PROCUREMENT PRACTICES AND LEVEL OF IMPLEMENTATION OF PUBLIC PROCUREMENT REGULATIONS IN THE DEVOLVED SYSTEMS OF GOVERNMENT IN KENYA

DENISH ATETO MATUNGA

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Procurement Practices and Level of Implementation of Public Procurement Regulations in the Devolved Systems of Government in Kenya

Denish Ateto Matunga

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University

Signature……Date…….…..

Denish Ateto Matunga

This thesis has been submitted for examination with my approval as University Supervisors

Signature……Date…….…..

Prof. Patrick Karanja Ngugi

JKUAT, Kenya

Signature……Date…….…..

Prof. Romanous Odhiambo, PhD

JKUAT, Kenya

DEDICATION

I dedicate this work to my dear wife Rosaline, Sons Steward & Baraka, my mother Mary, my brother Dr. Mark and the family, elder brother Julius, my twin brothers Stephen & Samuel, my sisters Jane, Damarice, Milka & Helen. My father and mother in-law Nyaga & Jane and all family members. I thank you all for the encouragements and continuous support throughout this journey.

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ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis Of Variance
CAR	County Allocation Revenue
CGA	County Government Act.
COK	Constitution of Kenya, 2010.
CS	Cabinet Secretary
DDP	Devolved Development Policy
EACC	Ethics and Anti-Corruption Commission
EUCC	European Union Chamber of Commerce
ICT	Information Communication Technology
IEA	Institute of Economic Affairs
IFMIS	Integrated Financial Management Information System
KISM:	Kenya Institute of Supplies Management
M & E	Monitoring and Evaluation
NT	National Treasury
OECD	Organization for Economic Cooperation and Development
OJB	On-the-Job-Behavior
PEs	Procuring entities
PP	Public Procurement
PP&AD	Public Procurement and Asset Disposal Act.
PPAD	Public Procurement and Asset Disposal
PPADR	Public Procurement and Asset Disposal Regulations,

PPARB	Public Procurement Administrative Review Board
PPDA	Public Procurement and Disposal Act.
PPDCGR	Public Procurement and Disposal (County Governments) Regulations.
PPDPRR	Public Procurement and Disposal (Preference and Reservations) regulations.
PPDR	Public Procurement and Disposal Regulations.
PPOA	Public Procurement Oversight Authority
PPPA	Public Private Partnerships Act.
PPRA	Public Procurement Regulatory Authority
ROI	Return On training Investment.
RoK	Republic of Kenya
SAIs	Supreme Audit institutions
SPSS	Statistical Package for Social Science
TI	Transparency International
UNDP	United Nations Development Plan

OPERATIONAL DEFINITION OF TERMS

Auditing	The process of independently reviewing and analyzing a public organization's procurement activities to confirm that they are compliant with applicable laws, regulations, and policies is known (Matthew & Patrick, 2013).
Devolved government	A type of government which involves the transfer of power and decision-making authority from a central government to devolved entities like regions, and counties (Chepng'etich, 2022).
IFMIS	A technological system used to automate the internal and external processes associated with strategic sourcing, purchasing and inventory management of goods, works and service (PPADA, 2015)
Inventory Management	The optimal amount of raw materials for transformation and finished products available in order to deliver them rapidly to meet a customer's inventory requirement in a competitive manner (Manta, Panait, Hysa, Rusu, & Cojocaru, 2022)
Monitoring	It is continuous evaluation and assessment of project level of implementation about the design schedules on inputs, infrastructure, and services by project beneficiaries (Mohamad Azmi, & Ismail, 2022).
Procurement	The processes to acquire goods, services and works, through any contractual methods including livestock, advisory, planning and processing in Supply Chain (PPADA, 2015)

Procurement Practices Refers to the techniques, steps, and guidelines created to guarantee that organizations acquire their supplies, services, and labor quickly, cost - efficiently, and effectively (McFalls, 2016)

Public Procurement Pertains to the process through which public institutions, such as state or local governments, acquire goods, services, and labor through contracting or procuring; it is governed by rules, regulations, and policies intended to assure the integrity, openness, and fairness of the entire process (PPADA, 2015).

Public procurement Framework Refers to the body of regulations, laws, policies, and guidelines that set forth the rules and regulations for how public entities, purchase goods and services, and carry out work through contracts; all the while ensuring that public funds are used effectively, efficiently, and for the intended purpose (Fourie, & Malan, 2020).

Staff Competencies Relates to the information, skills, abilities, and personal attributes that persons need in order to properly fulfill their job responsibilities. These requirements vary depending on the type of job (Cherotich, 2018)

Staff Professionalism Refers to the actions and attitudes that people display in the workplace that are congruent with the norms, values, and principles of their respective professions. The term "professionalism" refers to an all-encompassing set of traits and attributes that are necessary for the accomplishment of one's duties in an effective and productive manner (Cherotich, 2018)

Supplier Relationship Management A comprehensive approach to manage an enterprise's interactions with the organizations that supply the goods, works and services that it uses (Karttunen, Matela, Hallikas & Immonen, 2022).

Value for Money The undertaking by PEs that benefits PE, described in terms of cost, price, quality, quantity, timeliness and risk transfer (PPADA Regulations, 2016)

ABSTRACT

Public procurement in most devolved system of governments in Kenya have been criticized and are under investigation for procurement malpractices, corruption cases, ghost projects and massive wastage of public resources due to non-compliance in the procurement processes. Report revealed an average score for all the county executives was 39.7% non-compliant of Procurement procedures and a high-risk level of 60.3%, also the aggregate compliance and implementation score of all the County Assemblies was 46.6% while the risk level was 53.4%. This shows that the higher the risk score, the higher the possibility of a procuring entity failing to obtain value for money expended through procurement. Complaints were received from suppliers and the public against County government PEs on flaws in tender evaluation and specifications, on Supplier's delayed payments, lack of notification of awards, errors in tender notices and alleged corrupt practices during procurement. Most Procuring entities at the County governments have major challenges of failure in updating store records, security of store, failure to conduct regular stock taking, maintenance of Assets Registers that were not updated which was considered non-compliance in implementing inventory controls and management. Therefore, it was necessary to consider service delivery in Counties through procurement practices and its implementation level. The study targeted to generate information that would create an understanding of the procurement practices and implementation level in Counties in Kenya. The population targeted was 47 devolved system of governments in Kenya assessing the influence of procurement staff competency, supplier relationship management, inventory management and procurement audit practices and implementation level of Procurement in Counties. Theory of Constraints, Policeman theory, Compliance performance reform cycle model, the four-pillar model, Institutional theory and competences models' theory were found to be relevant in the study. The study adopted census because of the small size of the population and a structured questionnaire was used as a data collection tool. The study undertook a pilot test on the instrument's reliability and validity in the three counties; Nyamira, Kisii, Homa-Bay Counties where nine (9) respondents were engaged in the pilot study. The study applied descriptive and inferential statistics for data analysis. The key informers from the 44 Counties were engaged in the survey, who positively responded hence achieving 100% response rate. Presentation of data was in form of tables as deemed appropriate. The study finding indicates that all the procurement practices have a positive significance effect on the implementation of Procurement in Counties. The finding showed a coefficient of the determination R^2 value of 0.598(59.8%) without the moderator and 0.816(81.6%) with moderator, signifying that the IV contributed 81.6% on the implementation of procurement in Counties with a moderator. In addition, the moderator was found to be significant for both the IV and DV as there was a positive change in *beta* values on the variables. The findings demonstrates that in every unit change in the variables, there is a positive increase in the value of implementation of PP. It was therefore, concluded from the study that the County procurement officers pay maximum attention to procurement practices and M & E for they both have a positive effect on implementation of procurement in Counties.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The study background provides insights on the problem of the study, objectives of the study, research hypotheses, the significance, scope and limitations of the study. The section focuses on the functions of the research problem on the management practices and implementation level of PPRF in the devolved system of governments. The process of acquiring of goods, services and works through the use of government funds to implement and deliver intended project to the citizens has been termed as Public Procurement. The acquisition procedures starts at the need identification and ends at the contract administration and completion (Jacqueline & Daniel, 2018). It is the key to the success of the management of public resources and has been considered and adopted by several countries into a strategic way of management system in the government.

The study is to establish the relationship between procurement practices and Implementation level of public procurement regulations in the devolved system of governments in Kenya. Public procurement globally plays a key role in the economic development in any country and therefore, every government takes responsibility in providing essential services to the citizens through Public Procurement for it makes up the biggest budget expenditure in any government (Ambe & Badenhorst-Weiss, 2012). The estimated public procurement global value is at US$ 1.5 Trillion not including the defense department budget of procurement (Kirton, 2013). Mahmood (2010) stated that PP accounts for a huge expenditure estimated to be 18.42% of the world GDP and 30% of global trade (Agaba & Shipman, 2008).

In the developed countries, PP is increasingly recognized as most lucrative ventures in business and is essential in-service delivery. The public procurement has the ability to significantly improve the economic status of the stakeholders. However, it is also one

that has been characterized by unfair competition and malpractices (Jacqueline & Daniel, 2018). According to Heeks (2010), 35% of public procurement in developing countries have not achieved the expected results, 50% are partial failures, while 15% is successful. According to the report by World Bank (2016), revealed that almost 50% of the budget for government in most countries that are developing are spent in procurement. While an estimate of 29% expenditure in high income countries of total general government expenditure on public procurement. Despite high expending of public financial resources and reforms, inefficient and ineffective procurement practices has been a bottleneck in many countries in the world (Komakech, 2016).

The Public Procurement budget expenditures are matters of concern in Africa countries for they take huge part of the financial year budget and the increased cases of inefficiency and administration, bureaucracy system of procurement practices in government institutions contributing to over Kshs. 50 million losses annually (Khader *et al.,* 2014). Public Procurement in Ghana 2003 (Act 663) guides the government organizations in their procuring of goods, service and works to enforce the proper governance concept and to move towards zero tolerance to procurement malpractices. The PP Act, 2003 (Act 663) enacted by the Ghana government to strengthen the weak area in the procurement procedures of procuring of goods, services and works in the public entities and also eliminate corruption, regulating expenditures and instilling discipline in the public finance (Normanyo, Ansah & Boakye, 2016).

The devolved system of governments have been introduced in nations in Africa for purposes of ensuring development of the economy and service delivery is closer to the citizens and they also benefit from the services offered by the government (Walls, Berrone & Phan, 2012). East Africa devolved system of governments also support the countries to desist from misappropriation of powers and resources by the national government. In nations that have had success in devolved system of government being implemented, service delivery and development are experienced and unlike those countries that are yet to implement the devolved system of government (Boyd, 2015).

A number of scholars all over the globe have attempted to ascertain the influence of procurement practices and implementation level of public procurement regulations. However, majority have narrowed procurement practices to procurement staff competency (e.g. Aketch & Karanja, 2013), Supplier relationship management (e.g. Kepher, Shalle, & Oduma, 2015), Inventory management (e.g. Ogbo & Ukpere, 2014; Mwangi & Nyambura, 2015), Procurement Audit practices (e.g. Hundal, 2013), Monitoring & Evaluation (e.g. Kithatu-Kiwekete & Phillips, 2020) and level of Implementation of public procurement regulations (e.g. Amanyi & Ngugi, 2013).

In Kenya, PP is considered to be the avenue in which the government expenditures are realized on revenue collected annually, for the implementation of government's projects and service delivery. This was further reiterated that PP that is economically inefficient invariably undermines the governments' agenda of service delivery. In light of this, Article 227 of the constitution mandates a development of regulations where policies and regulations that relates to PP shall be implemented. The constitution regulatory framework demands that procuring entities entering a contract shall do so in a competitive, transparent, fair, equitable and cost-effective system (Anthony, 2018).

The establishment of a regulatory framework for public procurement in Kenya is a matter of continuous debate and research. The lack of clear and uniform laws and procedures has resulted in a lack of openness and accountability in the procurement process. As a result, claims of corruption and favoritism have surfaced, raising concerns about the effectiveness of current legislation in promoting good governance and value for money. Another source of worry is procurement officials' lack of capacity and resources, which has resulted in a lack of oversight and implementation of current standards. This has prompted calls for capacity-building measures to increase procurement authorities' skills and competence.

Another point of contention is the lack of participation in the procurement process by small and medium-Enterprise firms (SMEs), which has prompted concerns about the efficiency of existing policies and regulations in promoting competition and diversity in

the procurement process. This has prompted calls for legislation to address the challenges that SMEs confront, such as a lack of information and limited access to funding. As a result, the scholarly discussion and quandary surrounding the execution of Kenya's public procurement regulations is a complicated and diverse subject that necessitates a complete and nuanced investigation in order to fully comprehend the issues and prospects for reform in the devolved system of government.

1.1.1 Global Perspective of Implementation of Public Procurement Regulations

The decision by the public purchaser to acquire goods or services from an outside source in order to complete administrative tasks leads to the application of procurement law (such as the services for the public). American Bar Association (2000) asserts that effective procurement laws and regulations are necessary for a sound public procurement system. In both theory and practice, PP laws and regulations have been regarded as one of the cornerstones of a reliable procurement system (Thai, 2009). Depending on the type of government and atmosphere in which the system is managed, procurement laws and regulations either result in efficient or inefficient procurement. The procurement process cannot be open and vital in a nation without a democratic government (OECD, 2006).

Any steps done by the regulators to ensure compliance in the procurement practices are considered as enforcement practices (Zubcic & Sims, 2011). The impact of enforcement on compliance is a topic on which there are differing views. According to Sparrow (2000), enforcement may teach violators more advanced strategies for avoiding and hiding government discovery. Imperato (2005), on the other hand, concurs that enforcement enhances compliance. Increased penalties and enforcement actions boost levels of legal compliance (Zubcic & Sims, 2011). Government procurement corruption in developing nations has been connected to lax enforcement of the law (Raymond, 2008). Bidders may check to see if the procurement processes follow the established procedures in nations with complaint and review mechanisms. Another powerful

motivation for procurement officials to follow the regulations is the potential for review (Hui *et al.,* 2011).

When the legal system is unable to adequately enforce the law, either because the fines are too little or the detection methods are insufficient or inadequate, public bodies may decide to develop ineffective compliance measures. According to Gunningham and Kagan (2005), enforcement action has a cumulative effect on the consciousness of regulated organizations, reminds PEs and individuals that violators will be punished, and encourages them to review their own compliance programs. The threat of legal sanctions is crucial to ensuring that regulations are followed.

Asia's decentralized administrative systems have recently undergone major structural adjustments related to public procurement. For instance, in Japan, earlier laws like the Proper Tendering Contracting Law and the Public Service Ethics Law, both passed in 2000, included the Elimination and Prevention of Bid Rigging in 2002 and the Ensuring Quality of Public Works in 2005, both of which aimed to improve transparency and accountability, as well as the adoption of IFMIS at the devolved prefectural level of government. These regulations were put in place to prohibit bid manipulation and guarantee that public works (Kinoshita, Sato & Matsumoto, 2012).

In spite of continuing efforts to create uniform public procurement procedures throughout Germany, Czarnitzki, Hünermund, and Moshgbar's 2020, research finds that there are significant legal distinctions between state and federal reforms. Managing budgets in a way that enables governments to keep providing acceptable levels of public service is a constant problem (OECD, 2017). Many countries have implemented new laws in an effort to find a solution to this issue, with the aim of increasing the effectiveness of the public sector and the way in which the government spends its resources. Both the public sector's effectiveness and the effective use of resources are improved by these strategies.

The first step in achieving these objectives, according to Czarnitzki, Hünermund, and Moshgbar (2020), was the modification of the rules governing German federal procurement. This was the first action taken to achieve these objectives. The changes to German procurement law based on 2014 EU guidelines for e-procurement sought to accomplish the following objectives: The procurement procedure should be forced to use online communication (OECD, 2017). However, both regional municipal procurement agencies and small and medium-enterprise firms (SMEs) need to be given some latitude in terms of their timelines in order to fully incorporate computerized processes. The research from 2020 by Czarnitzki, Hünermund, and Moshgbar indicates that there are no trustworthy statistics on public procurement in Germany.

The Court of Justice of the European Union's theories serve as the foundation for the reform agenda for the public procurement system (CJEU). These doctrines attempt to identify common ground between the core principles of public procurement law and the fundamental values outlined in the EU Treaties (Bovis, 2020). When it comes to finishing the tasks that are left unfinished by the public procurement guidelines, primary EU legislation is what enters the picture to undertake the hard lifting. The case law of the Court of Justice of the European Union (CJEU) has been a significant contributor to the development of the policy and concepts that underpin the acquis, in addition to providing flexibility, clarity, and assurance to the highly decentralized implementation as well as enforcement of the public procurement acquis (Bovis, 2020). The European Union and its member states are thought to be able to achieve growth and raise their level of competitiveness with the help of public procurement. All of the countries that make up the EU have the same viewpoint.

