26 to 35 years represented a frequency of 36 which translated to 21.8% of the total respondents; while a frequency of 25 that translated to 15.2% of the total respondents were between 18 to 25 years of age.

4.3.3. Highest Level of Education of the Employees in the Kenya Judiciary Head quarters

The researcher also made attempt to find out the highest level of education of the respondents from the data obtained. This is presented in table 4.4 and figure 4.3

Table 4.4: Highest Level of Education of respondents in the Kenyan Judiciary Head quarters

		Highest level of education			
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Secondary school	45	27.3	27.3	27.3
	College	50	30.3	30.3	57.6
	University	70	42.4	42.4	**100.0**
	Total	**165**	**100.0**	**100.0**	

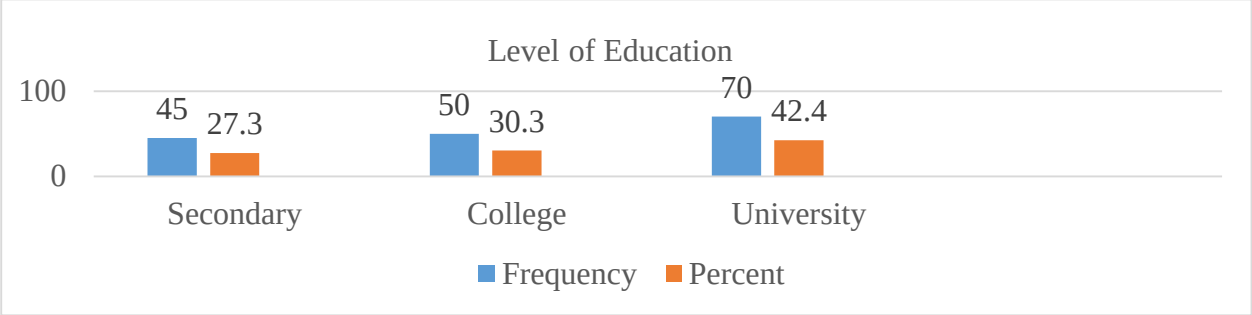


Figure 4.3: Highest level of Education of Employees in Kenyan Judiciary head quarters

Source: Researcher (2019)

Majority of the respondents were university graduates as shown by a frequency of 70 which translated to 42.4% of the total respondents. A frequency of 50 respondents which translated to 30.3% of the respondents had attained college level of education; whereas 27.3% representing a frequency of 45 members among the respondents were secondary school leavers.

4.3.4. Management position of the respondents in the Kenyan Judiciary Head quarters

The researcher also made attempts to find out the managerial position held by the respondents in the Kenyan judiciary. The findings are given in table 4.5 and figure 4.4

Table 4.5: Managerial position of the respondents in the Kenyan Judiciary head quarters

Position in the Kenya Judiciary					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Top level management	4	2.4	2.4	2.4
	Middle level management	18	10.9	10.9	13.3
	Lower level management	143	86.7	86.7	**100.0**
	Total	**165**	**100.0**	**100.0**	

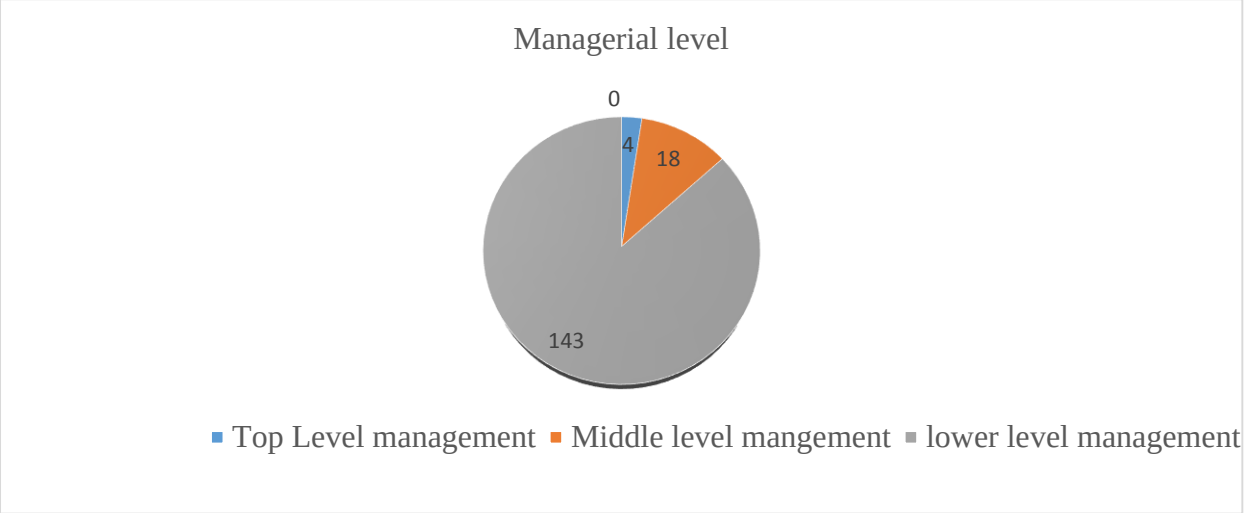


Figure 4.4: Management Position held by Employees in Kenyan Judiciary Head quarters

Source: Researcher (2019)

Majority of the respondents were in the lower level managerial positions as expressed by 86.7% of those who returned the questionnaires: this was returned by a frequency of 143 members. Middle level managers represented 10.9% from the total sample which was returned by a frequency of 18 members; whereas 2.4% of the respondents representing a frequency of 4 members of the total sample comprised top level management.

4.4.Descriptive Analysis of the Research Study

This section is dedicated to descriptive analysis of the study variables and how they influence electronic data interchange on inventory management in the Kenyan Judiciary. It covers the assessment of supplier performance, communication flow, work process and institutional

policies on influence of electronic data interchange on inventory management in the Kenyan Judiciary, and a section describing the effect of inventory management techniques on inventory management in the Kenyan Judiciary.

4.4.1. Supplier performance and Inventory Management in the Kenyan Judiciary

The researcher sought to determine the extent to which supplier performance influences inventory management in Kenyan Judiciary owing to specific indicators as presented in table 4.6 and figure 4.5

Table 4.6 Extent to which Supplier Performance Influences Inventory Management in the Kenyan Judiciary.

Descriptive Statistics					
Indicators	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Lead times	165	1	4	2.91	1.029
Product availability	165	1	4	3.00	.855
Supplier flexibility	165	1	4	3.02	.826
Communication networks	165	1	4	3.27	.742
Valid N (list wise)	165				

Lead times					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Don't know	20	12.1	12.1	12.1
	Little extent	35	21.2	21.2	33.3
	Moderate extent	50	30.3	30.3	63.6
	Great extent	60	36.4	36.4	**100.0**
	Total	**165**	**100.0**	**100.0**	

Product availability					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Don't know	10	6.1	6.1	6.1
	Little extent	30	18.2	18.2	24.2
	Moderate extent	75	45.5	45.5	69.7
	Great extent	50	30.3	30.3	100.0
	Total	165	100.0	100.0	

Supplier flexibility

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	9	5.5	5.5	5.5
	Little extent	27	16.4	16.4	21.8
	Moderate extent	80	48.5	48.5	70.3
	Great extent	49	29.7	29.7	**100.0**
	Total	**165**	**100.0**	**100.0**	

Communication Networks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	5	3.0	3.0	3.0
	Little extent	14	8.5	8.5	11.5
	Moderate extent	78	47.3	47.3	58.8
	Great extent	68	41.2	41.2	**100.0**
	Total	**165**	**100.0**	**100.0**	