The Public Procurement Act 30 of 2007, which pushed for gender equality in procurement, and other amendments to public procurement laws were first made to the Royal Decree 1098/2001 and then to the Public Procurement Law 9 of 2017 (Mizell & Allain-Dupré 2013). These changes were made throughout all of Spain. The procurement reforms are responsible for Africa's modernization. According to Blay and Baquedano, the Public Procurement Law 9 of 2017 is a more comprehensive

procurement law (2017). This law's main objective is to increase transparency and accountability in all spheres of authority, especially decentralized autonomous regional administrations.

Concha and Anrique (2012) assert that the Law 19,866 of July 2003's procurement reforms, its amendments in 2008, and particularly those focused on e-procurement for transparency had a considerable favorable impact on the effectiveness with which local governments procured products and services. The Public Procurement Law No. 30225 of 2016 and other recent modifications to public procurement have also been enacted at all levels of government, which has had a positive impact on the effectiveness of procurement in Peru's regional governments (OECD, 2017).

1.1.2 Regional Perspective of Implementation of Public Procurement Regulations

Since the end of the apartheid regime In South Africa, government procurement has been used explicitly to pursue socio-economic objectives (Turley & Perera, 2014). Procurement practices are of particular significance in the South African public sector. It is used to promote social, industrial or environmental aims which are, arguably, secondary to the primary aim of procurement (Bolton, 2009). This is due to the discriminatory and unfair practices of the past. The procurement transformation started in 1995 and was directed at two broad focus areas, namely the promotion of the principles of good governance and the introduction of a preferential system to address socio-economic objectives. The procurement reform processes were embedded in section 112 of the Municipal Financial Management Act 56 of 2003 (MFMA), in section 76(4) (C) of the Public Finance Management Act (PFMA), and in the Preferential Procurement Policy Framework Act 5 of 2000 (PPPFA). In 2001, the SCM unit at National Treasury completed a joint Country Procurement Assessment Review (CPAR) in collaboration with the World Bank to assess procurement practices throughout the public sector. The CPAR identified certain deficiencies in procurement practices relating to governance, and the interpretation and implementation of PPPFA and its associated regulations.

As was noted by Ambe (2016), it was found that the systems of procurement and provisioning were highly fragmented owing to the fact that tender boards were exclusively responsible for procurement while provisioning was largely underwritten by norms and standards within the logistics system driven by National Treasury. Effective and efficient financial management within government was continuously questioned. Moreover, a number of groups in South Africa were prevented from accessing government contracts. Prior to 1994, the government procurement system was geared towards large and established contractors. Thus, new contractors found it very difficult to participate in government procurement procedures. Moreover, the use of the logistics system as a tool for asset management also raised concerns regarding the improper handling of movable assets within the governmental environment. Since 1994, however, the South African government has made provision for the use of procurement as a means to address past imbalances. In addition, more emphasis was placed on integrated infrastructure development and the unlocking of government property to contribute to the optimization of resources. Over the past years, these concerns led the provincial treasuries, in conjunction with National Treasury, to embark on a vigorous reform initiative to introduce best procurement practices that are efficient and effective. To this end a new and strategically more powerful concept was pursued, namely, supply chain management.

1.1.3 Public Procurement Regulations in Kenya

The Kenyan PP system has evolved significant because of the developments from wrong system with no regulatory framework to most effective and procedural regulated Public Procurement practices (Onsongo, Otieno and Mongare, 2012). The Public Procurement in 1963-1978 was characterized by Treasury Circulars and Supplies Manual. In 1983-2001, the Supplies Manual embedded in what we call today sub-counties. In 2001-2007, Exchequer & Audit PPR were in place while from 2007 PP&D Act, 2005 was enacted. They further indicated that introduction of the PPD act 2005 & the PPR 2006 introduced new standards for PP in Kenya. PPRA (2016) indicates that the CoK 2010, demands the government to develop a Public Procurement laws and regulations to operationalize

article 227 of the CoK (Ombuki, Arasa, Ngugi and Muhwezi, 2014). The PP&AD Act 2015 was enacted and was operationalized in January, 2016 to the public. The PPR framework has both national and county application in relation to Public Procurement and the outlined rules and regulations that governs PP in both level of governments. According to Onsongo *et al.*, *(*2012) argues that adherence to the public procurement regulations system is the measure of performance and delivering of services in a procuring entity. The PPAD Act 2015 has indicated three relevant institutions in the regulation of PP in Kenya. The bodies are National treasury (NT), PPRA and Public procurement administrative review board (PPARB). PPRA is mandated as a regulatory and oversight body on matters relating to public procurement in both the governments in Kenya. The PPAD Act 2015 clearly indicates the responsibilities and mandates of the PPRA which includes and not limited over sighting and regulating the public procurement system, also the regulating body could make recommendations, initiate public procurement policy amendments and improvements for implementation and efficient operations of procurement processes (Institute of Economic Affairs, 2018).

1.1.4 Public Procurement Implementation level in the Devolved system of Governments in Kenya

Zuzana (2012) establish in her findings that effective implementation and procurement best practices are essential for budget implementation in devolved system of governments in Kenya. The General Audit report 2014/2015 FY have revealed irregularities in the public financial management and misappropriations which are linked to breaches in procurement regulations system and management practices, i.e. recruiting unskilled personnel, delayed supplier payment methods, poor inventory management, non-adherence to procurement audit recommendations and lack of undertaking monitoring and evaluation in the system.

Further the Auditor report on counties in the FY 2015/2016 showed a widespread of misappropriation of government funds through failure to adhere to set financial regulatory framework as control measures and failure to properly account for their

expenditures. This was confirmed by IEA report that revealed the failure to implementing effective procurement regulations, a breach on the Public Finance Management Act requirements, disparities in revenue collection as key inefficiencies practices faced in the devolved governments **(**Institute of Economic Affairs, 2018). It was established by Samuel and Doreen (2019) that county governments are facing challenges emerging from capacity and procurement staff competency on service delivery in many counties. This is due to unqualified people occupying jobs they do not have skills thus affecting the implementation of PPR and management practices for service delivery. This has created obstacle to socio-economic development and failure for tax payers to realize value for money on key projects in devolved system of government in Kenya **(**Institute of Economic Affairs, 2018).

1.1.5 Procurement practices in the devolved system of governments in Kenya

procurement practices majorly entails strategies put in place and followed closely during procurement decisions making and also mainly to be described as step processes of acquiring goods, works and services for a firm through laid down policies and procedures governing the choice and selection of suppliers, supplies, and methods which maximizes the organization's values to realize value for money (Sollish & Semanik, 2012).

These were reiterated by Bernard (2019) in his study on the Role of Strategic Supplier Relationship Management on Supply Chain efficiency in the government parastatal Sector. The study recommended that county governments maintain buyer-supplier relationship by engaging them at the point of developing of specification development to further capitalize on the advantage of the benefits that come with maintaining positive buyer-supplier relationship. Study by Cherotich (2018) on Procurement Practices on the County governments' performance in Kenya, described staff competence as the use of knowledge, skills and behaviors in undertaking the organizations' related activities. The Controller of Budget report 2013/2014 financial year revealed a diminished staff capacity level especially in procurement practices, negatively impacted budget

implementation in most county governments resulting in wastage of resources. The report further revealed that some procurement staff lack the knowledge to interpret and implement the PPAD Act 2015 which significantly have resulted in ineffectiveness of procurement processes (Cherotich, 2018).

Kibet (2017) study findings, affirm the report by the office of Auditor General revealing a weak devolved governments' financial system of control that have led to misappropriation of funds in county governments. For example, the report indicated that Busia County Assembly was failed to account for Kshs. 10.7 million paid to five contractors for public sensitization on a single bill which is against the financial regulations. Internal control systems is the process which needs to be put in place to give confidence on the achievement of entities objectives. The financial reliability on reporting, efficiency on the financial operations, as well as adherence to other laws and regulations that could be applicable has failed and are lacking in most county governments in Kenya (Chemeltorit, Namusonge & Wandera, 2016).

1.1.6 Devolved System of Government in Kenya

Devolution in Kenya dates back to the year of the country's independence in 1963, although it was short-lived due to the lack of a solid philosophical foundation in either the KADU or KANU party, which was in charge of implementing it (Maxon, 2009). The Kenyan Constitution of 2010 established a decentralized structure of government, with the Legislature and the Executive being delegated to the 47 Political and Administrative Counties in accordance with Article 6. Decentralization's main goal was to distribute authority, resources, and representation locally. Through the division of duties, devolution was viewed as the key to releasing Kenya's economic potential.

Decentralization made it possible for Counties to formulate policies, plan and collect money, implement budgets, accounting, auditing, monitoring, and evaluation procedures, as well as include citizens in decision-making (Maxon, 2009). Giving the people the ability to self-govern and increase their participation in the exercise of power

in making decisions that impact them are two of the devolutionary goals listed in Article 174 of the Constitution. The Article also acknowledged communities' rights to run their own affairs and advance their development.

In 2013, the 47 County governments became operational. The national government system that has been in place since independence was completely altered by this (CRA). The national government faced a wide range of issues, such as marginalization, enormous inequities, resource mismanagement, and the isolation of many people from the decision-making process. A decentralized system of governance was improved via the establishment of institutions, policies, and regulations. For instance, it is the responsibility of the Commission on Revenue Allocation (CRA) to suggest a basis for the fair distribution of national tax resources between the federal and county governments.

The Commission formed pursuant to Article 215 of the Kenyan Constitution of 2010 has a crucial role in making recommendations with regard to issues involving the funding and financial management of both the national government and county governments. According to UNDP, the process of moving to a decentralized system is one that will take time (2015). Both at the national and local levels, the research revealed policy gaps. A policy framework is required to make sure that devolved institutions are effective and based on solid legal principles. The devolution process has been hampered by these and other difficulties.

The transfer of authority and resources to lower (sub-national) levels of government that are both (relatively) autonomous of the national government and democratically elected is known as devolved government, sometimes known as devolution (also known as democratic decentralization). "Devolution and access to services" is defined as the third of eight components characterizing The Republic of Kenya beginning in Chapter Two of the 2010 constitution. The objectives and principles of devolved governments, the nature of devolved government (47 counties), the functions and powers of these 47 county governments, the borders of the counties, the relationships between and among county

governments and the national government, the justification and procedure for suspending county governments, and other details are all spelled out in great detail in Chapter Eleven of the 20 0 constitution.

The County Treasury is the body tasked with carrying out the county's public procurement and asset disposal policies, as per the public procurement and asset disposal statute of 2015. The County Treasury will develop a procurement department to implement public procurement and asset disposal procedures; coordinate administration of procurement and asset disposal contracts; coordinate consultations with county stakeholders of the public procurement and asset disposal system in collaboration with the National Treasury and the Authority; and advise county government entity accounting officers. Additionally, the County Treasury may establish an institutional structure to support the county government's procurement, administration, and management of common user products (PPADA, 2015).

1.2 Statement of the Problem

Most government projects are conducted through public procurement, therefore monitoring and assessing implementation procedures is necessary to give service to citizens and obtain value for money (Musyoka, 2022). Effective procurement regulation procedures can save money and improve quality and efficiency. Implementation difficulties caused the government ksh. 20 billion shillings in malpractice damages (PPOA, 2011). The Kenya National Bureau of Statistics (2012) reports that Kenya spends over Kshs.150 billion on public procurement, losing 20% due to inadequate procurement practices.

The Commission of Revenue Allocation 2018/2019 financial year gave counties Ksh. 314 billion for development as required by the Constitution of Kenya 2010. Due to these substantial allocations, most county governments have been criticized and investigated for procurement malpractices, corruption, ghost projects, and massive waste of public resources due to non-compliance in procurement processes (Cherotich, 2018). The 2016

PPOA audit found that 40% of procuring entities lacked qualified procurement employees to competently manage county procurement. Ringa (2017) found that most county procurement workers lack the knowledge and experience to implement procurement procedures as required by the Act, which has hampered service delivery. According to Cherotich (2018), procurement staff competence comes from professionalism, which means providing technical and specialized support. Professionalism should be learned and experienced.

The PPRA 2017/2018 audit showed that county executives averaged 39.70%, which is marginally compliant with the procurement system and high risk at 60.30%. The audit found that Migori County Government failed to submit procurement documents to support their procurement processes, resulting in a zero-compliance score and a 100% risk of non-compliance. A procuring entity may not get value for money in procurement activities if the risk score is high. The analysis showed that all County Assemblies had a 46.6% implementation rate and a 53.4% procurement non-compliance risk. Trans Nzoia County Assembly has zero compliance and 100% risk since it did not produce procurement documentation.

The 2017/2018 PPRA audit found 223 supplier and public complaints against County governments procuring entities. At the end of FY 2017/2018, PEs had handled 146 complaints and 77 were unresolved. The complaints were about tender evaluation and specifications, Suppliers' delayed payments, lack of notification of awards, tender notice errors, alleged corrupt practices during procurement proceedings, termination of procurement proceedings, and procuring entities' failure to respond to bidders' tender information requests. This contradicted Otieno, Kiongera, Odero & Makori (2022), who found that SRM management methods can improve county government procurement efficiency and boost operations.

The PPOA Annual Report 2015/2016 found that most County government procuring bodies struggle with maintaining store records, security, and stocktaking. According to the assessment, the procuring companies had out dated Assets Registers, which violated

inventory controls and management. The PPRA (2019) audit on compliance monitoring assessment report of 2017-2018 financial year showed that Bomet County has 65% compliance, which is marginally complaint, and 34% risk. The County government had no disposal committee or procurement and disposal manual/policy. According to the audit, Busia County's compliance level was 59.8%, marginally compliant, and 40.2% moderate risk. The county government's inventory management of stores records were outdated since the ledger and physical balances for the sampled items didn't match and the storage facility was inadequate and improperly ventilated. PPRA (2019) found that the County government of Mombasa had a marginal compliance level of 75% and a moderate risk level of 25% during the 2017-2018 financial year. The procurement statute required goods and services to be inspected, but the committees were not properly constituted, most records were not carefully maintained, and there was no proof of inspection and acceptance committee appointments. 61% of Kisumu County's compliance was marginal and 39% moderate.

Ombuki *et al.,* (2014) demonstrated that county governments struggle to adopt procurement policies despite procurement regulatory body efforts to set effective compliance levels. Mburu (2012) and Khadija & Kibet (2015), examined PP implementation in public organizations. Njeru (2015) examined the implementation of PP in tertiary training institutions, leaving a huge knowledge gap on PPR administration and implementation in devolved governments in Kenya.

1.3 Objectives of the study

1.3.1 General Objective

The study was to establish the relationship between procurement practices and level of implementation of public procurement regulations in the devolved system of governments in Kenya.

1.3.2 Specific Objectives

The study sought;

1. To analyse the relationship between procurement staff competency and level implementation of public procurement regulations in the devolved system of governments in Kenya.
2. To establish the relationship between Supplier relationship management and level implementation of public procurement regulations in the devolved system of governments in Kenya.
3. To determine the relationship between inventory management and level implementation of public procurement regulations in the devolved system of governments in Kenya.
4. To investigate the relationship between Procurement Audit practices and level of implementation of public procurement regulations in the devolved system of governments in Kenya.
5. To ascertain the moderating effect of monitoring and evaluation on procurement staff competency, supplier relationship management, Inventory management, and procurement audit practices on level of implementation of public procurement regulations in the devolved system of governments in Kenya.

1.4 Research Hypotheses

This study was guided by the following Alternative research hypotheses;

H_{a1}: There is a significant relationship between procurement staff competency and level implementation of public procurement regulations in the devolved system of governments in Kenya.

H_{a2}: There is a significant relationship between supplier relationship management and level of implementation of public procurement regulations in the devolved system of governments in Kenya.

H_{a3}: There is a significant relationship between Inventory management and level of implementation of public procurement regulations in the devolved system of governments in Kenya.

H_{a4}: There is a significant relationship between Procurement audit practices and level implementation of public procurement regulations in the devolved system of governments in Kenya.

H_{a5}: There is a significant moderating effect of monitoring and evaluation on procurement staff competency, supplier relationship management, Inventory management, and procurement audit practices on level implementation of public procurement regulations in the devolved system of governments in Kenya.

1.5 Significance of the Study

The study is important and may be used by several stakeholders in County government and also in the national government including future researchers and academicians, donors, procuring entities, procurement regulatory bodies as stated in the PPAD act 2015; National treasury (NT), PPRA, PPARB and KISM. This study informs of a

comprehensive insight into the procurement activities and management practices in the devolved governments in Kenya. Study reveals how procurement practices and implementation of public procurement regulations have contributed towards county governments' ability to see value for money on its investment expenditure in meeting its mandated obligations.

In addition the study suggests areas for further studies where future scholars and researchers can concentrate their studies. For the county governments, the study finding informs the management practices and implementation level of PP regulations in the organizations for effectiveness and efficiency in the procurement system. The study significance is to the stakeholders and both the governments' agencies in Kenya since the finding immensely contribute to the implementation of institutional regulatory frameworks and improve the implementation of public procurement procedures. It is of significant importance for the procurement professionals in both private and public sector, for it would contribute to the knowledge gap to theory and practice of implementations of procurement regulation system. The importance of the study to both governments will be to provide clear guidelines on how public organizations can implement effectively procurement procedures hence leading to proper utilization of government financial resource management.

The scholars, researchers and students will as well benefit from the study findings because they are involved in procurement research practices, since the report provides ready reference materials that would add to the learner's knowledge and skills on issues relating to Management practices and implementation of PPRF in the devolved governments in Kenya. The significance of this study is that it shed light on areas that has not been addressed by many researchers that this study has come across. With the level of funding to the county government on development and to realize it objectives, public procurement regulations must be effectively implemented on improving procurement staff skills, supplier relationship management, inventory management and procurement audit practices.

1.5.1 County Governments and Relevant Institutions

The study findings is of great significance in improving on policy making and implementation implications in the County governments since the devolved governments are critical public sectors that have been identified from the CoK 2010 to facilitate economic growth and help achieve Kenya Vision 2030. The study finding is relevant to the county government's procurement staff in ensuring adherence and compliance to procurement Audit recommendations and the effective inventory management system. These findings also would help the county governments to understand the importance of investing in procurement staff capacity building, supplier relationship management activities, inventory management practices and procurement audit practices to enable achieve its obligations. The economic growth and development of Counties is fundamentally important; hence the findings will facilitate the full implementation and compliance with Public Procurement regulations to reduce the Procurement malpractices.

1.5.2 Researchers and Scholars

The study findings are a value addition to researchers and scholars in providing more knowledge and insights on how management practices and level of implementation of the Public Procurement regulation affect County Governments in Kenya. The finding also brings a theoretical framework for future research on PP regulations in County Government deliveries. The results are of value to procurement professionals as its contribution knowledge of practice of effective Public Procurement system. Not many attempts have been carried out to find out on management practices and implementation of PPR framework in the devolved governments in Kenya. The findings will sensitize several researchers in methodology development for operationalizing the implementation of Public procurement regulations and also assist procurement practitioners and entities in general to adhere to the regulation system in improving

performance in the institutions, thus achieving value for money, improving customer satisfaction, increasing public confidence and trust.

1.6 Scope of the Study

Study focused on Forty-seven (47) devolved governments in Kenya taking into consideration of procurement practices and level of implementation of Public Procurement Regulations in the Counties. Specifically, the study evaluated the relationship influence of procurement staff competency, supplier relationship management, Inventory Management practices, Procurement Audit practices, monitoring & evaluation as moderating variable on the implementation level of Public Procurement regulations. The study was anchored on Resource Dependency Theory of the Firm, as well as Theory of Constraints and The Policeman Theory. Also examining the Procurement Performance Models i.e. (Compliance- Performance Reform Cycle Model & the Four Pillars Model), and the Institutional theory and finally the study looked into competency model theory. The conceptual frame work clearly illustrates the relationship between the independent, dependent and moderating variables. Methodology adopted ensured appropriate data collection using appropriate methods and that have specifically covered the design, research philosophy, target population, sample & Sampling techniques, data collection procedures, pilot testing, reliability & validity and data analysis & presentation. This study was undertaken within a period of twenty-four months.

1.7 Limitations of the Study

The public institutions are required to adhere with the public service regulations for public officers on information sharing and code of ethics and due to this, the gathering of the information from the county officials was a challenge since some of the officers from these procuring entities were not ready to share any information who felt that they were being investigated and therefore heisted to release the same to the researcher. The challenges were overcome through letter of introductory from the university as an

assurance to the organization about the study findings to be used strictly for the purposes of the study. This build the management confidence and the issues of suspicion were dealt with. Therefore, the organization was able to give information as was requested by the researcher. The emerging issues of some of the respondents not filling or completing the questions or some issues not being understood, inadequate responses to questionnaire. This was dealt with through several calls that the researcher made as a reminder to the respondents during the period the filling the questionnaires and also being patient with the respondents. The administering of questionnaires in the 47 county governments was achieved hence 100% feedback.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter discusses literature existing on procurement practices and implementation of public procurement regulations in the devolved system of governments in Kenya. The section covers conceptual framework, theoretical framework, empirical literature, critical review, summary and research gaps. It also considers the linkages to ascertain the existing relationship among the variables. This section also brings a justification of study besides the monitoring and evaluation and underpinning the conceptual framework. Many studies have been reviewed relating to the problem under study. The review of Literature was from, journals, books, academic publications, and statistics from the government. Research work, main findings, theoretical bases, the research methods used and their mode of data analysis was reviewed and accompanied by the discussions of theoretical bases of reviewed studies.

2.2 Theoretical Framework

The research was anchored on the Theory of Constraints, The Policemen Theory, and also borrow from Resource Dependency Theory of the Firm. The study examined the Procurement Performance Models i.e. (Compliance- Performance Reform Cycle Model & the Four Pillars Model), institutional theory and competences models theory. The study developed a conceptual frame work with the following variable of independent, moderating, dependent variables; i.e. procurement staff competency, supplier relationship management, inventory management, procurement audit practices and monitoring and evaluation as a moderating variable, public procurement implementation level.

2.2.1 Institutional Theory

In order to further investigate how organizations fit with, are related to, and were molded by their societal, state, national, and global surroundings, John Meyer and Brian Rowan established institutional theory in the late 1970s. According to Eyaa and Oluka (2011) who argued about failed common agreement on the definition of institutional theory. Institutions are collection of cultural standards, norms and regulatory frameworks, including activities that are related and the resources that provide healthy operations to the organization. Institutions have identified three key pillars that should be considered in the discussion i.e. regulatory, normative and cultural cognitive. The regulatory pillar discusses about the rules, laws and sanctions in the implementation mechanisms as in the case in county governments in Kenya which are public institutions. The normative pillar are values and norms, social obligation on compliance levels in the organization.

The pillar of cultural-cognitive emphasizes on the understanding shared on the various key stakeholders. Public procurement in Kenya is regulated through the PP&AD act 2015 and PP&AD regulation 2016. Treasury and PPRA circulars, regulations, policies and guidelines which are issued regularly that must be adhered to within the organization. According to Amayi *et al.,* (2013) cognitively oriented view is that a given institution is encoded into an actor through a socialization process which when taken into consideration transforms a behavior. After sometime, institutions can be sediment and may not be considered important and may not be understood to realize that the behavior within the institution is controlled and hence causing lack of compliance to the required regulations. Meyer and Rowan (Undated) argue that the environment of institutional influences strongly the development of organization formal structure which when improved the efficiency of the legitimacy of the organization within the environment. However, these organizational formal structures may reduce performance and hinder organization competitiveness in the environment.

An approach to comprehending organizations including management techniques as the results of social instead of economic constraints is known as institutional theory. Because it can be used to explain organizational actions that defy economic reason, it has gained popularity in management theory. It has been used, for instance, to explain why some managerial innovations spread among organizations or are adopted by them despite the fact that they do not increase organizational effectiveness or efficiency. According to institutional theory, the argument is based on the fundamental notion that social forces for conformity and legitimacy frequently exert a greater influence over organizational practices than do technical requirements for economic performance. The evolution of formal structures inside an organization can be significantly influenced by the institutional environment, often more so than by market forces, according to institutional theorists. Innovative organizational structures that boost technological effectiveness in early adopter organizations are given environmental legitimacy. Finally, the failure to adopt these innovations is viewed as "irrational and negligent," at which point they have attained a level of legitimization.

In recent years, the importance of using public procurement as a tool to promote innovation has grown. The general claim is that governmental agencies may encourage private sector innovation that will ultimately boost competitive edge in the global marketplace by using intelligent demands. The focus on public procurement as a tool for innovation policy challenges existing institutional norms and competencies. The premise of the institutional analysis presented here is that institutions, regarded as ex ante structures that have at least been effectively jointly agreed upon, govern, sustain, affect, and/or regulate human collaboration. A governmental body that needs to find a solution to an issue or meet a specific requirement is the simplest type of public procurement of development. The purchaser may be an authority on the issue at hand, but not frequently on the premises of the solution.

The provider might be in possession of the expertise, abilities, and resources needed to develop a solution, but it lacks particular information regarding the demand the public agency is trying to fill. In this view, the ultimate objective of the procurement procedure

is to identify a supplier that, in exchange for a specific sum of money, will meet that demand by using its resources and expertise to address a specific issue. In order for the supplier to eventually learn how to use its tools and abilities, this process necessitates interaction between the procurer, the supplier, and maybe additional stakeholders. After the official contract between the purchaser and vendor has been made, the solution, or the service or item that has been purchased, is at least partially constructed. This means that at least some components or features of the acquired item are unknown at first. In turn, this produces certain traits that set public procurement of development apart from acquisition of standard off-the-shelf commodities. This makes public procurement of development a complicated and participatory process where learning, "which requires interaction between individuals," serves as the primary activity.

The theory highlights on institutional and organizational effectiveness and efficiency in the operations within the devolved governments. Mallin, Michelon and Raggi (2013), stated that organizations that have adopted effective governance structures are more focused and can accommodate different views from external in enhancing growth. These helps when making rational managerial decisions focusing on the organization's objectives. This theory foster on the reasons rules, laws are regulations governing public procurement should be observed, complied with and implemented fairly and objectively in the devolved system of governments in Kenya.

2.2.2 Competency Models (CM) Theory

Competency is described as the application of knowledge, skills and behaviors in undertaking the organizations' activities and duties (Cherotich, 2018). Competency theory models is a framework that assists to discover a combination of the knowledge, skills, abilities and behaviors which are demanded in an organization. The model can be considered important if the competences comply with the job activities of the individual staff (Waithaka *et al.,* 2012). It was argued by Munjuri (2011), that the technical competences can be attained through job training of the human resources to empower the organization with variety of key competences as required. According to Okoth

(2013), stated that in 2013/2014 financial year Ksh. 300 billion was set aside to benefit the special interest groups in Kenya through participation in the public procurement.

Nasio *et al.*, (2003) argues that the government both national and county should put more interest in promoting local investors for this will ensure the control of the economy is not hijacked by the foreign investors. According to Apiyo and Mburu (2014), the national and county governments should facilitate their procurement staff to growth and development through undertaking job training initiatives to boost their skills and knowledge to enhance better procurement management practices while discharging their assigned duties in the devolved system of governments in Kenya. The theory highlights the importance of skills, knowledge and aptitude the procurement staff should have to effectively and efficiently discharge their duties in public procurement processes.

2.2.3 Theory of Constraints

The theory of constraints (TOC), often known as the theory of limitations, is a management approach created by Eliyahu M. Goldratt. Its goal is to support companies in attaining their goals throughout their existence. The TOC, is a management framework that enables any manageable system to be confined in some way by a very small number of additional constraints in order to achieve more of its objectives. The TOC is another name for this framework. There is always at least one constraint, which TOC uses to identify and reorganize the structure around. Always there is at least one restriction.

The essential premise on which the theory of constraints is based is that a chain is only as strong as its weakest link or constraint. This theory states that the limitation in question needs to be lifted and managed appropriately (Kairu, 2015). Long lead times, a high proportion of unfulfilled orders or orders that require a lot of extra work (overtimes) (Modi, Lowalekar, & Bhatta, 2019), a high level of unnecessary inventories or a dearth of pertinent inventories, incorrect material orders, a high proportion of emergency orders, and expedition levels are difficulties in the theory of constraints.

High amounts of transfers, a lack of important customer involvement, frequent modifications, or an inability to control priority orders are the main causes of conflicts in resource schedules. These things together lead to a lack of control (Ceniga & Sukalova, 2015).

If one were to adopt any sort of theoretical model of constraints, they would need to concentrate on efficiently managing the capacity and capabilities of these restrictions in order to enhance their organization's operational performance (Gupta & Boyd, 2008). The development of effective methods for the management of inventories may make this goal possible. Businesses have found it challenging to invest in the necessary technical improvements and organizational structure adjustments to achieve the level of system synchronization required for integrated inventory movements. Businesses have found it challenging to integrate their inventory as a result. This synchronization is necessary in order to display the system's most recent status (Fawcett, Ogden, Magnan, & Cooper, 2006). Achieving the highest possible levels of operational efficiency, effectiveness, and performance requires the use of effective stock control procedures, according to the theoretical framework known as the Theory of Constraints (Cox & Schleier, 2010).

Most business enterprises in the working capital have occupied by inventories in the most strategic position (Schrady, 1967). Inventories contain the largest elements of the current assets in business enterprises. Inventory means aggregate of those several items which are held for sale in the course of business activities. It is therefore, absolute to manage inventories efficiently & effectively in order to discourage unnecessary investment. The firm’s long run profitability can be jeopardized by neglecting the management of inventories (Pandey, 2010). Inventory models are used in predicting the demands on inventories which have been classified as either deterministic or stochastic (Zappone, 2006). Deterministic inventory models are which demand in a given time period is known, whereas in stochastic inventory model, demand is a random. Also, inventory models can be classified by the way it is reviewed, either continuously or periodically. In continuous model, the order is placed at a prescribed re-order level. In a periodic review, inventories are checked at intervals and decisions to order are made

even if inventory falls below the re-order level during review times (Hillier & Lieberman, 1995). Inventory theory responds to questions like when to place an order (Ozerand & Wei, 2004). What is the volume for each order? These answers to the questions are both collectively known as inventory policy.

Demand is met on time when companies keeps inventory awaiting sale in the market. Product units that will be withdrawn from inventory for some use during a season is the demand for a product in inventory. The demand for future periods of a product should be forecast with considerable precision. Ozer and Wei (2004) indicated that however, when there is lack of demand prediction it becomes necessary to use a stochastic inventory model where the demand in any period is a random variable rather than a known constant. Reverse supply chain means that the company now has to deal with more inventories that anticipated some of which can be reused, recycled or destroyed altogether. In this study, the inventory theory provided insight into procurement policies implementations within county government for efficient procurement performance. This theory was used to explain how effective inventory management practices has made significant contribution to the organization in the realization of value for money.

2.2.4 Policeman Theory

This theory states that audit process is responsible for investigating, control & preventing. Detecting Fraud is still a serious issue for discussion on the auditor's responsibilities. Policeman theory was the most widely held theory on auditing until the 1940s (Hayes, Schilder, Dassen and Wallage, 1999). They further stated that up until the 1940s it was strongly held that auditor's job was to focus on accuracy arithmetical and on prevention and detection of fraud. According to the policeman theory, the audit committees should put in place mechanisms to detect fraud before it happens just like a policeman tries to prevent crime from happening. In terms of quality of financial reporting, audit committee is viewed to perform the duty synonymous to that performed by the policemen such as to check and detect any instances of frauds in the organizations. Therefore, an audit committee that is independent, diversified, and

financially competent and has quality meetings is perceived to exercise their mandate more effectively. For instance Elder *et al*., (2009) stated that the common most way for users to get up to date information (reducing the information risk), is to have an independent auditing committee.

On the same thought, DeZoort *et al*., (2002) asserted that an effective audit committee will defend the interest of stakeholders to ensure correct and accurate financial reporting, effective internal control, and risk management within the system. Similarly, Turley and Zaman (2004) viewed that the impact of audit committees as policemen may largely enhance formulation of high expectations of the audit committee function, based on the effectiveness of audit committees. Salehi, Rostami and Mogadam (2010) also adopted policeman theory describing the importance of accounting information system in the current economy. This theory was important in explaining the role of procurement audit practices in the study on quality of compliance level reporting system among government organizations.