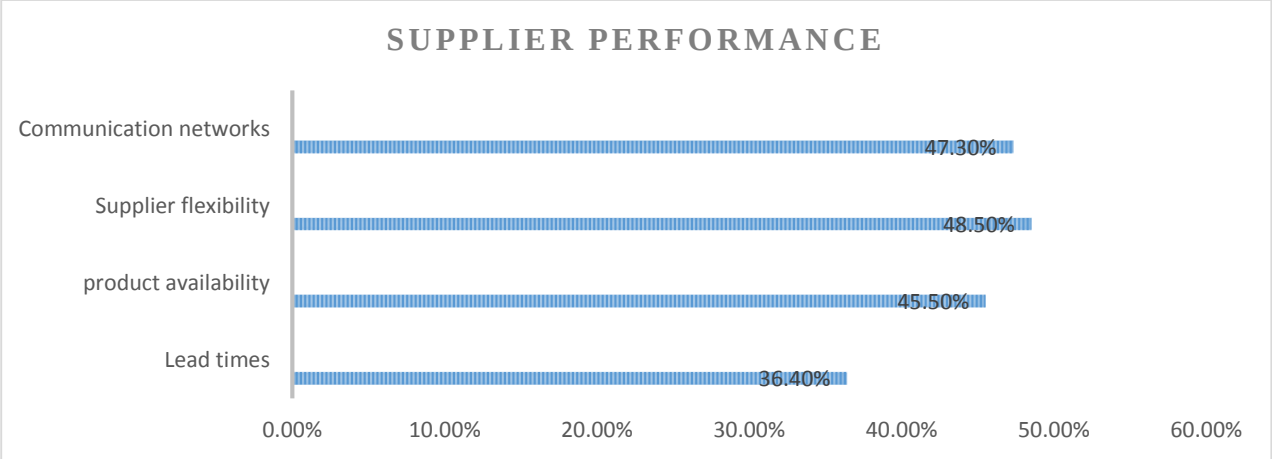


Figure 4.5: Extent to which Supplier Performance influences Inventory Management in the Kenyan Judiciary

Source: Researcher (2019)

From the findings, lead times to a great extent influence inventory management as expressed by a percentage score of 36.4%; moderate extent was expressed by 30.3%; little extent was expressed by 21.2%; while 12.1% of the respondents said that they did not know. These percentages on lead times are represented by frequencies of 60, 50, 35, and 20 respectively.

Product availability, supplier flexibility, and communication networks influence inventory management to a moderate extent as expressed by percentage scores of 45.5%, 48.5% and 47.3% respectively; which percentages translate to frequencies of 75, 80 and 78 respectively. On product availability, supplier flexibility, and communication networks, 18.2%, 16.4% and 8.5% of the respondents returned an expression of little extent; while 6.1%, 5.5% and 3.0% said that they did not know to which extent supplier performance influences inventory management in the Kenya judiciary. From the aggregate percentage scores therefore, lead times influence electronic data interchange on inventory management to a great extent as expressed by a percentage score of 36.4% followed by communication networksat41.2%, product availability at 30.3%, and supplier flexibility at 29.7% based on the structure of the four point likert scale in the questionnaire and the analysis from the SPSS tables.

The researcher also sought to establish whether the use of technology such as Electronic Data Interchange would enhance supplier performance in inventory management in the Kenyan Judiciary. The findings are represented in table 4.7

Table 4.7: Would the Use of Technology Such as EDI Enhance Supplier Performance in Inventory Management?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	141	85.5	85.5	85.5
	No	24	14.5	14.5	**100.0**
	Total	**165**	**100.0**	**100.0**	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Do you think the use of technology such as Electronic data interchange would enhance supplier performance in inventory management in the Kenyan Judiciary?	165	1	2	1.15	.354
Valid N (list wise)	165				

Source: Researcher (2019)

From the findings 85.5% representing a frequency of 141 of the total respondents opined that Electronic Data Interchange would enhance supplier performance in inventory management

in the Kenyan judiciary, while 14.5% representing a frequency of 24 of the total respondents thought otherwise as they returned a "no" response meaning they did not think the use of technology such as electronic data interchange would enhance supplier performance in inventory management in the Kenyan Judiciary. On the open ended question in the questionnaire, greatest number of the respondents were of the opinion that supplier performance would be enhanced by technology such as electronic data interchange since there will be fast communication between the procurement unit and the suppliers which would result to quicker operations and better service delivery.

4.4.2. Communication flow and Inventory management in the Kenyan Judiciary

The researcher also made attempts to determine the extent to which communication flow influenced inventory management in the Kenya Judiciary based on various indicators in the questionnaire. The findings are represented in table 4.8 and figure 4.6

Table 4.8: Extent to which communication flow influences inventory management

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Internet connectivity	165	1	4	3.11	.733
Computerized networks	165	1	4	3.12	.768
ERP(Enterprise Resource Planning) platform	165	1	4	2.88	.961
Valid N (list wise)	165				

Internet connectivity					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Don't know	5	3.0	3.0	3.0
	Little extent	21	12.7	12.7	15.8
	Moderate extent	90	54.5	54.5	70.3
	Great extent	49	29.7	29.7	100.0
	Total	165	100.0	100.0	

Computerized Networks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	7	4.2	4.2	4.2
	Little extent	19	11.5	11.5	15.8
	Moderate extent	87	52.7	52.7	68.5
	Great extent	52	31.5	31.5	100.0
	Total	165	100.0	100.0	

Enterprise Resource planning Platform

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	19	11.5	11.5	11.5
	Little extent	30	18.2	18.2	29.7
	Moderate extent	68	41.2	41.2	70.9
	Great extent	48	29.1	29.1	100.0
	Total	165	100.0	100.0	

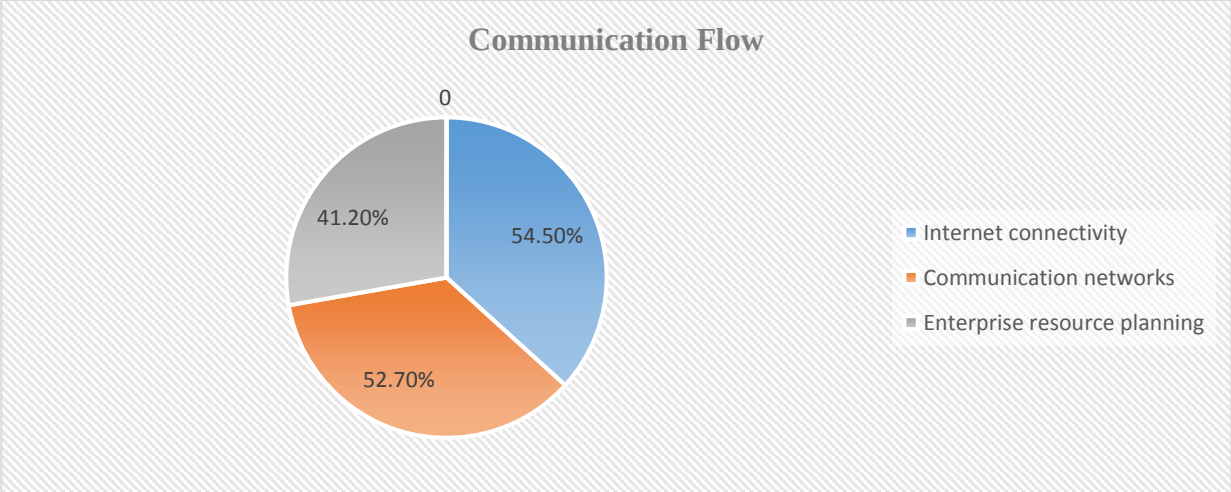


Figure 4.6: Extent to which Communication flow Influences Inventory Management in the Kenyan Judiciary

Source: Researcher (2019)

From the findings it was established that internet connectivity influenced electronic data interchange on inventory management in the Kenyan judiciary to a moderate extent as expressed by a percentage score of 54.5% representing a frequency of 90 respondents.