2.2.5 Compliance Performance Reform Cycle Model

The Compliance- Performance model was developed by Thai (2009), and is one of the most useful models that describe how procurement performance can best be assessed. Thai (2009) observed that one of the obvious controversies about procurement management worldwide is lack of uniformity within the system of reform agendas on what Public Procurement should comprise of on its strategic significance. As propounded by Thai (2009) and depicted in the model below, Public Procurement involves two types of management- 'process' management and 'performance' management. Whereas the former focuses on ensuring "Compliance", the latter is mainly concerned with attainment of the "outcomes". When government institutions recognize the strategic importance of Public Procurement, the processes and performance can easily be balanced and necessary professional skills, incentives, value for money performance measures attained and developed (Schapper and Basheka, 2009). A significant amount of literature and studies on public procurement however, indicate

that procurement is mainly defined as a field and practice which is focusing more or 'Means' Process than 'Ends' performance (Lysons, 2012).

While defining and investigating the procurement activities in public institutions in the republic of Tanzania focusing on the processes, procedural guidelines and adherence to the set regulations, the application of the below model was adopted advocating for the focus to shift from performance and put more emphasis on the procurement function. Compliance – Performance Model was very useful and categorical in explaining the two indicators of the dependent variable. The DV of Performance Management was 'Performance of Procurement Departments' which was measured in terms of compliance level to the existing procurement law & regulations in one hand, and the achievement of procurement objectives on the other. According to Oketch (2014), Public Procurement has drown close attention from both the private and government systems of operations and of the management of reforms worldwide. Similarly, Global Partner and Associates (2012) also noted that these reforms are driven by a deliberate attempt to increase performance and to be effective on cost of the Public Procurement. The Public Procurement reforms however, have constantly been hindered by conflict & debate between the public principles, such as accountability and transparency versus outcomes and performance (PPOA, 2011). This model was important in explaining and demonstrating the significance of procurement management practices in the study in ensuring compliance to the procurement procedures in attaining the institutions' objectives.

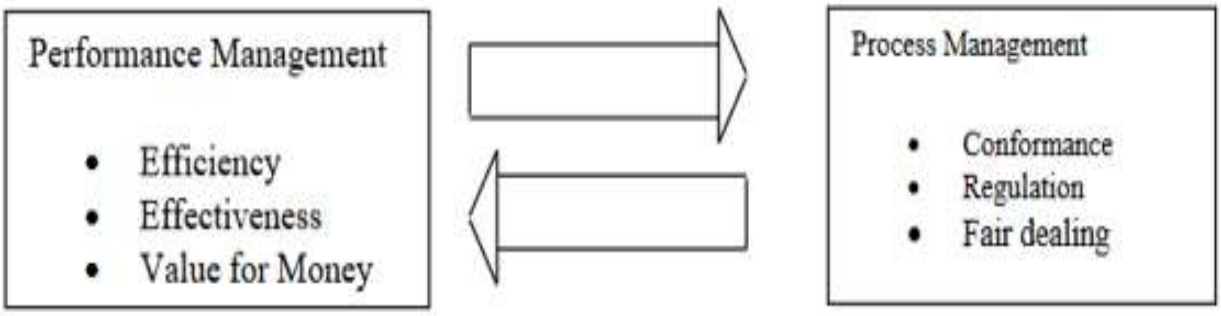

Figure 2.1: Compliance – Performance Reform Cycle

(Source: Thai, 2009)

2.2.6 Four Pillars Model

The four-pillar model was developed by the WBDAC of the OECD and several developing countries. The model was found to be appropriate and is applicable for the purposes of improving quality and efficiency in public procurement system in organizations in a number of countries (Marendi, 2015). The legislative pillar and regulatory is considered while assessing the extent to which the existing procurement regulatory framework complies with the both the levels of governments and the international standards with key interest on regulations, documentation and tools to assist the implementation of regulatory framework. It deals with quality and use of the existing procurement procedures and guidelines, circulars, standard tender documents and standard conditions of the procurement contracts.

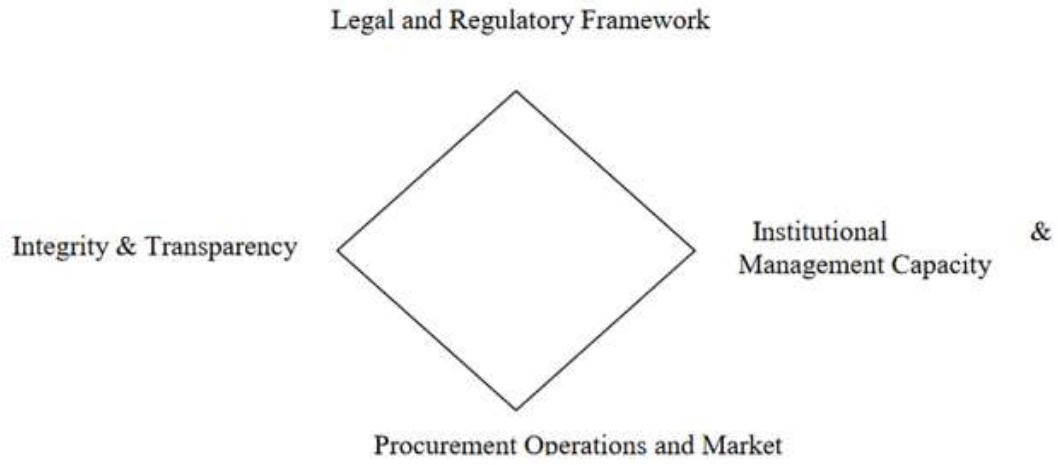

Figure 2.2: Four Pillar Model

Source: OECD/DAC (2007)

2.3 Conceptual Framework

According to Mugenda & Mugenda (2012), conceptual framework is the structure that provides clear links from the literature to the research objectives and holds together all the elements in research. Conceptual framework demonstrate the way research conceptualize the relationships within the variables. After a review of relevant theoretical literatures, a conceptual diagram is presented showing the procurement management practices and implementation level of public procurement regulatory framework in devolved governments in Kenya. In summary, it is conceptualized that, the DV was Implementation level of PPR in devolved governments and the IV were procurement Staff competency, Supplier Management., Inventory Management, Procurement Audit practices.

It is conceptualized from the study that the biggest expenditures globally are the governments, spending an average of above 60% of the GDP as agreed by (Matindi, 2013 and Aketch & Karanja, 2013). According to Alande (2013), argues that devolution is the heart of constitution and therefore, governors should uphold the constitutional

spirit through effective management practices and implementation of public procurement regulations to improve on the delivery of services to the citizens. Okoth (2013) discussed that to ascertain an environment for effective implementation of PP regulations, there still exists barriers in the implementation process due to poor procurement practices.

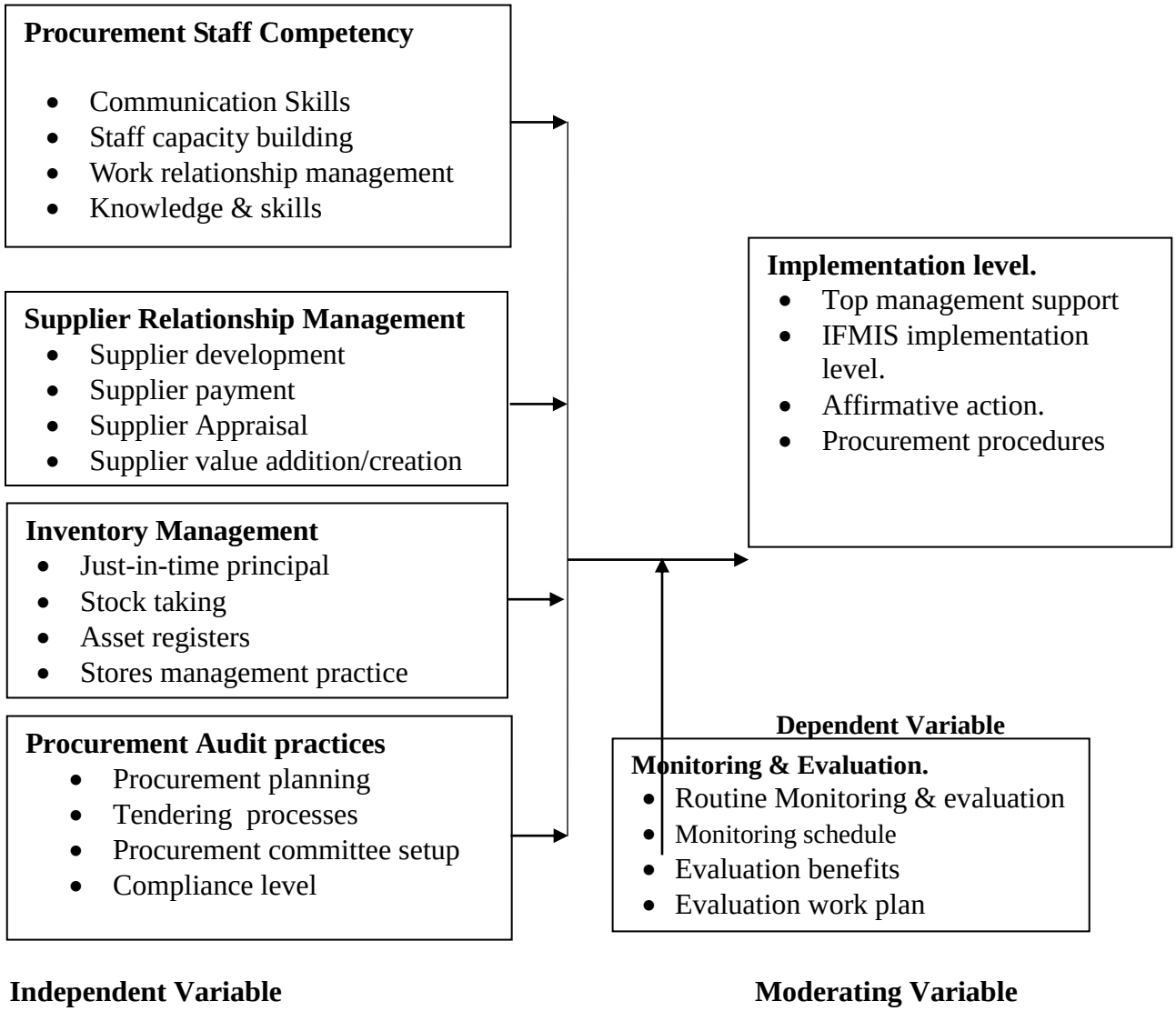

Figure 2.3: Conceptual Framework

2.3.1 Procurement Staff Competency

According to Aketch & Karanja (2013), procurement staff competence can be described as related characteristics of different set of behaviors. Competency can be several abilities, commitments, knowledge, and skills that enables a person or organization to be efficient and effective in a job or situation. Hui *et al.,* (2011) pointed out that procurement officers should and must undergo training and be conversant with all procurement regulations in order to be efficient and effective. Appiah (2010) also observed that, the system of education never give any specific knowledge & skills required for a specific and professional job positions in an institution. Due to this knowledge gap, the demand in the labour force has limited professional staff with the required skills, knowledge and competencies needed in the job market.

Therefore, there is need for capacity building for human resource to enhance the productivity of the institution. In same context, Ndumbi & Okello (2014) also asserted that training of staff has been increasing productivity of organizations. They further stated that not only training increase staff productivity level, but also empower staff to understand their assignments by effectively performing competently. Not only training is assessed on employee's productivity but also organizations' performance. An annual report by the PPOA (2013) & KISM (2014) revealed that many procurement staffs in the PEs are limited about the information of Public Procurement regulations. Kiage (2013) reiterated that continuous training of staff is also important in improving procurement professional skills and knowledge which improves the procurement practices in procurement processes in county governments.

Cherotich (2018) discovered in the study that Staff Competency and Procurement best practices needs right skills and experience to qualify for the effective management of procurement activities, in essence, staff competencies impact on the procurement functional performance extensively. It is discovered that experienced procurement staff manage their duties professionally and eliminate wastage of resources. To achieve effective and efficient procurement practices, proper planning by skilled staff is of great

value to the entire procurement processes. Procurement staffs who are competent in their duties will always ensure that goods, services and works are procured as and when need arises (Cherotich, 2018)

Hui *et al.*, (2011) investigated procurement practices in Malaysia and discovered that malpractice and non-compliance to procurement regulations in procurement was always blamed on the procurement officers. He further discussed about the inefficiency in the procurement systems and there was wastage of the government resources through shoddy deals. Wanyonyi and Muturi (2015) discovered that the main player in improving staff competence included training of the procurement staff, team work enhances the procurement staff work relationship, and familiarization with the procurement regulations.

2.3.2 Supplier Relationship Management

According to Kumar (2018), describes Supplier Relationship Management as ways and forms of interacting with suppliers. Supply chain specialist viewed supplier relationship management to be a structured system approach in defining what they expect from a supplier and managing the links between the companies to achieve the desired needs. SRM plays an important role between the organization and the end user. Several Organizations have challenges within their chains of networks hence loss of business. It is advisable for such organizations to consider and adopt Supplier relationship management practice to increase their efficiency in the supply chain. Hughes (2010) states that inefficient and ineffective in the supply chains process are major causes of inadequacy in the organization achieving its set goals. He further insists that organizations with integrated supply chains network process posted a high profit than those who paid less attention to supply chains process.

Abdallah, Obeidat, and Aqqad (2014), researched on the impact of supplier relationship management on manufacturing firms on performance in Jordan. Study findings revealed that twin practices of firm's Supplier relationship management that is the supplier

partnership – as well as reduction on supplier lead time considerably affected buying firm's competitive performance. Supplier relationship management has become a very significant part of businesses due to increased competition; therefore the necessity to take into consideration the sustainability of the organization and threats; also to aim towards reducing costs as to achieve cost competitiveness; hence the significance to form better interactions with key suppliers who may be able to assist in offering the knowledge required to come up with ground breaking innovative goods and profitability introduce them to customers (Lambert & Shwieterman, 2012).

The SRM goal is to streamline and make efficient and effective process among the product and suppliers (Kosgei & Gitau, 2016). SRM in the recent past achieved relevance and enhanced supplier's positive relationship by minimization of costs in procurement and quality product deliveries that have contributed to better performance both in the supply chain and within the organization. Similarly, Kamau (2013) viewed that when communication is enhanced, trust, commitment, mutual goals and cooperation which are key in effective SRM, the organization will be on appositive productivity level of operation. Poor supplier record management leads to high costs incurred in prolonged order cycle times. This leads to poor organization productivity due to lack of maintaining good relationships with their suppliers.

2.3.3 Inventory Management

According to Vrat (2014), inventory is the physically goods stored to address the issue of expected demand. He later viewed inventory from the material management perspective to be resource which remains idle but with economic value attached. He further, stated the importance it is importance of buffer stock that will take care of unexpected demands to avoid causing delay in production and deliveries due to stock outs. The current inventory management system includes MRPI, MRPII and JIT. MRPI is a dependent demand system meaning whatever the materials will be used for will either increase or decrease it's for use. If the quantity of raw material used in manufacturing a given unit of finished product is known, and the total quantity of

finished product to be manufactured is known, then it is possible to calculate the total materials required for a given production program (Yu, Wang & Liang, 2012).

Efficient inventory management performance should include stock tracing and batch tracking. This indicates that tracing a particular item backward or forward from source to finished product and identify the other items in the batch is much easier (Ranganatham, 2011). Automation of inventory management system makes tracking relatively straight forward and it is time saving. Manual inventory management system can use coding to ease the tracking process of particular batches (Obermaier & Donhauser, 2012). Thomas (2016) states that inventory estimate of productivity include two types. First to consider how inventories could be well monitored and the commonly used is inventory turnover. Secondly it considers how inventory operates in providing the users and the measures are customer service. He further stated that, although several organizations are keen on held inventory, there is need to relate this to the usage of material and the measure used to carrying inventory turnover. Similarly, Nair (2015) argues that this could be seen on the level of inventory utilization or consumption. According to Kontus (2014), insurance, storage and spoilage are functions of higher inventory costs levels. He points out that management ought to carry an evaluation of inventory levels to ensure of the lowering of inventory costs and improving in the profitability of the organization. Inventory management is looked into as way of making sure that what was required to sustain the operational activities are provided for holding ordering and carrying costs at the lowest. Kumar, Garg and Agarwal (2019), pointed the necessity of low inventory levels which has led to the development of models to determine the exact inventory level to be held. These models are both deterministic or probabilistic i.e. deterministic models are on the assumption of demand and replenishment of inventories will take place. On the other hand, a Probabilistic model is of the assumption that inventory demand patterns and lead time have some uncertainties (Akcay, 2013).