Likewise communication networks were found to influence electronic data interchange on inventory management in the Kenyan judiciary to a moderate extent as represented by a percentage score of 52.7% which represented a frequency of 87 respondents. Equally, enterprise resource planning platforms were found to influence electronic data interchange in inventory management in the Kenyan Judiciary to a moderate extent as expressed by a percentage score of 41.2% representing a frequency of 68 respondents on the four point likert scale used in the research questionnaire and as shown on the statistical analysis from the SPSS table.

On internet connectivity indicator, 49 respondents (29.7%) indicated great extent, 21 respondents (12.7%) indicated little extent, while 5 respondents (3.0%) said that they did not know the extent to which communication flow influences inventory management. On computerized networks indicator, 52 respondents (31.5%) indicated great extent, 19 respondents (11.5%) expressed little extent, while 7 respondents (4.2%) said they did not know the extent to which communication flow influences inventory management in the Kenyan judiciary. On enterprise resource planning platforms indicator, 48 respondents (29.1%) expressed a great extent, 30 respondents (18.2%) expressed a little extent, while 19 respondents (11.5%) said that they did not know the extent to which communication flow influences inventory management in the Kenyan Judiciary.

The researcher sought also to determine whether EDI would enhance communication flow in inventory management in the Kenyan Judiciary. The findings are in table 4.9

Table 4.9: Whether EDI will Enhance Communication Flow in Inventory Management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	138	83.6	83.6	83.6
	No	27	16.4	16.4	100.0
	Total	165	100.0	100.0	

Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Do you think electronic data interchange will enhance communication flow in inventory management in the Kenya Judiciary	165	1	2	1.16	.371
Valid N (list wise)	165				

Source: Researcher (2019)

From the findings, 83.6%the total responses representing a frequency of 138 out of the total respondents agreed that electronic data interchange usage would enhance communication flow while 16.4%, representing a frequency of 27 respondents felt that electronic data interchange will not enhance communication flow in inventory management in the Kenya Judiciary. On the open ended question, majority of the respondents expressed the opinion that the use of technology will ease communication flow making operations to be faster and efficient for better service delivery.

4.4.3. Work Process and Inventory Management

The study sought to explore the extent to which work process influences inventory management based on various indicators including management support, total quality management, and staff training. The findings are presented in table 4.10 and figure 4.7

Table 4.10: The extent to which work process influence inventory management in the Kenyan Judiciary.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Management support	165	1	4	3.12	.728
Total quality management	165	1	4	3.15	.746
Staff training	165	1	4	2.99	.866
Valid N (list wise)	165				

Management support

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	7	4.2	4.2	4.2
	Little extent	14	8.5	8.5	12.7
	Moderate extent	97	58.8	58.8	71.5
	Great extent	47	28.5	28.5	**100.0**
	Total	**165**	**100.0**	**100.0**	

Total quality management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	4	2.4	2.4	2.4
	Little extent	23	13.9	13.9	16.4
	Moderate extent	82	49.7	49.7	66.1
	Great extent	56	33.9	33.9	**100.0**
	Total	**165**	**100.0**	**100.0**	

Staff Training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	12	7.3	7.3	7.3
	Little extent	26	15.8	15.8	23.0
	Moderate extent	78	47.3	47.3	70.3
	Great extent	49	29.7	29.7	**100.0**
	Total	**165**	**100.0**	**100.0**	

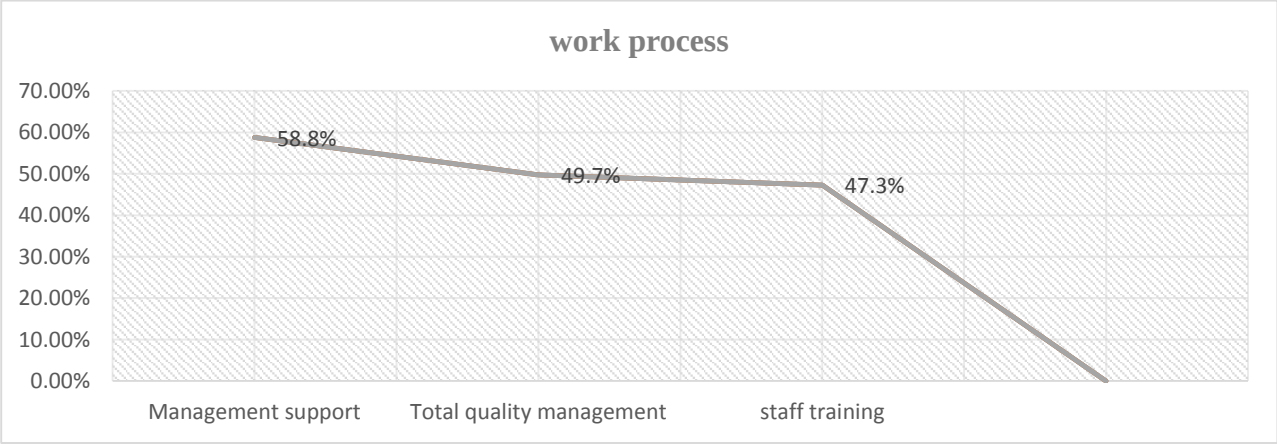


Figure 4.7: Extent to which work Process influence Inventory Management

Source: Researcher: (2019)

According to the findings, it was clear that management support influenced electronic data interchange on inventory management in the Kenyan Judiciary to a moderate extent as expressed by a percentage score of 58.8% and as expressed by majority of the respondents represented by a frequency of 97 members. However, 28.5% representing a frequency of 47 members returned a response of great extent. 8.5%, representing a frequency of 14 members returned a response of little extent while 4.2%, representing a frequency of 7 members said they did not know the extent to which work process influence electronic data interchange on inventory management in the Kenyan Judiciary. The respondents also indicated that total quality management influenced electronic data interchange on inventory management in the Kenyan Judiciary to a moderate extent as expressed by a percentage mean score of 49.7% representing a frequency of 82 members. However 33.9%, representing a frequency of 56 respondents expressed an opinion of great extent. 13.9% representing a frequency of 23 respondents returned an opinion of little extent while only 2.4% equivalent o a frequency of 4 respondents said that they did not know the extent to which work process influenced inventory management in the Kenyan Judiciary. It was also evident that staff training to a moderate extent influenced electronic data interchange on inventory management in the Kenyan Judiciary as expressed by a high percentage score of 47.3% representing a frequency of 78 members. But 29.7% representing a frequency of 49 members returned a verdict of great extent. 15.8%, equivalent of frequency of 26 members returned a verdict of little extent while 7.3%, an equivalent of a frequency of 12 people said they did not know the extent to which work process influenced inventory management in the Kenyan Judiciary. From the above findings, work process would influence electronic data interchange on inventory management to a moderate extent as expressed by the percentage scores of 58.8%, 49.7% and 47.3% based on the four point Likert scale in the questionnaire and the statistics exhibited by the SPSS tables.

The researcher equally sought to establish whether Electronic data interchange application would enhance work process in inventory management in the Kenyan Judiciary. The results are in table 4.11

Table 4.11: Whether the Application of Electronic Data Interchange will Enhance Work Process in Inventory Management in the Kenyan Judiciary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	93	56.4	56.4	56.4
	No	72	43.6	43.6	**100.0**
	Total	**165**	**100.0**	**100.0**	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Do you think electronic data interchange will affect work process in inventory management in the Kenya Judiciary?	165	1	2	1.44	.497
Valid N (list wise)	165				

Source: Researcher (2019)

From the findings, 56.4%, representing a frequency of 93 respondents said yes, that application of electronic data interchange would enhance work process in inventory management in the Kenyan Judiciary. However, 43.6% representing a frequency of 72 respondents felt that use of Electronic Data Interchange would not enhance work process in inventory management in the Kenyan Judiciary on the aspect of the open ended question majority of the respondents opined that electronic data interchange would affect work process in a positive way and make work easier thereby enhancing service delivery.