The commonly used models are, EOQ model; ABC analysis & ITOR are the commonly used models. According to Okwabi (2014), EOQ is a model which finds order quantity

that reduces cost. EOQ answers questions relating to how frequent materials buying, when and what stock to be held. According to Arslan & Metin (2013) they viewed that effect of environmental & social factors in management of material has changed EOQ model to accommodate the environmental and social factors. According to Muhammed & Omar (2012) EOQ is an important element in ascertaining inventory held. EOQ is the additional quantities required to the available inventory in reducing stock outs. They further described that EOQ in deciding the order quantity, frequency and costs can help minimize expenses. Akcay (2013) stated that cost of ordering and carrying are to be centralized on deciding the EOQ level.

Okwabi (2014) argues that the optima EOQ is ascertained at the level point when the two costs are less. He states that cost of ordering is as a result of order placement, requisition, storage, administration, and transportation. On the flipside, he said, carrying costs is due to insurance, obsolesce, administration& warehousing. Khan, Deng and Khan (2016), discussed inventory TOR to be a method used by industry to judge performance of inventory. They described ITOR as the goods value sold to the inventory average value. According to Khan *et al.,* (2016) ITOR vary in the organizations gross margin, capital intensity, and sales surprise.

Shardeo (2015) further discussed the third scenario of inventory is when items are not demanded requiring early disposal which is an indicator of dormant or obsolete items. Beside the discussed models above, the literature shows several techniques which are sometimes used to control inventory. Shardeo (2015) have identified the JIT system as a technique to eliminate the reason to carry large inventories in the organization. The study described the system required materials to be in the firm or just before they are used. The study pointed out outsourcing as an approach which is intended to control inventory. The study discovered that automated inventory control system is an effective system used to count inventories and to record withdrawals and balances in organization inventory management system.

2.3.4 Procurement Audit practices

According to Thumbi and Mutiso (2018), audit activity is to deal with PP processes and implementation of PP Contracts. El-Gayed, (2013), discussed that PP comprise of a large part of items and gross public expenses in many nations. He further stated that PP is key in effective delivery of services as well as good governance. The study further discovered that privatization progress, faster development in technology, public service delivery outsourcing and much attention given to management in public organizations have mostly add to increased complexity of Public Procurement functions. Anderson, Jones and Kovacic (2018), discussed in the study that Procurement Audit functions in public institution is to improve competency among the participants in carrying out procurement audit covering; adherence to legal system, context analysis of organizational, systems & procedures for; separation of activities, procurement plan and approval; assessment of risk in the procurement processes; execution of procurement audit; value for money achievement in PP operations.

According to Loft, Humphrey & Turley (2006) audit serves are important economic and plays key part by considering and strengthening accountability, trust and confidentiality on expenditures by lowering the misunderstanding between the government and its citizen on value for money achievement. Schelker (2008) pointed out that procurement audit serves are meant to increase transparency and eliminate procurement malpractices such as, fraud, corruption, wastages and further make vital recommendations on the same. Similarly, Badolato, Donelson & Ege (2014) argues that it is not enough to have accounting / financial expert as a member of accounts in constraining EM, but both experts in financial matters and qualified audit experts.

Jans and Hosseinpour (2019), argue that procurement auditing provides system control and checks on the procedural processes, the reliability and accuracy of the financial management data are assessed, checking the adherence and compliance with other regulatory framework, efficiency and economy of management of public resources; supporting good governance. Use of weak and poor audit exercise has a high risk of

accommodating inefficient practices in the system since they may not be discovered and reported for action. The risks of PP processes not realizing value for money is due to weak audit exercise which includes, Wastages in the system, non-adherence to procurement due diligence. Mapesa & Kibua, (2006) stated that PP audits is key on realizing value for money and productivity in PEs and government on ensuring accountability, transparency, eliminating malpractices, and enhancing procurement performance.

Bedasso and Asfaw (2020), discussed that Procurement Auditing function has basic objective of assuring specified and establish a criterion in line with PP that are complied with. The objective is to see that practices are carried out in a more profitable and functioning manner in accordance with the regulatory system (Office of the Auditor General-Nepal, 2005). According to Hart, Northmore & Gerhardt (2009) the primary purpose for carrying PP audit, is to ensure productivity to meet standards within defined parameters. PP audit process is carried out in the following order; Audit preparation, including procurement audit plan and the procurement audit program; audit implementation/execution (field work); audit result reporting; and monitoring follow up of the audit results.

2.3.5 Monitoring and Evaluation

Meredith and Mantel (2012) stated that monitoring is continuous activity to the completion of the project. Monitoring process to be designed as important section of organization system. According to Brown and Hyer (2010) monitoring process is tracing of the system from a checklist to a complex system approach of the original plan. They argued further that as part of the planning process, the project team should agree on a clear approach for monitoring KPIs during the project period. According to Shapiro (2011), monitoring is continuous evaluation and assessment of project level of implementation about the design schedules on inputs, infrastructure, and services by project beneficiaries. The study further observed that monitoring is periodic on performance, efficiency, and impact on the expected objectives of the project. Dobrea *et*

al., (2010) states that monitoring is a core tool to enhance project performance quality considering short and medium run management of projects for sustainability and durability. The PPRA as mandated by the PPAD act 2015 to oversight, regulate, monitor and review the procurement procedural activities in the public institutional system as revealed in the PPOA annual report 2014/2015 findings from the activities of the authority, the compliance level by PEs can be concluded that, PEs' in their adherence to the procurement law and regulations has remained a challenge. The report recommends that there is a need therefore to strengthen the compliance monitoring, assessment, target capacity building & enforcement initiative as part increasing the compliance level by the procuring entities (PPOA, 2015).

2.3.6 Implementation level Public Procurement Regulations

According to Njeru *et al.,* (2014) stated that it is required that PEs establish stable system in support the PP regulations implementation. He argued that Procurement regulation system has a clear road map to adhere to the acquisition processes. These took into consideration of internal organization of PEs in terms of adherence to the regulations, structure of the organization of the responsibilities of the different procurement committees, procurement planning, and management of record for procurement transactions.

Ombuki *et al.,* (2014) viewed that the procurement unit's accounting officers directly report to the CEO of the public entity. On the other side of the coin, the in-charge of the procuring unit is laid out in the regulation as to who is the in-charge of the procuring unit and that he/she may report to the accounting officer but they are replaced hierarchically on the lowest level of the structure of the organization, hence making no effect (Ogachi, 2014). The structural process has created several bottlenecks in many public entities as regard to whether procurement is part of finance department or it is a section of a department reporting to the head of finance.

Further challenges still, is that procurement is viewed as operational in several institutions such that the accounting officer in the procurement still cannot sit in the senior management meetings where major decisions are made that relates to the institution (Ogachi, 2014). According to Mugo (2013), firms that procurement plan developed in the procurement entities as an annual budget preparation and is necessary as it informs cash flow preparations. He further pointed out that the process is appropriate for controlling and preventing malpractices in procurement. However, the government PEs still faced with serious challenges of poor budgeting and linkages (Ambe & Badenhorst, 2011). Ambe and Badenhorst (2012) stated that Procurement officials should be able to link the institutional needs identified into the plan and included into the budget. They stated further that procurement staff involved in the acquisition process are required to familiarize themselves with procurement regulatory framework. Similarly, Rossi (2010) argues that compliance with the regulatory system is an indication of improved efficiency and effectiveness in the process.

2.4 Empirical Review

Empirical literature review presents studies have been conducted which revolves around each study variable as postulated from the theories and conceptualized based on own rationale. The section is structured along the variables to allow for proper and strategic alignment of the entire discussion on the variables. Effort made to improve the study with critical variables in trying to describe for better understanding the IV, a discussed and critique permitted limitation that characterize previous studies to be mitigated and revealed opportunities to be exploited in the current study. According to Sekaran and Bougie (2013), it is an in-depth careful review of journals, conference presentations, textbooks and published materials.

2.4.1 Procurement Staff Competency and Implementation level Public Procurement Regulation system

Ndumbi and Okello (2015), did a study on the training of staff on Compliance to PP system in Kenyan's parastatals. In the findings he concluded that procurement staff workforce was not adequately conversant with procurement Regulation system and due to this inadequacy which may invite serious penalties. Due to this process, procurement staff were not having qualified skills in matters of procurement practices. He further recommended that staff should be well acquainted with procurement regulations. The researcher revealed that continuous training of staff, the higher the level of procurement implementation and effective performance.

Sultan (2012) viewed that to experience economic growth and effective performance, optimizing the staff's achievement of organization is important. He pointed out that the development of technology and PEs adjustments have slowly contributed to some firms to realize that productivity of staff skills and knowledge is about investing in training and development. Ndumbi and Okello (2014) conducted a study to assess the effect of employee training on Compliance to PP system in Kengen Company in Kenya to understand on the situation in the energy. The study revealed most procurement staffs are not properly conversant with the PP rules. In addition, the staff competencies level not only affected performance of procurement department but also the whole ministry. The study revealed also that in as much as skilled staff being competent in their work in giving solutions, the challenge is the incompetent procurement staffs that are not productive in the ministry. Study discovered that stable procurement process may be realized through skilled and knowledgeable procurement staff who could procure items and services.

Barsemoi, Mwangangi and Asienyo (2014) conducted study to assess the factors influencing procurement performance in private sector focusing on procurement practices in Henkel Chemicals (E.A) in Kenya. Their study ascertained a good correlation of 70% between skilled staff and procurement processes. This correlation

indicates employees' skills and competence's ability impact positively on procurement productivity of Henkel Chemicals. This means improvement of staff competence in a procurement function, Increases procurement productivity that have a positive effect the organization's service delivery. According to KISM (2014) stated that the procurement staff in many PEs suffer from lack of information about procurement regulatory frame-work.

2.4.2 Supplier Relationship Management and Implementation level Public Procurement Regulations system

Al-Abdallah and Aynman (2014) conducted a study on SRM impact on competitive performance of manufacturing firms in four countries, Japan, Korea, USA, and Italy. They revealed that buying firms improved the performance through relationship management with suppliers. The study findings showed that companies cannot only depend on the inner system to achieve higher productivity. Kepher and Ismael (2015) carried out research on the role of Supplier Management on Procurement Performance in Manufacturing Sector in Kenya. They recommended that EAB should review its buyer supplier integration to improve procurement performance. They further stated that EAB should improve its Supplier Training in promoting information sharing and supporting its ERP systems.

EABL should maintain or if possible, improve its Supplier collaboration in regards to forecasting, flexibility and having a contingency management system. The study further recommends that EABL should utilize procurement practices to strengthen it quality control. Nyamasege and Biraori (2015) researched on effect of SRM on effective of SCM in public sector. They revealed that to manage supplier relationship the ministry should insist on centralized use of items. Also, the PEs to develop supplier base activities such as delivery schedules, complaints, quality management processes. Procurement officers should enhance communication standards with its suppliers. They further recommended that the interaction should provide suppliers on how information and flows provided.

Tangus, Oyugi, Rambo and Rono (2015), researched on impact of SRM on performance of manufacturing firms in Kisumu County. Findings were the need for organization to establish supplier development programs to encourage firms to be interested in programs that enhance productivity of the supplier, hence higher performance of the organization are realized. Performance of firms may be improved through supplier development engagement activities. He further viewed that firms should manage strategically supplier base on basis of value of spending on items being procured. This enhances firms to be able to categorize the suppliers according to every supplier's importance. He recommended that information sharing increase productivity the firms. Therefore, production organization to share information to improve the performance.

Kitheka and Mulwa (2013), argued in the study on effect of supplier quality management on organization performance Kakamega County. They indicated that prier noticing of errors should be improved through pre-dispatch inspections so that discouragements are reduced at the customers. The top management in the supermarkets and supplier organizations should be part of the supplier quality management to eliminate frustrations in the process. According to Wachira (2013) ascertained that trust, communication, strategic supplier partnership as key supplier relationship elements in procurement productivity. This was scored by Kamau (2013) who in his finding concluded that trust, communication, commitment, cooperation to be key elements in achieving relationship objectives.

2.4.3 Inventory Management and Implementation level Public Procurement Regulations system

According to Elsayed and Waliba (2016), they examined the relationships between inventory management and performance of organizational. Ogbo and Ukpere (2014) viewed how organizational performance impact upon establishing effective inventory management control. John, Etim and Ime (2015), discussed influence of practices used to manage inventory on operational performance of firms specializing on flour milling in Nigeria. The interest was to establish if the application of several inventory management

strategies would affect capacity utilization. Findings were that, even though production firms being keen on management of inventory strategies, the medium production firms rely on strategies from the scientific models. They established the choice of strategic inventory management was based on demand of customers, industry practices, and production capacity. They revealed that application of inventory management approaches tends to increase capacity utilization efficiency.

Kwadwo (2015) analyzed how inventory management efficiency impacted of efficient the firm's profitability. From the analysis, he concluded that management of inventory significantly influences profitability of the organization. According to Mugarura (2013) he discussed the impact of management of inventory on performance of organizations in Uganda. In his conclusion, inventory management and company performance have a positive relationship between them. Mwangi and Nyambura (2015) discussed the role inventory management plays in the performance of companies engaged in food processing. In his submission, he argued using the descriptive design of research and multiple regression analysis, they identified production maintenance, cost control, and record reduced loss, and continuous supply as the basic elements of inventory management to have an impact in the performance of the food processing companies.

Kamau and Kagiri (2015) analyzed the influence of practices used in inventory management at Safaricom Kenya Ltd on its competitiveness. From the study, they concluded that inventory management, inventory shrinkage and inventory turnover were significantly variables of competitiveness in Safaricom Ltd. Wauna and Obwogi (2015) researched on effect of procedures of inventory management used in Kengen on the performance of the company. It revealed the classification of inventory as fast moving, slow moving and non-moving and the classification of inventory as importance. From the discussion, materials were stored according to their groups, and using the FIFO system. They assert that storage, coding and inspection were significant variables that affected the performance of the organization.

2.4.4 Procurement Audit practices and Implementation level Public Procurement Regulations system

Madawaki and Amran (2013) discussed on the need for audit committees and the effect on financial reporting in Nigerian companies. They analyzed the relationship between audit committees with enhancing financial reporting quality of companies in Naigeria. The results showed that there is are positive contribution of audit committees in enhancing quality of financial reporting. Similarly, Hundal (2013) investigated independence, expertise and experience of audit committees. After looking into diverse literatures on audit committees and governance issues, they demonstrated the aspects of independence of audit committee, i.e. in formativeness, CEO's powers, and number of meetings, with alternative corporate governance mechanisms. A wide range of literature based on utility of financial and accounting experience of audit committee members was reviewed. The study included the various aspects of audit committee in India, based on regulations, corporate governance reforms and the limited number of empirical research findings. Lack of independence, expertise and experience of audit committees have rendered them less effective in performing their oversight functions. The study however did not link audit committee characteristics with quality of financial reporting.

The study carried by Wambui, (2015) observed that poor records management by internal audit can render the wider organization vulnerable to breaching the appropriate regulations. Internal audit services themselves are auditable and good record management demonstrates compliance with the relevant standards. This was agreed by Eregae, *et al.,* (2019) who argued that Accountability and transparency were found to be the catalyst binding resource allocation and public participation to propel service delivery.

Bashuna (2013) discussed in the study that issues of accountability procurement in the public institutions contributes to the economic development stability in the country expenditures and provide confidence in any public procurement system. Lack of transparency and accountable system in the system governance has led to great loss of

public resources that have gone waste hence poor service delivery. The public procurement systems has a vast resources that are channeled through for purposes of utilization can run into serious danger of increased corruption cases and misappropriation of public resources as always witnessed in several county governments in Kenya. However, Bashuna (2013) argued that when procurement activities are regulated, audited and oversighted the system can increase public confidence and high chances of identifying in-efficiencies in the procurement procedures are achieved with reduced corruption issues, hence increasing the system's efficiency to improve on service delivery to the ultimately citizens.

2.4.5 Monitoring and Evaluation

Tache (2011) carried a study on setting up a linked M & E system for Sustainable Investment projects in Romania. The aim was to build a general incorporated stream, including both venture checking framework and a project assessment framework for the speculation projects including monetary destinations and cross-cutting social and natural targets. Similarly, Paulinus and Iyenemi (2014) carried an investigation on M & E rustic water supply ventures and practical improvement in Nigeria and Ghana. They surveyed the manageability issues that have relationships with country group water arrangement and a portion of the difficulties experienced in Niger Delta district of Nigeria inside the setting of venture benefits sustenance. They discovered non-appearance of supportability in the momentum approach and suggested that if a group-based hand pump worked country water supply projects are to be practical, the maintainability factors must be keenly looked into in its usage.