4.4.4. Institutional Policies and Inventory Management in the Kenyan Judiciary

The researcher further sought to determine the extent to which institutional policies influence inventory management in the Kenyan Judiciary based on specific indicators namely procurement guidelines, communication channels, and supplier relationships. Findings are presented in table 4.12 and figure 4.8

Table 4.12: Extent to Which Institutional Policies influence Inventory Management in the Kenyan Judiciary

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Procurement guidelines	165	1	4	3.37	.798
Communication channels	165	1	4	3.21	.739
Supplier relationship	165	1	4	3.32	.661
Valid N (list wise)	165				

Procurement guidelines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	5	3.0	3.0	3.0
	Little extent	18	10.9	10.9	13.9
	Moderate extent	53	32.1	32.1	46.1
	Great extent	89	53.9	53.9	**100.0**
	Total	**165**	**100.0**	**100.0**	

Communication channels

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	1	.6	.6	.6
	Little extent	28	17.0	17.0	17.6
	Moderate extent	71	43.0	43.0	60.6
	Great extent	65	39.4	39.4	**100.0**
	Total	**165**	**100.0**	**100.0**	

Supplier relationship

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	3	1.8	1.8	1.8
	Little extent	9	5.5	5.5	7.3
	Moderate extent	86	52.1	52.1	59.4
	Great extent	67	40.6	40.6	**100.0**
	Total	**165**	**100.0**	**100.0**	

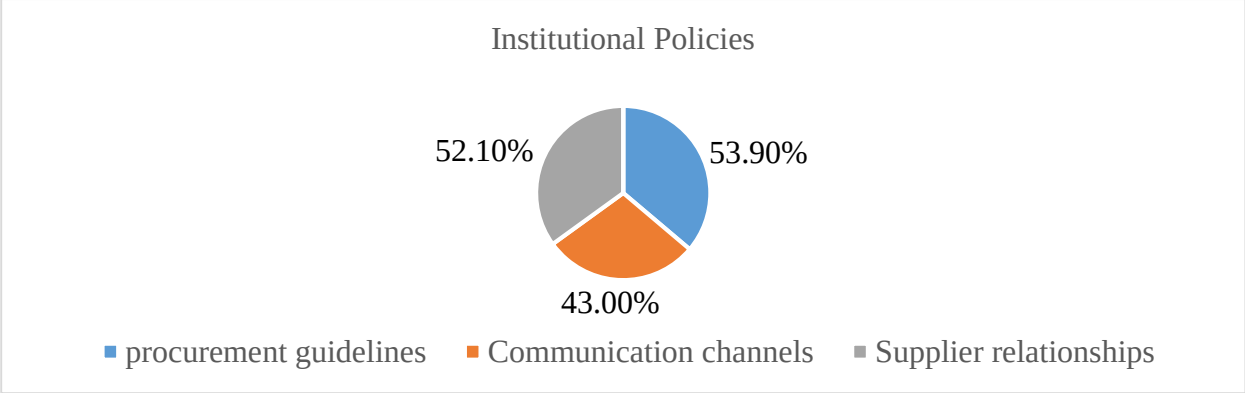


Figure 4.8: Extent to Which institutional Policies Influence inventory management in the Kenyan judiciary.

Source: Researcher (2019)

From the findings, it was evident procurement guidelines influenced electronic data interchange on inventory management in the Kenyan judiciary to a great extent as expressed by a percentage score of 53.9% from a frequency of 89 respondents. Moderate extent was expressed by 32.1% respondents representing a frequency of 53 members. 10.9% of the respondents representing a frequency of 18 members returned a verdict of little extent while 3.0% equivalent to 5 members said they did not know the extent to which institutional policies influenced inventory management in the Kenyan judiciary. On the other hand, communication channels were found to influence electronic data interchange on inventory management in the Kenyan Judiciary to a moderate extent as expressed by a percentage score of 43.0% representing a frequency of 71 respondents. 39.4%, an equivalent of 65 members returned a verdict of great extent; while 17.0% representing 28 respondents said little extent.

Only 0.6% representing 1 respondent said they did not know the extent to which institutional policies influenced inventory management in the Kenyan Judiciary. It was also established that supplier relationships influenced electronic data interchange on inventory management in the Kenyan Judiciary to moderate extent as evidenced by a percentage score of 52.1% representing a frequency of 86 respondents. 40.6% of the respondents representing a frequency of 67 members returned an opinion of great extent; while 5.5% or equivalent of 9 respondents returned an opinion of little extent. Only 1.8%, an equivalent of 3 respondents said that they did not know the extent to which institutional policies influenced inventory management in the Kenyan judiciary based on four point likert scale in the study questionnaire and as evidenced by the table matrices extracted from the SPSS application.

The study also sought to find out whether application of Electronic Data Interchange would enhance institutional policies in inventory management in the Kenyan Judiciary. The findings are in table 4.13 and figure 4.9

Table 4.13: Whether Application of Electronic Data Interchange Would Enhance Institutional Policies in Inventory management in the Kenyan Judiciary

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Do you think electronic data interchange will enhance institutional policies on inventory management in the Kenya Judiciary	165	1	2	1.45	.499
Valid N (list wise)	165				

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Yes	91	55.2	55.2	55.2
	No	74	44.8	44.8	**100.0**
	Total	**165**	**100.0**	**100.0**	

Source: Researcher (2019)

From the results, 55.2% representing a frequency of 91 respondents out of all the responses agreed that Electronic Data Interchange would enhance institutional policies in inventory management in the Kenyan Judiciary while 44.8% translating to a frequency of 74 respondents said no, that application of electronic data interchange will not enhance inventory management in the Kenyan judiciary.

4.4.5. Inventory Management Techniques

The researcher further made attempt to establish the extent to which various techniques affected inventory management in the Kenyan Judiciary based on three indicators viz: Just-in-Time technique, materials resource planning technique, and Enterprise resource planning technique. The findings are shown in table 4.14 and figure 4.9

Table 4.14: The Extent to Which Various Techniques Affect Inventory Management in Kenyan Judiciary

Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
Just-In-Time (JIT)	165	1	4	3.05	.871
Material resource planning (MRP)	165	1	4	3.39	.763
Enterprise Resource Planning (ERP)	165	1	4	3.44	.775
Valid N (list wise)	165				

Just-In-Time (JIT)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Don't know	13	7.9	7.9	7.9
	Little extent	19	11.5	11.5	19.4
	Moderate extent	79	47.9	47.9	67.3
	Great extent	54	32.7	32.7	100.0
	Total	165	100.0	100.0	

Materials Resource planning					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Don't know	4	2.4	2.4	2.4
	Little extent	16	9.7	9.7	12.1
	Moderate extent	56	33.9	33.9	46.1
	Great extent	89	53.9	53.9	**100.0**
	Total	**165**	**100.0**	**100.0**	

Enterprise Resource Planning (ERP)					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Don't know	7	4.2	4.2	4.2
	Little extent	8	4.8	4.8	9.1
	Moderate extent	56	33.9	33.9	43.0
	Great extent	94	57.0	57.0	**100.0**
	Total	**165**	**100.0**	**100.0**	

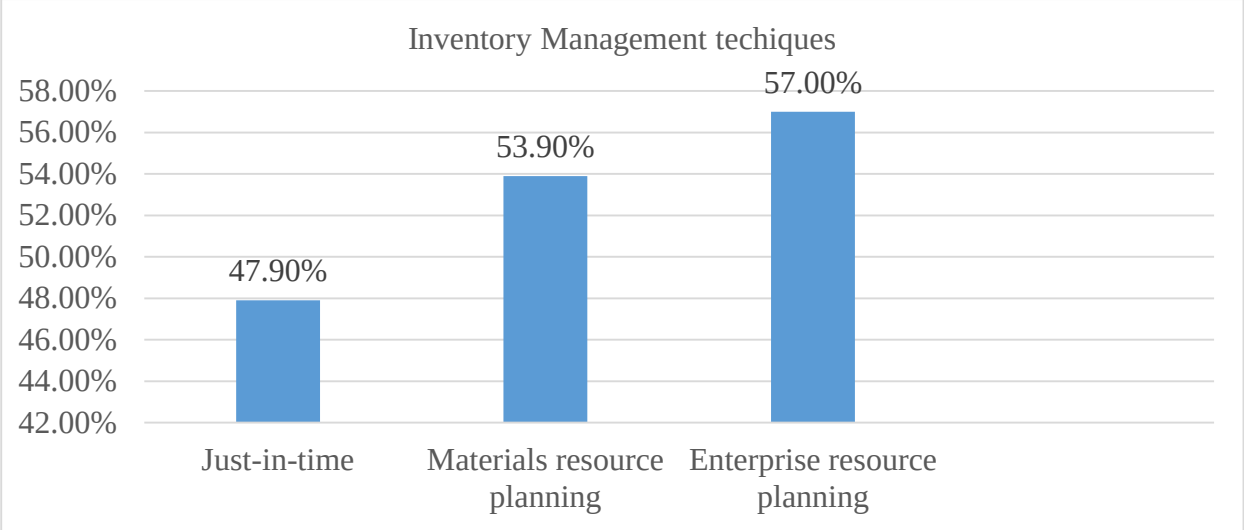


Figure 4.9: Extent to which various techniques Affect Inventory Management
Source: Researcher (2019)

From the findings, Just-In-Time inventory management technique was found to influence electronic data interchange in inventory management in the Kenyan judiciary to a moderate extent as expressed by a percentage score of 47.9% representing a frequency of 79 respondents. 32.7% representing a frequency of 54 members felt that the inventory techniques affected inventory management to a great extent. 11.5% representing a frequency of 19 members returned a verdict of little extent; while only 7.9% representing a frequency of 13 respondents said that they did not know. Materials resource planning inventory management technique on the other hand was found to influence electronic data interchange on in inventory management in the Kenyan Judiciary to a great extent as represented by a percentage score of 53.9% from a frequency of 89 respondents. Moderate extent response had 33.9% from 56 respondents while little extent response had 9.7%, an equivalence of a frequency of 4 respondents. Enterprise Resource planning was found to influence electronic data interchange on inventory management in the Kenyan judiciary to a great extent. This was represented by a percentage score of 57.0% from a frequency of 94 respondents. On the other hand, moderate extent response was scored 33.9% from a frequency of 56 respondents while little extent response managed 4.8% from a frequency of 8 members. Only 4.2% representing a frequency of 7 respondents said they did not know the extent to which the enterprise resource planning affected inventory management in the Kenyan Judiciary. These statistics are based on the four point likert scale used in the research questionnaire and the SPSS table.

The researcher likewise sought to determine whether application of techniques related to EDI would enhance inventory management in the Kenyan Judiciary. The findings are in table 4.15

Table 4.15: Whether Application of Techniques related to EDI would enhance Inventory Management in the Kenyan Judiciary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	102	61.8	61.8	61.8
	No	63	38.2	38.2	**100.0**
	Total	**165**	**100.0**	**100.0**	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Do you think the application of the above JIT, MRP and ERP technologies which are related to EDI will enhance inventory management in the Kenya Judiciary	165	1	2	1.38	.487
Valid N (list wise)	165				

Source: Researcher (2019)

From the findings, 61.8% representing a frequency of 102 respondents out of the total respondents agreed that the stated techniques would enhance inventory management in the Kenyan Judiciary, whereas 38.2% representing a frequency of 63 respondents felt that the stated inventory management techniques would not enhance inventory management in the Kenyan Judiciary.

4.5.Inferential Analysis

The study used multiple regression analysis to determine relationship between the four elements of Electronic Data Interchange (EDI) and inventory management in the Kenyan Judiciary. The findings are represented in table 4.16

Table 4.16: Regression Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967[a]	.935	.933	.59504

a. Predictors: (Constant), Institutional Policies, Communication Flow, Supplier Performance, Work Process

Source: Research (2019)

The findings of the multiple regression, presents the model summary of the combined effect of supplier performance, communication flow, work process and institutional policies on inventory management in the Kenyan Judiciary. The analysis gives an R value of 0.967and an R square value of 0.935. This means that the EDI factors notably; supplier performance, communication flow, work process and institutional policies account for 93.5% in the variability in the inventory management in the Kenyan Judiciary. 6.5% in variability for the inventory management in the Kenyan Judiciary can be attributed to other factors.

ANOVA (Analysis Of Variance) was used to test the claim that there is no significant relationship between the independent variables (Electronic Data Interchange factors) and the dependent variable (inventory management). The ANOVA results are presented in table 4.17

Table 4.17: ANOVA Results

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	810.161	4	202.540	572.039	.000[b]
	Residual	56.651	160	.354		
	Total	866.812	164			

a. Dependent Variable: Inventory Management

b. Predictors: (Constant), Institutional Policies, Communication Flow, Supplier Performance, Work Process

Source: Researcher (2019)

The significance value is 0.000 which is less than *p*=0.05 thus the model is statistically significant in predicting how Electronic Data Interchange influence inventory management in the Kenyan Judiciary. The F critical at 5% level of significance was 3.23. Since F calculated is greater than the F critical (value = 9.475), this shows that the overall model was significant in predicting the Electronic Data Interchange factors influencing inventory management in the Kenyan Judiciary.

The study also analyzed the regression coefficients which is represented in table 4.18 below

Table 4.18: Regression Coefficients

		Coefficients [a]				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	**T**	**Sig.**
1	(Constant)	-.036	.293		-.124	.901
	Supplier Performance	.148	.086	.213	1.720	.087
	Communication Flow	.034	.128	.036	.266	.790
	Work Process	.118	.140	.116	.841	.401
	Institutional Policies	.679	.078	.616	8.724	.000

a. Dependent Variable: Inventory Management

Source: Researcher (2019)

Table above presents the results of the coefficients analysis of Electronic Data Interchange factors for inventory management in a combined regression analysis. The main objective of this study was to assess the influence of electronic data interchange on inventory management in the Kenyan judiciary. The research adopted the multiple regression to establish a link between the outcomes of the independent variables and the dependent variable. The regression formula adopted for the combined study variables is:

$Y = \boldsymbol{\alpha} + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

Where;

Y = Inventory management

X_1= Supplier performance

X_2= Communication flow

X_3= Work Process

X_4= Institutional policies

β_1, β_2, β_3, β_4 = Beta coefficients

ε = Error term

α = Constant

From the findings in table 4.18 we can extract the regression equation as:

Y = -0.36 + 0.148 Supplier performance + 0.034 Communication flow + 0.118 Work Process + 0.679 Institutional policies

From the above regression model, taking supplier performance, communication flow, work process and institutional policies, the inventory management in the Kenyan judiciary will be 0.36. The findings also show that taking all other independent variables at constant, a unit increase in institutional policies, will lead to a 0.679 increase in the inventory management in the Kenyan judiciary with a p value of 0.000; a unit increase in supplier performance will lead to a 0.148 increase in inventory management in the Kenyan judiciary with a p value of .087. The study also found that a unit increase in communication flow would result to a 0.0344 increase in inventory management in the Kenyan judiciary a p value of 0.790. The study also found that a unit increase in work process would result to a 0.118 increase in inventory management in the Kenyan judiciary a p value of 0.401. The study concludes that institutional policies have a significant effect on the inventory management in the Kenyan judiciary with P value of 0.000. However, the study found out that there is a positive but insignificant effect between supplier performance, communication flow and work process and inventory management in the Kenyan judiciary.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1.Introduction

This chapter presents a summary of the entire research study as guided by the objectives of the research study, research questions and the research methodology as stated earlier. It equally presents conclusions and recommendations drawn from the findings on the influence of electronic data interchange on inventory management in the Kenyan judiciary. The chapter equally relates the suggestions on areas of further study. The purpose of the study was to assess the influence of electronic data interchange on inventory management in the Kenyan judiciary.