An examination by Prabhakar (2008) pointed that monitoring and Feedback was one of the components prompting project performance. Similarly, Papke-shields *et al.*, (2010) additionally noticed that the likelihood of accomplishing performance appeared to improve among different elements, by continually monitoring the process of the project. Meena *et al.*, (2014) viewed that supportive supervision infers that an individual or project can manage consistently the M&E forms such that the supervisor offers proposal

on methods for development. Supportive supervision is imperative since it guarantees the M&E procedure is run productively.

2.4.6 Implementation level of Public Procurement Regulation system

Kipkorir (2013) study established that despite the current PP legal system, achievement of key procurement objectives was still a dream. He viewed that the return of unspent funds to the ministry by the government firms to an estimate of Kshs.142.5 billion in 2010/2011 & Kshs. 105 billion in 2011/2012 FY respectively is an indication that government projects were not effectively implemented. Ivar, Paula and Erik (2011) conducted a survey study of over 7300 participating firms and in-depth interviews with 150 procurement employees on the patterns used. They sought to establish the cost of procurement and of the procedures among countries. In their finding, procurement costs and effectiveness vary across significantly in countries and that the procurement regulations support the objectives of PP policies. PP markets are very competitive and this promotes efficient purchasing outcomes.

A study by Amanyi and Ngugi (2013) reveals that procurement contributes about 10% to 40% of the GDP, however, issues are raised about government agencies spending on whether value for money has been achieved. The main problem in that study findings was that even though there have been reform initiated by the Public Procurement oversight authorities in Kenya from mid-1990s, the loss of billions of the tax payers' money through procurement irregularities by the government is still witnessed, with the Ministry of Water and Irrigation leading by 38% of the procurement malpractices reported cases in 2010/2011 and 33% in 2011/2012.

2.5 Critique of Existing Literature Relevant to the Study

Theoretical Literature and empirical literature indicate some of studies have been conducted in Western countries, Africa and Kenya. It is clearly shown that past empirical studies do not point out with specificity the management practices and level of

implementation of Public Procurement Regulations in County governments in Kenya. The implementation of Public Procurement Regulations Studies are common in developed countries such as Europe, American and Canada. This could be discussed by (Grandia, 2018; Spiller, 2009; Ancarani, Di-Mauro, Hartley and Tátrai, 2019). Thuo and Njeru (2014) studied the effect of Public Procurement reforms on service delivery; Gitari and Kabare (2014) assessed the extent of the preference and reservation regulations implementation; Ngeno, Namusonge and Nteere (2014) assessed the effect of discriminatory procurement practices on performance of PEs in Kenya.

Emmanuel (2013) analyzed in the Africa system of governance that training on application of best procurement practices could support PP regulatory implementation level in county governments. However, he failed to highlight the key procurement management practices that support implementation level of PP regulatory. Simpson and Power (2007) stated many African countries' institutional procurement managers are not trained on PP regulatory implementation level since most African countries have not embraced the devolved system of government, hence lack of PP regulatory implementation level in PP training curriculums. Emmanuel (2013) study however, did not give recommendations on ways the African countries governance systems should incorporate the implementation level of PP regulations in public procurement government organizations. This clearly demonstrates that implementation of public procurement regulations remains a major critical issue affecting implementation of public procurement regulations in devolved government.

Tanzi and Farè, (2009) study found out that in Canada, technology innovation in enhancing as major pillar played key role to allow organizations adopt sustainable procurement regulations. The study failed to clearly explain ways in which organizations should innovate the new technology for the success of the PP regulatory implementing level in PEs. George (2008) study reveals that, in Kenya a number of PEs failed to achieve effective procurement regulations due to lack of waste recycling technology and technology for utilizing renewable energy sources such as wind and solar energy.

However, he did not elaborate the technology type that could be adopted by the county government in implementing PP regulatory system.

2.6 Summary of Literature Reviewed

Several researchers have developed and also authored many theoretical models on the implementation of Public Procurement Regulations. These are accessible theoretical models that have demonstrated a framework which have been embraced and adopted by a number institutions for policy making and also facilitated decision making by the top managers in the institutions on matters related to public procurement in delivering services to the citizens while adhering to the Procurement regulations. The discussion in this study have explained theories and models related to the study and variables. The development of the study variable constructs have led to the formation of conceptual framework on which the study was anchored. Several empirical studies have been developed related to Procurement rules and a number of studies seemingly were done by scholars out of requests made by procurement related institutions or individual to come up with applied knowledge and others were authorized by the procurement regulatory bodies mandated to monitoring, oversight and regulate the implementation and compliance of PPAD act 2015and the regulations. The theoretical and empirical review view point, it is clearly demonstrated that the Public Procurement Regulations is a ground for scholars to extend their further search to address procurement bottlenecks and add to the existing knowledge. The theoretical models may be applied to public or private institutions, industries, agencies and county governments. Empirical reviews studies are important in testing the theoretical models and giving adequate solutions to the current PP regulations implementations' problems and to develop a body of useable knowledge for decision making.

2.7 Research Gaps

The empirical review showed studies carried out on Public Procurement regulatory compliance. However, there were gaps because of lack of comprehensive studies

addressing management practices and level of implementation of Public Procurement regulations in County governments in Kenya. Studies carried out by (Eyaa & Oluka, 2011; Osei-Tutu, Mensa and Ameyaw, 2011); (Mpeera Ntayi, *et al.*, 2012); (Onyinkwa, 2014; Mwangi and Kariuki, 2013; Gesuka and Namusonge, 2013); Sang & Mugambi, (2014) looking into factors influencing non-compliance to Public Procurement regulations did not explain PP regulations implementation level in County Governments in Kenya.

Studies by Raine, Powell, Jackson and Thomas (2007), and Brulhart (2009) draw much emphasis on effective procurement in developed nations but failed to address the management practices and implementation of Public Procurement regulations in developing nations. Studies by Matthew and Patrick (2013) and Edward (2009) did explain the status of effective procurement practices in Kenya, but failed to give real solutions on how public institutions in Kenya should embrace Public Procurement regulations implementation. Talluri (2008) in the study discovered that many government agencies in the United, India and Malaysia lack effective procurement policies for supporting effective implementation of procurement regulations system. A study by Sobczak (2008) found that many Japanese firms that employ just in time inventory management technique have succeeded in embracing effective and efficient procurement practices. Moses (2009) study reveals that application of poor sourcing strategies is a key hindrance to implementation of public procurement regulations in many government procuring entities in Kenya.

In addition, the empirical literature indicates that, Gitari and Kabare (2014) discussed the factors affecting SMEs in getting procurement opportunities. Muraguri (2014) discussed preference and reservation scheme implementation. Mugo (2013), Migosi, Ombuki and Evusa (2014) investigated procurement regulatory compliance in PEs. Thuo and Njeru, (2014) looked into PP reforms on service delivery; Ogot, Mulinge and Muriuki (2010) assessed the regulations on profit-oriented corporations in Kenya. Munagi and Muturi (2014) assessed the procurement regulations on efficiency. Karjalainen, Katariina and Erick (2009) stated that the fact that few study discussions

non-compliance in procurement irrespective of the fact that PP important in achieving economic, social & objectives and also as an area that is vulnerable to bureaucracies and malpractices and corruption. These studies have not specifically addressed the key challenges of effective management practices and procurement implementation hence developing a major knowledge gap on management practices and to implement public procurement regulations in county governments also considering procurement practices and in County governments in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter discussed the research methodology and the approaches used in the study. The section described the research philosophy, research design, target population, sample frame, sample size determination & technique, pilot testing, validity & reliability, data collected procedure, presentation and methods of analysis. The statistical measurement model used in the analysis and tests for hypotheses were also described in this chapter.

3.2 Research Design

Research design is described by Green and Tull (2009) as the specification of methods and procedural processes for acquiring the needed information. A research design is the overall operational pattern or framework of the project that stipulates what information is to be collected from which source by what procedures. The research design is important because it prepares proper framework within which research work will be carried. It describes the specific objectives of the research and how they are addressed. The study applied a descriptive survey designed to determine Public Procurement Regulations implementation level in county governments in Kenya. The descriptive design was considered due to the fact that the study gathered both quantitative and qualitative data that described the characteristics of procurement management practices and level of implementation of public procurement regulation system in county governments in Kenya. According to Sekeran (2003), descriptive design is used to obtain information concerning the current status of the phenomena to describe "what exists" with respect to variables or conditions in a situation.

According to Kothari & Garg (2014) descriptive study achieve information about the situation of subject being investigated and possibly make conclusion from discovered

facts. Descriptive survey explains the elements of subjects, opinions, attitudes, preferences and perceptions of persons of interest to the researcher. Descriptive survey also receives information from a representative of the population and from the sample the findings are representatives of the population as a whole by the researcher. Kothari and Garg (2014) observed that a descriptive survey enables a researcher to collect information, summarize, present and interpret for the purposes of the conclusions made. Mugenda and Mugenda, (2003) noted that surveys are useful in explaining or exploring the existing status of two or more variables at a given point in time. Kothari (2003) describes descriptive research as including surveys and facts finding enquiries adding that the major purpose of descriptive is description of the state of affairs as it exists. This study sought to establish the relationship between procurement practices and level of implementation of procurement regulations in the devolved system of governments in Kenya. The data was collected from the county governments in Kenya to determine linkages between study variables at the time of the study.

3.2.1 Research Philosophy

The study adopted the positivist philosophical orientation. The philosophy is similar to the development and nature of knowledge that has key assumptions on the way in which the world is viewed by researchers (Saunder, Lewis & Thornhil, 2009). Two philosophical assumptions are there about knowledge and actual. The two philosophical assumptions are positivism or deduction research and phenomenology or induction research. Positivism is related with the idea of objectivism. In this approach, views are given by scientists to evaluate social world with the support of objectivity in place of subjectivity (Cooper & Schindler, 2006).

Rojjanaprapayon (2015), states that positivists' objective is to test a theory or description through observation in order to predict and control forces that surround us. They put higher priority on linkages among the variables. Positivists involves; observations facts, developing of descriptions for the subject with inductive processes. According to Saunders and Bezzina, (2015), positivism philosophy support researchers to collect key

information similar with the research issue through general sources. The author further observes that under this philosophy, the researcher has a key role of objective analyst in assessing the collected data in order to achieve the research objectives. Many philosophers believe that positivism is the foundation and rationale for most management research (Johson and Duberley, 2000).

This study was guided by the positivist paradigm where scientific processes will be followed in hypothesizing fundamental laws then deducing the observations so as to determine the truth or falsify the said hypothesis about the relationships that exists in management practices and level of implementation of public procurement regulations in the devolved system of Governments in Kenya. The study therefore, verified the propositions through empirical tests by operationalizing variables in the conceptual framework to allow for measurement. The principle of positivism was used since the study adopted the existing theory to develop hypotheses and have them tested by using a quantitative survey, and the use of statistical analysis.

3.3 Population

Population is the entire set of units for which the study data are to be used to make inferences (Fraenkel, Wallen, & Hyun, 2015). Target populations are members of real set of people the researcher would want to generalize the results from. The Devolved system of governments in Kenya are procuring entities that are state owned public institutions formed under article six of the constitution of Kenya 2010. The interest by the study on the forty-seven (47) devolved governments as the population, was driven by the fact that county governments are public government institutions in implementing public procurement procedures. Further, the County governments have been audited by Public Procurement Regulatory Authority and other government agencies in the past and reports indicated that they were culpable for non-compliance and implementation of public procurement regulatory system as required by the Act.

The County governments were of interest to the study since they play a major role in government's effort to deliver service to the citizens and hence spend huge amounts of funds in procurement functions. This was confirmed by the Commission of Revenue Allocation report 2018/2019 on revenues allocated to counties to be about Ksh. 314 billion for development as demanded by the Constitution of Kenya 2010. The study used the key informants from directorates of procurement in the forty-seven (47) Counties in Kenya who are directly involved with management practices, supervision and implementation of procurement procedures at the County governments. This was also to improve on the reliability of the information from the respondents and reduction on data redundancies. As such, the unit of analysis was the devolved governments in Kenya and the unit of observation involved the procurement directors from the counties.

3.4 Sampling Technique and Sample size

The study employed a census which refers to the quantitative research method, in which all the members of the population are enumerated. Two stage sampling was used to obtain a sample size. A sampling method called two-stage sampling divides the population into two phases. A census of the county governments was completed in the first phase. A sample of procurement directors was subsequently chosen from the 47 counties in the second round using purposive sampling. When it is neither practical nor possible to sample directly from the population of interest, two-stage sampling is frequently used. For instance, it might be more effective to sample neighborhoods or census tracts before sampling households from inside them when researching a population of households. Due to the smaller population that must be sampled in the second stage, the two-stage sampling technique enables a more effective and economical sampling strategy. As the sample chosen in the first step can be chosen to be representative of various subgroups within the population, it also enables the researcher to take into consideration the population's heterogeneity.

A census greatly reduces sampling error and provides data on all the individuals in the population. Virtually the entire population would have to be sampled in small

populations to achieve a desirable level of precision. The accessible sample population of this study was forty (47) county governments in Kenya and the key informers in the forty-seven county governments were contacted. Using a specified criterion or set of criteria, the researcher chooses units (such as people, families, organizations, etc.) for inclusion in the sample using the non-probability sampling technique known as "purposeful sampling." In order to ensure that the sample is representative of the population of interest, the units are carefully chosen. When the community of interest is small, heterogeneous, or challenging to reach, as well as when the researcher is interested in researching a specific subset of the population, purposeful sampling is frequently used. Purposive sampling has the benefit of allowing the researcher to obtain information from a sample that is typical of the population of interest, even if the sample is small or not drawn at random.

3.5 Data Collection Procedures

Kothari & Garg (2014) describes research instruments as tools for collecting data and there are several research tools that can be used depending on the nature of the study, data to be acquired and population targeted. The study used questionnaire and interview schedules to collect primary data. Questionnaire gathers data and allows measurement for and against a particular viewpoint. Questionnaire provides a standard tool for data collection to attain objectives in a survey (Orodho, 2010). The application of structured questions were used to collect data. The same questionnaires were piloted and tested to ascertain the extent to which the instrument could collect data and improve validity and reliability.

3.6 Pilot Test

According to Kothari and Grag (2014) Pre-test encourages the researcher to modify and remove ambiguous questions from data collection tools. This enhanced the content validity and reliability of the questionnaire in the study. According to Ismail, Kinchin and Edwards (2017) a pilot study refers to a small-scale study carried out prior to the

main study to establish the appropriateness of research questions, the best methods to be used and an estimate of time needed. Mugenda (2013) recommended that a pilot test sample should be 1% to 10% based on the sample size. A pilot study refers to a small-scale study carried out prior to the main study to establish the appropriateness of research questions, the best methods to be used and an estimate of time needed (Ismail, Kinchin & Edwards, 2017).

In view of this, the study did a pilot test in three (3) county governments in Kenya, Kisii County, Homa-Bay County and Nyamira County which were not included in the main study. The procurement officers involved in the pilot study were directors and deputy directors of supply chain and principle supply chain county assembly. The pilot test results were used to correct and adjust the questionnaire before the actual data collection was done. The three counties used for piloting were not used in the final research analysis. The pilot test was sufficient and gave realistic results for reliability and validity of the tools for research.

3.6.1 Reliability Analysis

The reliability of an instrument is a measure of how dependable the results of a test are (Creswell, 2014). Split half was used to test reliability by dividing the questionnaires into two equal halves, in terms of even and odd numbers and the collected data was analysed with each of the set. Each half was autonomously scored off the other with the two halves harmonized on content as well as difficulty. Then Cronbach's co-efficient Alpha approach was used to measure internal consistency of the research instruments because it is a scale of measurement which is appropriate in measuring internal consistency in descriptive survey.

Reliability co-efficient of 0.7 from the responses for procurement directors and deputy procurement directors' schedule respectively was deemed acceptable. If the test is consistent, then the scores on the two halves possess a high positive link, that is, a high correlation coefficient (Orodho, 2014). The split-half method is favoured in this study

over the other methods such as the test re-tests technique since it takes care of the variations in time and also conditions. The Statistical Package for Social Sciences (SPSS) version 25.0 was applied to estimate the reliability coefficient.