The study was guided by the following research questions: what is the influence of supplier performance on inventory management in the Kenyan Judiciary? How does communication flow influence inventory management in the Kenyan Judiciary? Does work process influence inventory management in the Kenyan Judiciary? What is the influence of institutional policies on inventory management in the Kenyan Judiciary? These were drawn from specific objectives: to determine the influence of supplier performance on inventory management in the Kenyan Judiciary; to establish the influence of communication flow on inventory management in the Kenyan judiciary; to determine the influence of work process on inventory management in the Kenyan Judiciary; and to establish the influence of institutional policies on inventory management in the Kenyan judiciary.

The study employed a descriptive research design with a sample size population of 225 employees of the Kenyan judiciary stationed in Nairobi judiciary headquarters. Data was collected using questionnaires from a total of 225 respondents. However, there were only 165 respondents who returned duly filled questionnaires. The questionnaire captured the respondents' perception about influence of electronic data interchange on inventory management in the Kenyan Judiciary. The data collected was then processed and analyzed using descriptive statistics, multiple regression analysis as well as analysis of Variance (ANOVA). As an aid for analyzing and presenting the data collected, the researcher used graphs as well as the Statistical Package for Social Sciences (SPSS) to analyze and present the data collected.

5.2.Summary of Findings of the Study

5.2.1 Supplier performance and Inventory Management

The study revealed that supplier performance influenced electronic data interchange on inventory management in the Kenyan judiciary to a great extent. The study found out that lead times to a great extent influenced electronic data interchange. It was further established that product availability, supplier flexibility and communication networks as indicators of supplier performance influenced electronic data interchange to a moderate extent. Majority of the respondents agreed that electronic data interchange application would influence inventory management in the Kenyan judiciary. This is in concurrence with suggestions by Collins (2011) and Skipper etal (2009) in the literature review.

The findings also showed that taking all other independent variables at constant, a unit increase in supplier performance will lead to a 0.148 (14.8%) increase in inventory management in the Kenyan judiciary with a p value of .087. However, the study found out that there was a positive though insignificant effect between supplier performance and inventory management in the Kenyan Judiciary. The ANOVA results gave a significance value of 0.000 which was less than p=0.05. This means that the model was found to be statistically significant in predicting how electronic data interchange would influence inventory management in the Kenyan Judiciary.

5.2.2 Communication Flow and Inventory Management

From the multiple regression model summary, taking supplier performance, communication flow, work process and institutional policies, the inventory management in the Kenyan judiciary was found to be 0.36. The findings also showed that taking all other independent variables at constant, a unit increase in communication flow would result to a 0.0344 (3.44%) increase in inventory management in the Kenyan judiciary with a p value of 0.790. However, the study found out that there was a positive though insignificant effect between communication flow and inventory management in the Kenyan Judiciary. The ANOVA results gave a significance value of 0.000 which was less than p=0.05. This means that the model was found to be statistically significant in predicting how electronic data interchange would influence inventory management in the Kenyan Judiciary. The study further deduced that communication flow influenced electronic data interchange to a great extent through

indicators such as internet connectivity, computerized networks and enterprise resource planning platforms. Momanyi and Senewu (2014) concurred in the reviewed literature that modern inventory control systems should be well implemented for ease of evaluating financial risks associated with huge capital invested in purchases.

5.2.3 Work Process and Inventory Management

The findings showed that taking all other independent variables at constant, a unit increase in work process would result to a 0.118 (11.8%) increase in inventory management in the Kenyan judiciary with a *p* value of 0.401. However, the study found out that there was a positive though insignificant effect between work process and inventory management in the Kenyan Judiciary. The ANOVA results gave a significance value of 0.000 which was less than p=0.05. This means that the model was found to be statistically significant in predicting how electronic data interchange would influence inventory management in the Kenyan Judiciary. The study further established that work process as indicated by management support influenced inventory management in the Kenyan judiciary to a moderate extent. It was equally established that work process as indicated by staff training influenced electronic data interchange on inventory management in the Kenyan judiciary in a moderate extent. Majority of the respondents felt that electronic data interchange will affect work process in inventory management in the Kenyan Judiciary. Mesa (2018) in his study reviewed herein before found out that proper procurement planning determines the success of service delivery where staff are trained on procurement procedures and work processes.

5.2.4 Institutional policies and Inventory Management in the Kenyan Judiciary

The study found out that taking all other variables at constant, a unit increase in Institutional policies will lead to a 0.679 (67.9%) increase in the inventory management in the Kenyan judiciary with a p value of 0.000. The study thus found that institutional policies have a significant effect on the inventory management in the Kenyan Judiciary with a *p* value of 0.000. The ANOVA results gave a significance value of 0.000 which was less than p=0.05. This means that the model was found to be statistically significant in predicting how electronic data interchange would influence inventory management in the Kenyan Judiciary.

The study also found out that institutional policies based on procurement guidelines influenced electronic data interchange on inventory management in the Kenyan Judiciary to a great extent. However, institutional policies as indicated by communication channels, and

supplier relationships respectively influenced electronic data interchange on inventory management in the Kenyan judiciary in a moderate extent. Majority of the respondents agreed that application of electronic data interchange would have an influence on inventory management in the Kenyan Judiciary. This is in concurrence with Nzusa (2015) whose study recommended that firms should instigate innovative strategies such as EDI in order to eradicate escalating costs of inventory.

5.2.5 Inventory Management Techniques and Inventory Management in the Kenya Judiciary

The study established that inventory management technique on basis of Just-in-time (JIT) influenced inventory management in the Kenyan judiciary to a moderate extent. The study found out that other inventory management techniques based on materials resource planning (MRP) and enterprise resource planning (ERP) influenced inventory management in the Kenyan judiciary to a great extent respectively. Equally, majority of the respondents agreed that application of electronic data interchange will enhance inventory management in the Kenyan judiciary.

5.3.Conclusion

The study drew its conclusions from the information collected from the respondents and also based on the major findings of the research study. The study concludes that supplier performance influences electronic data interchange on inventory management in the Kenya judiciary through achieving shorter lead times, ensuring product availability, ensuring supplier flexibility, and efficient communication networks. The study also concluded that communication flow influenced electronic data interchange on inventory management in the Kenyan judiciary through various indicators such as internet connectivity, computerized networks. Equally, it was concluded that enterprise resource planning platforms also influenced electronic data interchange and ultimately influenced inventory management in the Kenyan judiciary.