3.6.2 Validity Test

Bryman (2012) describe validity as the degree to which results obtained from the analysis of the data actually represent the phenomenon. Validity is the extent to which an instrument measure what it is supposed to measure. According to Yin (2013) Validity is about the degree to which results obtained from the analysis of the data represent the subject being studied. The content of validity of the data collection instruments was determined by performing confirmatory factor analysis (CFA) where various factor loads were determined using both PCA and CFA analysis as highlighted in chapter four. Besides that, construct validity was also determined through discussing the research instrument with the supervisors and research experts in the university. Suggestions, comments, valuable components and corrections given by the supervisors and research experts assisted in the validation of the instruments.

3.7 Data Analysis and Presentation

According to Orodho (2010) describes data analysis as the representation of data gathered during a study. The study data were obtained both from primary and secondary sources and the primary was the main data source obtained through questionnaire. The questionnaire collected quantitative data obtained from the structured questions. The data was cleaned and coded then entered into SPSS to be analyzed. The journals, books, and government archives formed the secondary data sources which were all reviewed in the literature. SPSS software was considered for use due to its ability to create graphical presentations of questions, data from reporting presentation and publishing. The quantitative data information obtained from questionnaire was analyzed through descriptive and inferential statistics (Suen & Ary, 2014). The descriptive statistics include the use of measurement of central tendency which included mean, standard

deviations, Variances, maximum and minimum values. The descriptive statistics purpose were to provide simple summaries about the measures in the study (Sathianandan, Safeena & Rahman, 2017). The analyzed data was presented in the form of frequency distribution tables, pie charts. Discussions and presentations of the analyzed data were done in tables of frequency distribution, percentages, bar graphs and pie-charts. The study also used ANOVA to analyze the degree of relationship between the variables in the study.

3.8 Statistical Modeling

The strength of the relationship between the independent variables (denoted as *X*) and dependent variable (denoted by *Y*) was determined by the use of Statistical Modeling. The reliability and the strength of the Statistical Modeling was established using the coefficient of determination (R^2) and F-test. The R^2 used was to test the proportion of the variance in the dependent variable which can be explained by the independent variable and F-test did measurement of the suitability of the model to confirm or reject the research hypotheses (Mertler & Reinhart, 2016). The *R2* value of 0% indicates that the model did explain no variability of the response data around its mean (Zikmund, Babin, Carr, & Graffin, 2013).

ANOVA was used in the study to determine whether the regression model was reliable or not. In the same context, the study compared the F-value with the overall significance level to determine if the hypotheses are significant or not (Kim, 2017). The conducting of Regression test using a multistage analysis involved running first the R2 and F-test without the moderator, and the second stage involved the running the test with the moderator. The main purpose was to compare the changes in R^2 value and F-test value to determine the effect of the moderator in the relationship of the independent variables and dependent variable. An increase in the value of R^2 and F value was interpreted to mean that the moderator is statistically significant and vice versa.

The direction, strength and significance in the relationship between each variable and the dependent variable was determined by use of the *beta*, *t* and *P* values. The beta coefficient values indicated the strength of the individual variable in influencing the dependent variable. The direction of the relationship was indicated by the *–ve* or *+ve* sign before the beta value. A positive beta value showed a positive relationship between the variable and vice versa. The study further carried a multistage analysis to establish the effect of the moderator on the individual independent variables. The study compared the values of beta, *t* and *P* when the test are run without a moderator and when with a moderator. The presence of a positive significant change in the values concluded that the moderator has a significant effect on the relationship between the individual variables and the dependent variable.

Multiple linear regression model was used in the study also known as the ordinary least square (OLS) model and moderated multiple regression models showing the relationships of individual variable with the dependent variable (Wang, Gunasekaran, Ngai & Papadopoulos, 2016; Liu, Prajogo & Oke, 2016). A multiple linear regression is a model with a statistical multivariate technique which is used to measure the model parameters and determine the effect of each independent variable on the dependent variable (Mertler & Reinhart, 2016). The multiple regression model took the form of an equation that contain a coefficient βi for individual predictor which indicated each contribution to every predictor to the model. The coefficient βi indicated the relationship between the dependent variable and each predictor.

A positive value was an indication of a positive relationship between the predictors and the dependent variable whereas a negative coefficient represent a negative relationship (Kim, 2017). The multiple regression was modelled to show the relationship between the dependent variable (level of implementation of public procurement regulations) and independent variables (procurement staff competency, supplier relationship management, inventory management and procurement audit practices) without the moderator as well as their combination effects on dependent variable as shown by the regression model. The regression model used to show the levels of influence each of the

independent variables will have on the implementation level of Public Procurement regulations in devolved system of governments in Kenya was modeled as follows.

$$\hat{Y}_j = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where; $\hat{Y}$ is estimated Implementation level of public procurement regulations

β_0 is the constant

$\beta_1 - \beta_4$ are the coefficient of independent variables

X_1 - X_4 are Procurement Staff competency, Supplier relationship management, Inventory management, Procurement audit practices.

ε Is the error term

The second model showed the moderation effect of monitoring and evaluation on the relationship between individual independent variable and dependent variable. This was undertaken through analyzing the relationship effect of the Procurement practices with the moderator as shown below.

$$\hat{Y}_j = \beta_0 + \beta_6 X_1 Z + \beta_7 X_2 Z + \beta_8 X_3 Z + \beta_9 X_4 Z + \varepsilon_i$$

Where:

Y_j- The dependent variable (Implementation level of Public Procurement Regulation)

β_0- Population's regression constant

β_i (i = 1, 2…9) are the population's regression

n coefficients for each independent variable

X_i (i = 1, 2…9) – The potential predictors

X_{Zi}- Moderating variable

ε -is the Model error variable.

Implementation level of Public Procurement Regulations = $\beta 0 + \beta_1$ *Procurement Staff competency + β_2 *Supplier relationship management + β_3 *Inventory management + β_4 *Procurement audit practices + β_5 * monitoring and evaluation + β_6 *Procurement Staff competency* monitoring and evaluation + β_7 **Supplier relationship management *monitoring and evaluation + β_8 *Inventory management *monitoring and evaluation + β_9 *Procurement Audit practices *monitoring and evaluation + Model error. This relationship was assumed to hold for all observations (*i= 1, 2….9*); Based on the five hypothesis generated the following model apply for each.

3.9 Diagnostic Tests

The collected data was subjected to a diagnostic test to establish if the assumptions of the study were adhered to and that the probability of type 1 and type 2 errors were minimized (Harrell, 2015). The tests included, Normality Tests, Correlation Analysis test, Multi-Collinearity Test, Autocorrelation Test, Heteroscedasticity Test, Linearity Test and Hypothesis testing on the Dependent Variable. In any case the study found out some assumptions were not observed, the researcher dropped some variables that did not conform to the statistical assumptions or adjusted the variables to suit study. On the contrary, whether the statistical assumptions were observed by the data, then the study would conclude that the data was statistically good for analysis and inference.

3.9.1 Normality Test on the Dependent Variable

Normality test is a statistical tests assumption aimed at determining if the data is molded-well by a normal distribution using Shapiro-Wilk test and Kolmogorov Tests (Adhikari, 2014). A normality test at 95% confidence interval for mean was conducted in the study, where the p-value was compared to determine whether to reject the null

hypothesis which means data was either normally distributed (<0.05) or (>0.05) (Corder & Foreman, 2014; Ososro, Muturi & Ngugi, 2016 and Farah, 2015).

3.9.2 Correlation Analysis

The analysis of the Correlations were to establish the relationship degree between the variables using Pearson product- moment Correlation hence ranked to determine the independent variables (Procurement staff competency, Supplier Relationship management, inventory management and Procurement Audit practices that has strong influence on implementation level of public procurement regulation (Cohen, West & Aiken, 2013). The Correlation coefficient results were expressed ranging from -1.0 to +1.0, where, -1 was strong negative relationship and +1 was strong positive relationship (Prion & Haerling, 2014). The correlation strength measurement is based on the Pearson correlation scale where, the correlation coefficient positive and close to one, the variables said to be strongly and positively correlated and vice versa. The correlations done using a 2-tailed test, setting the significant value at 0.05. Values smaller than the significance value (0.05) were to be said as significant, while those values greater than (0.05) deemed to be insignificant.

3.9.3 Multi-Collinearity Test

Multicollinearity in regression, is a statistical assumption tests done in a multiple regression model to determine whether the variables are highly correlated i.e. it can be linearly predicted from the others with a high degree of accuracy (Cohen, Cohen, West & Aiken, 2013). In the study, multicollinearity was determined using the variance inflation factors (VIF) method and tolerance values. The VIF value of between 1 and 10, which shows that there is no multicollinearity issues in the data while VIF value greater than 10 or less than 1, this indicates the presence of multicollinearity issues (Ray-Mukherjee *et al.*, 2014).

3.9.4 Autocorrelation Test

Auto-correlation is described as correlation between members of a series of observations ordered in time or space (Gujarat, 2022). Autocorrelation is also called serial correlation is the measure of the extent to which the data points in a particular data set are related and hence causes each other. A Durbin-Watson test was used to detect the presence of autocorrelation between variables. According to Gujarat (2022), the Durbin-Watson statistic ranges in the values from 0 to 4. A value near 2 indicates non-autocorrelation; a value closer to 0 indicates positive correlation while a value closer to 4 indicates negative correlation and this was tested.

3.9.5 Heteroscedasticity Test

Heteroscedasticity test determined the circumstance in which the variability of variable is the same across the range of values of a second variable that predict it (Asma'Mustafa & Ismail, 2016). The achievement was through the use of homogeneity tests when the level of significance associated with Levene statistic is more than 0.05 at 5% significance level, then the variances are homogenous (Paulraj & Blome, 2017; Chebolu-Subramanian & Gaukler, 2014).

3.9.6 Linearity Test

This test determines if there is a significant relationship between dependent variable and the individual independent variables and also whether the relationship is linear or not (Hahs-Vaughn, 2016). Durbin –Watson statistic study was adopted and as was applied by Rayner, Best, Brockhoff and Rayner (2016). The significant deviation was adopted of greater than 0.05 to imply that the relationship between the independent variable is linearly dependent and vice versa (Draper & Smith, 2014).

3.9.7 Test of Hypotheses

According to (Gujarat, 2022) a statistical hypotheses is defined as an assumption about a population parameter. This assumption may be true or not. Greene (2003) argues that hypotheses' testing refers to the formal procedures used by statisticians and researchers to accept or reject statistical hypotheses. Hypotheses testing was done using the *p*-value for the research. A small *p*-value (typically <0.05) will indicate strong evidence against the null hypotheses, so the null hypotheses will be rejected and when and if we have a large *p*-value (>0.05), it indicates weak evidence against the null hypotheses, so alternative hypotheses will be accepted. For this research, if the *p*-value >0.05, then it will be considered positively significant. The output are clearly stated in the Table 3.1 at the Appendices II Statistical Tests of Hypotheses.

Table 3.1: Operationalization of the Research Variables

Variables of the study.	Indicators	Data collection instruments	Measurement Scale
Procurement Staff Competency	• Effective communication skills • Staff capacity building • Work relationship management • Knowledge and skills	Questionnaire Interview schedule Observation checklist Document analysis	Nominal Ordinal Interval
Supplier Relationship Management	• Supplier development • Supplier payment • Supplier Appraisal • Supplier value addition/creation	Questionnaire Interview schedule Observation checklist Document analysis	Nominal Ordinal Interval
Inventory management	• Just-in-time principal • Stock tacking • Asset register • Store management practice	Questionnaire Interview schedule Observation checklist Document analysis	Nominal Ordinal Interval
Procurement audit Practices	• Procurement planning • Tendering processes • Procurement committee setup • Procurement compliance level	Questionnaire Interview schedule Observation checklist Document analysis	Nominal ordinal Interval
Moderating Variable :			
Monitoring & evaluation	• Evaluation benefits • Routine monitoring & evaluation. • Monitoring schedule • Evaluation work plan	Interview schedule Observation checklist, Document analysis, Questionnaire	Nominal Ordinal Interval
Dependent variable.			
Implementation level of public procurement regulations.	• Top management support • IFMIS implementation level • Affirmative action implementation • Procurement procedures	Questionnaire Interview schedule Document analysis.	Interval

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter begins with the analysis of data followed by a discussion of the research findings. The findings for this study are results of the analysis of data collected from procurement officers in 47 counties. The results are presented to address the research goals and to answer the research questions. A detailed discussion of the results is presented coupled with a clear link between the evidence obtained and existing knowledge on public procurement. The analysis of quantitative data involved the use of SPSS version 25.0 program that facilitated the analysis of the descriptive and inferential statistics Graphs, tables, and figures were used in the presentation of the data and quantitative data methods were used.

4.2 Pilot Study Results

The study undertook a pilot test on sampled county governments in Kenya to test for reliability, validity and the practicability of the data instrument collection. A 6.38% of the of Counties were considered which translated to nine (9) procurement staff i.e. directors of supply chain and deputy directors of supply chain, and principal procurement officer county assemblies who took part in the pre-test exercise from the randomly selected three (3) county governments in Kenya; Kisii County, Homa-Bay County, Nyamira County. However, the sample piloted was not included in the actual entire study. Note three (3) procurement officers were selected from each of the piloted counties. The sample size for pilot was considered to be sufficient and capable of producing realistic projections for the reliability and validity of the research tools to be used as was suggested by (Srinivasan, Lohith, Srinivasan & Lohith, 2017)). Cronbach's Alpha was considered to test for the reliability of the instruments for data collection of the staff questionnaire.

4.2.1 Reliability and Validity of Research Instrument

The level to which the items or indicator variables under consideration measures the same thing or value under similar conditions consistently without biasness or error is referred to as reliability of the research instrument. In instances where the items under investigation or consideration yield similar results when applied more than ones indicates that the instrument is reliable. Besides that, validity is another concept which is described as a measure of what the researcher wants to measure. For instance, the research instrument is said to be invalid if it measures different concept than what it was intended to measure initially. Testing the validity and reliability of the research instrument is valid and necessary before using it to collect data. To test for reliability and validity tests, verification and I dimensionality verification is always taken into consideration. Roberts and Priest (2006), describes verification dimensionality as a concept in which observed variables used to measure every dimension, measures only one dimension. For this reason, reliability and Construct validity must be computed in order to ascertain I dimensionality.

Construct validity simply refer to an instance where observed variables are connected to some unobserved variables while dissociation of observed variables from other observed variables that are connected to other latent variables is referred to as discriminant validity. The construct validity indicates that the observed variables do not measure any latent variable other than what they are connected in the conceptual model. Constructing validity in most cases are measured using confirmatory factor analysis (CFA) which is basically the measurement equation model for structural equation model (SEM). To determine the goodness of fit for measurement equation model, the fit indices will be applied and for insufficient measurements equation model, the fit indices of the structural model will be low. Besides that, the standard value of each coefficient in the measurement model is known as factor loadings of the confirmatory factor analysis. Each factor load should be higher than 0.50. Otherwise, the fit indices of the general model will be low indicating that the model is not good.

In this study, the reliability of the instrument was tested using Cronbach's alpha constant which measures the internal consistency and average correlation among the indicators under consideration. Cronbach's value normally ranges between 0 and 1 according to Amirrudin, Nasution & Supahar (2021). The commonly acceptable value of alpha should be at least 0.70 as described by Mugenda and Mugenda (2003). Higher alpha coefficient values imply that there is consistency among items under consideration that measures the concept of interest. In this study, Cronbach constant test was carried out for every variable. And the finding were as follows:

For procurement staff competency there were eight items/indicator variables under scrutiny and from the finding, no item was expunged since the alpha coefficient recorded was 0.848 which was above 0.7. For Supplier relationship management, the alpha coefficient was 0.733 with no item removed out of ten items tested since the coefficient was above the threshold. The reliability test using Cronbach alpha based on Inventory management was also conducted and out of eight items alpha value of 0.472 value was recorded and after one item having been removed, the overall alpha coefficient recorded was 0.742 which was also above 0.7. Similarly, the Cronbach's alpha coefficient for procurement audit practices was carried out and out of seven indicator variables used to measure alpha coefficient a value of 0.600 was obtained which later came to be 0.706 after deleting the seventh item which was also above 0.7. Considering items forming Monitoring & Evaluation and Implementation level of public procurement regulations alpha values were found to be 0.909 and 0.809 respectively far much beyond 0.7 which is the threshold value. In conclusion, alpha test for all the items were found to be reliable for measurement because the reliability coefficient was found to be above the recommended threshold of 0.7. The findings are shown in the Table 4.1. In the Appendices III; Reliability and Validity of Research Instrument.