On the topic of work process, the study concluded that work process affect inventory management in the Kenyan Judiciary through management support, total quality management, and staff training parameters. Majority of the respondents agreed that application of electronic data interchange will affect work process to a great extent. On the

topic of institutional policies, the study concluded that institutional policies as measured by procurement guidelines, communication channels, and supplier relationships affect inventory management in the Kenyan judiciary. Majority of the respondents agreed that application of electronic data interchange technology will greatly influence institutional policies and enhance inventory management in the Kenyan judiciary. Likewise on the topic of inventory management techniques as measured by Just-in Time technique, materials resource planning technique, and enterprise resource planning technique, the study concluded that the stated techniques influence inventory management in the Kenyan Judiciary. Majority of the respondents were in agreement that use of electronic data interchange application will greatly enhance inventory management in the Kenyan judiciary

5.4.Recommendations based on the findings

5.4.1 Supplier Performance and Inventory Management in the Kenyan Judiciary

This study recommends that embracing information communications technology (ICT) such as electronic data interchange in inventory management in the Kenyan Judiciary should be a priority since the new technology will aid in automation and integration of many key tasks in supply chain unit of the Kenyan Judiciary. This will minimize risks associated with inventory management as well as help to achieve enhanced supplier performance metrics in the Kenyan Judiciary. It is recommended that vast amounts of supplier data will be available and accessible to inventory managers in a faster, cheaper and in real time. The study recommends that application of EDI will aid in supplier flexibility, product availability, short lead times and better communication networks based on the study findings.

5.4.2 Communication Flow and Inventory Management in the Kenyan Judiciary

The study recommends the application of EDI in inventory management to help to enhance communication flow with trading partners. There will be more computing power to enable the institution to leverage on new information to aid in decision making owing to better communication flow. The research further recommends that the Kenyan Judiciary should embrace electronic data interchange to ease communication flow between supply chain unit and suppliers, so as to shorten lead times, achieve quick product availability, achieve supplier flexibility and efficient communication networks. Equally the study recommends the use of electronic data interchange in inventory management in the Kenyan judiciary to aid in

monitoring, early warning and prediction of operations in inventory management chain. The study recommends that the use of EDI will aid in internet connectivity, ensure computerized networks as well as enhanced ERP platforms.

5.4.3 Work Process and Inventory management in the Kenyan Judiciary

The Study recommends that use of EDI in inventory management in the Kenyan Judiciary will help to ensure smooth work process. The use of electronic data interchange is equally recommended to ensure achievability of easy work process between staff and other stakeholders both internal and external. It will also help to achieve total quality management coupled with proper management support in inventory control. The study recommends that work process will be enhanced by enlisting management support in operations as well as TQM best practices and ensuring staff are continuously trained in emerging EDI technology.

5.4.4 Institutional policies and Inventory Management in the Kenyan Judiciary

The study recommends that EDI tools will help achieve streamlined and efficient and effective institutional policies in the Kenyan Judiciary based on the study findings. The findings indicate that use of Electronic Data Interchange in inventory management will streamline procurement guidelines, communication channels, and better supplier relationships. Equally, the application of electronic data interchange technology will be recommendable for attaining integration of institutional policies in inventory management set up in the Kenyan Judiciary. The study thus recommends that the application of EDI technology will aid in concurrence with literature reviewed, with better procurement guidelines, better communication channels and enhanced supplier relationships.

5.5.Suggestions for Further Research.

In this study, the research used only four variables to assess the influence of electronic data interchange on inventory management in the Kenyan Judiciary. These variables may not be the only variables that may have an overall influence on inventory management in the Kenyan Judiciary. Therefore there is ultimate necessity of carrying out other study with other different variables which may establish other determinants of inventory management in other government institutions. It is therefore suggested that more research be undertaken based on other different indicators aimed at establishing other major determinants of inventory

management in other government institutions. The researcher suggests that other researchers may attempt to carry out studies such as the current one in other government organizations to establish whether similar outcomes will be observed. The researcher equally suggests that a research can be undertaken to find out the whether there are other determinants that may influence effective implementation of electronic data interchange on inventory management in the Kenyan judiciary.

REFERENCES

Anvari, M. (1992). Electronic data interchange and inventories. *International Journal of Production Economics*, 135-143.

Araujo, R., Tenkasi, R., & Te'eni, D. (2007). Designing information technology to support distributed cognition. *Organization Science*, 456-475.

Chan, S. W., Tasmin, R. A., Aziati, N., Rasi, R. Z., Ismail, F. B., & Yaw, L. P. (2017). Factors Influencing the Effectiveness of Inventory Management in Manufacturing SMEs. *International Research and Innovation Summit (IRIS2017).*

Collins, C. (2011). Building Operational Excellence Through EDI. *Inbound Logistics*.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 319-340.

Dawei, L. (2011). *Fundamentals of supply chain management.* Frederikesberg, Denmark: Ventus Publishing Aps. ISBN 978-87-7681-798-5.

Field, A. (2009). *Discovering Statistics using SPSS (3rd edition.).* . . California: Sage Publications Inc.

George, K. (2010). Procurement of technical works. *Journal of Procurement*, 143-146.

Halim, Z., Rashed, C. A., & Azeem, A. (2010). Effect Of Information And Knowledge Sharing On Supply Chain Performance: A Survey Based Approach. *ReasearchGate*.

Hamid, A. B., & Krishnapillai, G. (2010). The impact of purchasing and Early Supplier Involvement (ESI) in a manufacturing firm. *ResearchGate*.

Harrison, A., & Hoek, R. V. (2011). *Logistics Management and Strategy: Competing through the Supply Chain (4th Edition).* London, FT Prentice Hall.

Holden, J. R., & Karsh, B. T. (2010). The technology acceptance model: its past and its future in health care. *Biomed Inform*.

Hunja, R. (2011). Obstacles to public procurement reform in developing Countries. *International Journal*, 167-170.

Kaplan, R., & Norton, D. (1992). The Balanced Scorecard: measures that drive performance. *Harvard Business Review*, 71-80.

Kaplan, R., & Norton, D. (1996). The Balanced Scorecard: Translating Strategy into Action. *Harvard Business Review Press.*

Kitheka, S. S. (2012). Inventory Management Automation and the Performance of Supermarkets in Western Kenya. University of Nairobi.

Kothari, C. R. (2008). *Research Methodology: Methods and Techniques.* New Delhi: New Age International Publishers.

Macharia, C. W., & Ismail, N. (2015). Role of Electronic Data Interchange on Supply Chain Performance in Manufacturing Sector in Kenya: A Case of Bidco Refinery. *International Academic Journals*.

Mesa, R. N. (Jomo Kenyatta University of Agriculture and Technology). Determinants of Procurement Performance in the Judiciary Department at the Nakuru Law Courts, Kenya. *Jomo Kenyatta University of Agriculture and Technology*.

Mugenda, O., & Mugenda, A. (2009). *Research Methods. Quantitative and Qualitative Approaches.* Nairobi: ACTS Press.

Neuman, W. L. (2006). *Social Research Methods: Qualitative and Quantitative Approaches.* Boston. USA: Pearsons Education Inc.

Noum, W. (2007). *Social Research Methods: Qualitative and Quantitative Approaches.* Boston: Allyn and Bacon Publishers.

Nzuza, Z. W. (2015). Factors affecting the success of inventory control in the stores division of the eThekwini Municipality, Durban : a case study. *Durban University of Technology*.

Rogers, E. (2003). *Diffusion of innovations (5thed.).* New York: Free Press.

Sadikoglu, E., & Olcay, H. (2014). The Effects of Total Quality Management Practices on Performance and the Reasons of and the Barriers to TQM Practices in Turkey. *Advances in Decision Sciences*.

Santagate, J., & Ellis, S. (2017). The Digitally Enabled Supply Chain with Manufacturing Use Cases. *IDC Publication*.

Skipper, J. B., & Hanna, J. B. (2009). Minimizing supply chain disruption risk through enhanced flexibilit. *International Journal of Physical Distribution & Logistics Management, Vol. 39.*

Vliet, V. (2011, 10 15). *Five functions of management (Fayol).* Retrieved 10 15, 2018, from ToolsHero: http://www.toolshero.com/management/five

World Bank. (2011). *Guidelines on Procurement under IBRD Loans and IDA Credits.* Washington D. C.: World Bank.

Zhang, Z. (2010). Feeling the sense of community in social networking usage. . *IEEE Transactions on Engineering Management*, Vol. 57 No.2.

APPENDIX I: QUESTIONNAIRE

THE JUDICIARY IS ON ROADMAP TO TRANSFORMATION

This questionnaire has been designed as a main component of a study into the effect of electronic data interchange [EDI] in inventory management in the Kenyan Judiciary as it embraces technology which is one of the pillars in the judiciary transformation framework.

EDI refers to the structured transmission of electronic documents or business data between trading partners via computer to computer systems without human interventions.

Inventory management is the supervision of supply, storage and accessibility of stocks in order to ensure adequate supply of the right quantity and right quality of such stocks at the right place and at the right time. This inter alia, helps in reducing costs related to storage of inventory. You have been chosen as one of the respondents to help in completing the questionnaire. Please answer questions by ticking [√] in the appropriate box. Information will be treated with utmost confidence and only for purposes of this academic research study.

SECTION I: GENERAL INFORMATION

Kindly tick where applicable

1. Gender

   Male [ ]

   Female [ ]

1. Age in years

   Between 18-25 [ ] Between 26-35 [ ]

   Between 36-45 [ ] 46 and above [ ]

2. Highest level of education

   Secondary [ ]

   College [ ]

   University [ ]

3. What is your position in the Kenyan Judiciary?

Top level management [ ]

Middle level management [ ]

Lower level management [ ]

SECTION II: ELECTRONIC DATA INTERCHANGE AND INVENTORY MANAGEMENT

PART A: SUPPLIER PERFORMANCE

4. To what extent does supplier performance affect inventory management in the Kenyan judiciary?

Great extent (4), Moderate extent (3), little extent (2), Don't know (1)

	Great extent (4)	Moderate extent (3)	Little extent (2)	Don't know (1)
5.Lead Times				
6.Product availability				
7.Supplier flexibility				
8.Communication Networks				

9. In your opinion, do you think the use of technology such as Electronic data interchange would enhance supplier performance in inventory management in the Judiciary?

Yes [ ] No [ ]

Please explain your answer

…….

…….

……

PART B: COMMUNICATION FLOW

To what extent does communication flow affect inventory management in the Kenyan Judiciary?

	Great extent (4)	Moderate extent (3)	Little extent (2)	Don't know (1)
10.Internet connectivity				
11.Computerized networks				
12.ERP(Enterprise Resource Planning) platforms				

13. Do you think electronic data interchange will enhance communication flow in inventory management in the Kenyan Judiciary?

Yes [ ] No [ ]

Please give an explanation to your answer

……

……

PART C: WORK PROCESS

8. To what extent does work process affect inventory management in the Kenyan judiciary?

	Great extent (4)	Moderate extent (3)	Little extent (2)	Don't know (1)
14.Management support				
15.Total quality management				
16.Staff training				

17. In your opinion, do you think use of electronic data interchange will affect work process in inventory management in the Kenyan Judiciary?

Yes [ ] No [ ]

Please explain

..……
……

PART D: INSTITUTIONAL POLICIES

To what extent do institutional policies affect inventory management in the Kenyan Judiciary?

	Great extent (4)	Moderate extent (3)	Little extent (2)	Don't know (1)
18.Procurement guidelines				
19.Communication Channels				
20.Supplier relationships				

21. Do you think application of electronic data interchange will affect institutional policies on inventory management in the Kenyan judiciary?

Yes [ ] No [ ]

Kindly give an explanation to your answer

……

……..

PART E: INVENTORY MANAGEMENT TECHNIQUES

To what extent do you think the following techniques will affect inventory management in the Kenyan judiciary?

	Great extent (4)	Moderate extent (3)	Little extent (2)	Don't Know (1)
22.Just-in-Time (JIT)				
23.Materials resource Planning (MRP)				
24.Enterprise Resource Planning (ERP)				

25. Do you think application of the above techniques which are related to EDI will enhance inventory management in the Kenyan Judiciary?

Yes [ ] No [ ]

Kindly give a brief explanation to your answer

……

……

THANK YOU FOR TAKING YOUR TIME TO FILL IN THE QUESTIONNAIRE!

APPENDIX II: AUTHORIZATION LETTER FROM UNIVERSITY

ST. PAUL'S UNIVERSITY

Private Bag 00217 LIMURU, KENYA
Email: postgraduatestudies@spu.ac.ke
Website: www.spu.ac.ke

Tel Office: +254 (0) 20-2020505/10
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(0) 728-062420
(0) 736-424440

BOARD OF POSTGRADUATE STUDIES

National Commission for Science, Technology and Innovation
Off Waiyaki Way, Upper Kabete
P.O.Box 30623, 00100
Nairobi, KENYA.

5th March 2019

Dear Sir/Madam,

RE: BENJAMIN MUTUA MUTUVI – MBANRB210317

This is to confirm that the above named is a final year student of St. Paul's University registered for Masters of Business Administration.

The final year consists of a major research work leading to a dissertation comprising 20,000 words. The student's selected topic is:

Assessment of influence of Electronic data interchange on inventory Mgt in Kenyan Industry

The research will take place in NRB county from March 2019 to May 2019.

Kindly grant the student the required permit.

Yours Faithfully,

Dr. Sammy Githuku
Director, Postgraduate Studies.

APPENDIX III: NACOSTI LICENSE

THIS IS TO CERTIFY THAT:
MR. BENJAMIN MUTUA MUTUVI
of ST. PAULS UNIVERSITY, 30041-100
Nairobi,has been permitted to conduct
research in *Nairobi County*

on the topic: *ASSESSMENT OF EFFECTS OF ELECTRONIC DATA INTERCHANGE IN INVENTORY MANAGEMENT IN THE KENYAN JUDICIARY*

for the period ending:
12th April,2020

Permit No : NACOSTI/P/19/33176/29150
Date Of Issue : 12th April,2019
Fee Recieved :Ksh 1000



.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

APPENDIX IV: OFFICIAL LETTER FROM NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/33176/29150**

Date: **12th April, 2019**

Benjamin Mutua Mutuvi
St. Pauls University
P.O. Private Bag - 00217
LIMURU.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Assessment of effects of electronic data interchange in inventory management in the Kenyan judiciary"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **12th April, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

National Commission for Science, Technology and Innovation is ISO9001:2008 Certified

APPENDIX V: WORK PLAN (Schedule of activities)

Activity	**Time frame**	**Responsibility of**
Review of literature	Five weeks	Researcher
Identifying research topic and variables	One week	Researcher in consultation with supervisors
Determining the research design	Two weeks	Researcher in consultation with supervisors
Executing sampling	One week	Researcher
Constructing questionnaire	One week	Researcher
Dropping questionnaires to respondents at stations	Two weeks	Researcher
Picking questionnaires	Three weeks	Researcher
Analyzing and interpreting data	Four weeks	Researcher
Preparing final proposal for defence	Five weeks	Researcher in consultation with supervisors
Preparing final document including chapter 4&5	Five weeks	Researcher in consultation with supervisors

APPENDIX VI: Budget

Activity	**Expenditure**	**Amount**
Review of literature	External library/internet	10,000=
Constructing questionnaire	Typing/printing	5,000=
Dropping questionnaires to respondents at stations	Transport and subsistence	15,000=
Picking questionnaires	Transport and subsistence	15,000=
Preparing final proposal for submission	Typing, printing and binding	5,000=
Preparing the final document with chapter 4&5	Typing, printing and binding	10,000=
Total		**60,000=**