4.2.2 Factor Loadings Analysis

Factor analysis is mainly concerned about the internal-correlations among the items under investigations to ensure that there is consistent correlation among the items under

investigation as illustrated by Mugenda, (2003). Scholars like Blumberg, Cooper, and Schindler (2014), suggest that factor loadings which are above 0.5 are acceptable. Besides that, there are some researchers who indicates that 0.4 is the lowest level for item loading which is acceptable. To test for construct validity, highlight variability among observed variables and to also check for any correlated variables in order to reduce redundancy in data, it was necessary to carry out factor analysis as illustrated by Kang (2013). In this study, the use of factor analysis to reduce the number of indicators which do not explain the effect of various organization behaviors on Implementation level of Public Procurement Regulations. Kang (2013), and Tabachnick and Fidell (2007) described the factor loadings as follows: 0.32 (poor), 0.45 (fair), 0.55 (good), 0.63 (very good) or 0.71 (excellent).

4.2.3 Factor Loadings for Procurement Staff Competency

Procurement Staff Competency had 8 items and none of the items recorded factor loadings less than 0.50. The factor loadings of 8 items for procurement staff competency were ranging between 0.529 and 0.861. Because these values were above the threshold, the factors were therefore considered to be valid for the constructs represented. Table 4.1 present the finding of factor loadings for every item of procurement staff competency.

Table 4.1: Factor Loadings for Procurement Staff Competency

Procurement Staff Competency	**Factor Loadings**
Procurement staff level on effective communication skills.	.753
Procurement staff understanding on effective negotiation process.	.641
Procurement staff undergone capacity building.	.529
Procurement staff level of knowledge and skills gained.	.717
Procurement staff level of work relationship management.	.724
Procurement staff adoption level of new working policy systems.	.861
Procurement staff understanding on financial management related issues.	.668
Procurement staff level on contract management skills.	.622
Total	**.689**

4.2.4 Factor Loadings for Supplier Relationship Management

The study intended to measure the effect of Supplier Relationship Management by using 10 items. The finding suggests that: The organization's commitment level in supplier partnership/development had factor loading of 0.629, The level of information sharing between the buyer/supplier management relations had factor loading of 0.544, The organization's level of commitment on suppliers' payment had factor loading of 0.733, The organization's Commitment level in appraising its suppliers had factor loading of 0.716, The supplier's commitment level on value addition/creation on deliveries had factor loading of 0.625, The supplier's commitment level on quality of goods and services improvement had factor loading of 0.551, The Buyer/Supplier collaboration level in new product development had factor loading of 0.775, The organization Trust-based relationship with suppliers had factor loading of 0.637, Delivered goods rejected due to non-conformity to specifications had factor loading of 0.831 and lastly Supplier failure to honor the orders issued by the buyer had factor loading of 0.502. In conclusion, all the 10 items had factor loadings above 0.50 that is between 0.542 and 0.831. Therefore, all the items were found to be valid for the constructs they represented and could therefore, be used in the study. Table 4.2 shows the summery of factor loading for every item of Supplier Relationship Management.

Table 4.2: Factor Loadings for Supplier Relationship Management

Supplier Relationship Management	Factor Loadings
The organization's commitment level in supplier partnership/development.	.629
The level of information sharing between the buyer/supplier management relations?	.544
The organization's level of commitment on suppliers' payment.	.733
The organization's Commitment level in appraising its suppliers.	.716
The supplier's commitment level on value addition/creation on deliveries.	.625
The supplier's commitment level on quality of goods and services improvement?	.551
The Buyer/Supplier collaboration level in new product development.	.775
The organization Trust-based relationship with suppliers	.637
Delivered goods rejected due to non-conformity to specifications?	.831
Supplier failure to honor the orders issued by the buyer?	.542
Total	**658**

4.2.5 Factor Loadings for Inventory Management

The validity of inventory management was also investigated using an instrument comprising 8 items and the result were published. In this case no item was deleted. Factor loadings values recorded were between 0.532 and 0.791 as shown in Table 4.3. To highlight some of the finding; Inventory purchase failure to meet Just-In-Time principal had factor loading of 0.576, commitment level in eliminating excess products on cost reduction had factor loading of 0.558, Commitment level of ensuring accuracy of inventory systems had factor loading of 0.791, firm's Commitment updated asset register had factor loading of 0.639. Commitment level on daily Inventory tracking system had factor loading of 0.701, Firm's commitment level to stock taking had factor loading of 0.652, compliance level on stores management practice had factor loading of 0.532 and lastly commitment level on implementing lean inventory policies had factor loading of 0.634. Since no item recorded factor loading lower than 0.50, the items were therefore considered to be valid to measure effect of Inventory Management on

implementation of public procurement regulatory framework in devolved governments in Kenya.

Table 4.3: Factor Loadings for Inventory Management

Inventory Management	Factor Loadings
Inventory purchase failure to meet Just-In-Time principal.	.576
Commitment level in eliminating excess products on cost reduction.	.558
Commitment level of ensuring accuracy of inventory systems.	.791
Firm's Commitment updated Asset register.	.639
Commitment level on daily Inventory tracking system.	.701
Firm's Commitment level to Stock taking.	.652
Compliance level on stores management practice.	.532
Commitment level on Implementing lean inventory policies.	.634
Total	**.635**

4.2.6 Factor Loadings for Procurement Audit practices

Procurement audit practices had seven items and from the original list of seven items put forward to measure the effect of procurement audit practices, the principle component Analysis (PCA) method discarded no item. Factor loadings registered were ranging between 0.542 and 0.642 as shown in Table 4.4. The compliance level on procurement audit recommendations had factor loading of .542, how has procurement audit recommendations improved the operations had factor loading of 0.621, Assessment and reviews conducted in the county had factor loading of 0.646. Commitment level of procurement procedures followed to the letter had factor loading of 0.587, cases of loss of procurement funds from the procurement audit reports had factor loading of 0.586. Transparency & accountability in the procurement functions had factor loading of 0.632, accuracy and reliability of procurement records kept had factor loading of 0.604. From the finding, it was clear that all the items under consideration were valid.

Table 4.4: Factor Loadings for Procurement Audit practices

Procurement Audit practices	Factor Loadings
The compliance level on procurement processes undertaken.	.542
How has Procurement audit recommendations improved the operations?	.621
How Procurement tendering process are complied with?	.646
Commitment level on procurement plan followed to the letter.	.587
The procedure followed in setting up the procurement committees.	.586
Transparency & accountability in the procurement functions.	.632
Accuracy and reliability of procurement records kept.	.604
Total	**.603**

4.2.7 Factor Loadings for Monitoring & Evaluation

To measure the moderating effect of monitoring & evaluation on implementation of public procurement regulatory framework in devolved governments in Kenya. Seven items were used. Monitor and evaluate of the procurement procedures and processes had average factor loadings of 0.612, how has the evaluation benefitted the organization in procurement procedures had average factor loadings of 0.652, how often are routine monitoring carried out in the organization had average factor loadings of.0.767, stakeholder's involvement in monitoring and evaluation had average factor loadings of .614, the utilization level of evaluation in the organization had average factor loadings of 0.748, how often is the evaluation exercise undertaken had factor loadings of 0.648, how often does the evaluation work plan followed had factor loadings of 0.511. In total, the entire seven items were found to have acceptable factor loadings of values between 0.511 and 0.767 and thus all the items were considered to be valid for inclusion in the data collection instrument and further analysis. Table 4.5 indicates factor loading per item.

Table 4.5: Factor Loadings for Monitoring & Evaluation

Monitoring & Evaluation	Factor Loads
Monitor and evaluate of the procurement procedures and processes.	.612
How has the Evaluation benefitted the organization in procurement procedure?	.652
How often are routine monitoring carried out in the organization?	.767
Stakeholder's involvement in monitoring and evaluation?	.614
The utilization level of Evaluation in the organization?	.748
How often is the evaluation exercise undertaken?	.648
How often does the Evaluation work plan followed?	.511
Total	**.650**

4.2.8 Factor Loadings for Implementation level of Public Procurement Regulations

The validity of Implementation level of Public Procurement Regulatory within state cooperation's was tested using, an instrument comprising of eleven items was considered as originally compiled from the literature. Subsequently, no item, with low factor loading was discarded. The factor loadings were ranging between 0.622 and 0.793 as indicating that none was considered for removal as shown in Table 4.6. Based on these findings all the factors were considered valid to measure effect of Implementation of public procurement regulations in the devolved systems of governments in Kenya.

Table 4.6: Factor Loadings for Level of Implementation of Public Procurement Regulations

Implementation level of Public Procurement Regulations	Factor Loads
Reduction of cost in implementing public procurement regulations during the FY 2017?	.793
Procurement procedures in implementing Public Procurement Regulations during the FY 2017?	.687
Affirmative action in implementing Public Procurement Regulations during the FY 2017?	.781
The Top management support in implementing of public procurement regulations during the FY 2017?	.651
What was the IFMIS implementation level in implementing of public procurement regulations during the FY 2017?	.622
Total	**.707**

4.2.9 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was employed to determine construct validity instead of principle component analysis (PCA), and this was conducted by making use of fit indices. In cases where we have Lower values of fit indices then the measurement model is said to be not a good model because scales used to measure the dimensions of conceptual framework will always not be validated. For a good Confirmatory factor analysis (measurement model) model to be obtained, every factor loadings of the CFA should be more than 0.50. Factor loading is simply described as the standardised value of each coefficient within the Confirmatory factor analysis model. Factor loading higher than 0.5 is a clear indicator of convergent validity of research instrument. In addition to that, critical rate value higher than 2 for every item in CFA findings suggest that the item is loaded to the factor it is connected. In this study all the items under procurement staff competency, supplier relationship management, inventory management, procurement audit practices, Monitoring & Evaluation and Implementation level of Public Procurement Regulations had factor loads above 0.5 suggesting all the factors were valid enough. The results on figure 4.1 Confirmatory factor analysis (CFA). The fit indices result also shows that the confirmatory Factor Analysis Model was good enough: $\chi 2/DF$ =2.964, CFI=0.966, IFI=0.92, RMSEA= 0.011. The result shown in Table 4.7 and Figure 4.1 in the Appendix 4: Results of Confirmatory Factor Analysis (CFA).

4.2.10 Sample Adequacy Test for the Pilot Study

To establish whether the sample size was sufficient to conduct principle component analysis Kaiser-Meyer-Olkin test was conducted. Kaiser-Meyer-Olkin test compares the values of the observed correlation coefficients with the values of the partial correlation coefficients thus confirming whether the sample size is adequate. The sampling adequacy value should always be more than 0.5 for acceptable or satisfactory factor analysis to be conducted. In this case a common criterion is that the researcher should have 10 – 15 participants per variable. According to Fiedel (2005) factor analysis is only

inappropriate when the sample size is less than 50. On the other hand, Karagöz (2016), recommends a value 0.5 as minimum, values ranging between 0.7- 0.8 are also acceptable, and values more than 0.9 are very good. The finding based on table 4.9, suggest that the sample was within acceptable range because the KMO values were mainly between 0.693 and 0.885 with the least value of 0.693 which was also good enough because it was above the minimum of 0.5.

Bartlett test of Sphericity other than Kaiser-Meyer-Olkin test was performed to establish how suitable the data set is for principle component analysis (PCA) to be conducted. Should it happen that the null hypothesis is accepted based Bartlett test of Sphericity results then, the analysis should not proceed. Bartlett test of Sphericity normally detects whether the correlation matrix indicating the relationship among the indicator variables is an identity matrix. An identity matrix is also known as unit matrix and it is a matrix in which all the diagonal elements are ones and all off diagonal elements are zeros (Kothari,2017). The results suggest that all the correlation matrix for all the variables indicators were unit matrices hence there was no multicollinearity amongst the indicators for all the variables.

Table 4.7: KMO and Bartlett's Test

Independent/ Dependant	Procurement Staff Competency	Supplier Relationship Mgt.	Inventory Management	Procurement audit practices	Monitoring & Evaluation	Implementation level
Degree of freedom	28	45	28	21	21	10
Chi-Square	283.575	348.495	180.156	129.324	371.348	191.067
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.851	0.815	0.693	0.760	0.885	0.722
Bartlett's Test of Sphericity	0.000	0.000	0.000	0.000	0.000	0.000

4.2.11 Outliers Test

An outlier may be explained as that observation which is far from the rest of other observation. The presence of outlier in many cases makes the data not to be normally distributed (i.e. not to assume Gaussian condition that is normality condition). It is therefore necessary to test the presence of outliers in any given data and even remove/expunge them for normality condition to be satisfied or met. In this study, the outliers present were tested and removed. Table 4.9 shows the outliers detected and removed. From the table it was clear that for Procurement Staff Competency there was no outlier detected, for Supplier Relationship Management there were three outliers detected and removed, for Inventory Management there was no outlier detected, for procurement audit, there were four outliers detected and removed for monitoring and evaluation, there were three outliers detected and removed and lastly for Implementation level of Public Procurement Regulations in county governments in Kenya, there was only one outlier detected and removed.

Table 4.8: Outliers Detected

Variables	Position of observed outliers	Total number of outliers
Procurement Staff Competency	-	0
Supplier Relationship Management	21 ,76, 132	3
Inventory Management	-	0
Procurement Audit practices	23, 78, 91, 36,	4
Monitoring & Evaluation	43, 112, 119	3
Implementation level of Public Procurement Regulations	100	0

4.3 Background Information

The section of the background information contains information from general study sample. The study sought to establish the respondent's characteristics who took part in the study. The information obtained from the study was capable of determining how

informed the concerned respondents were with the study problem. The demographic information was sought in order to assist the researcher in establishing if the respondents in the study were a representative sample of the target population. This section also contains the information on demographic distribution in terms of membership of professional body and working experience.

4.3.1 Response Rate

The questionnaires distributed were forty-four (n = 44) excluding the already piloted counties and all the questionnaires were returned from respondents representing 100% response rate from forty-four (44) county governments. Table 4.10 shows the Questionnaire Return Rate by the County government procurement officers who responded.

Table 4.9: Response rate

Number of county governments censured	Total questionnaire Returned	Percentage of response
44	44	100%

4.3.2 Work Experience

The Respondents were asked to indicate the number of years they had service as procurement officers at the counties. According to the study findings in Table 4.11, majority of the respondents had work experience of between 6 and 10 years working in the county, this represented about 52.27% percent of the respondents. A minority of the respondents had worked for the counties for below 5 years. This implied that they had a lot of experience in the procurement processes. Even though Kenya adopted devolved governance a few years ago, many of the county officers had previously served in various ministries or were employees of the municipal councils. The results confirm that many of the county procurement officers are experienced to execute procurement duties effectively (Nthumbi & Mutiso, 2018).

Table 4.10: Distribution of Respondents by Work Experience

Period	Frequency (*n*)	Percentage
Less than 5 years	21	47.73
6-10 Years	23	52.27
Total	**44**	**100.0**

4.3.3 Membership in the Professional Body

There is an on-going trend for professionals to self-regulate through their respective professional associations. This makes it important for professionals to enlist and maintain membership to their respective professional bodies. Members are assured of references on matters of their professional conduct experience and credentials. The results in Table 4.12 indicated that many of the respondents (59.09%) had full membership in procurement professional body. Very few (15.91%) procurements officers had no membership in professional bodies. This implied that many of the county procurement officers were members of professional bodies.

Table 4.11: Distribution of Respondents by Membership in Professional Bodies

Membership	Frequency (*n*)	Percentage
None	7	15.91
Student member	4	9.09
Associate member	4	9.09
Full member	26	59.09
Affiliate member	1	2.27
Fellow member	2	4.55
Total	**44**	**100.0**

4.4 Descriptive Findings

The study main objective was to establish the relationship of procurement management practices and implementation level of public procurement regulatory framework in devolved governments in Kenya. The statistical descriptive in the study were done using measures of central tendency which included the mean, standard deviations, maximum and minimum values and variances. The obtained results were presented according to

the objectives of the study and were presented using tables. The study objectives were to establish the effect of procurement staff competency, Supplier relationship management, Inventory management, procurement audit practices, monitoring and evaluation as moderator on implementation level of public procurement regulatory as dependent variable in devolved governments in Kenya. The descriptive findings were further linked to the previous findings in the literature review discussion.

4.4.1 Procurement Staff competency and Level Implementation of Public Procurement Regulations

The study sought to analyse the relationship between Procurement staff competency and implementation level of Public Procurement Regulations in devolved systems of governments in Kenya**.** Competence is a human characteristic, which allows him to perform work duties or better manage the situation. The characteristics are a set of attributes consisting of knowledge, skills, traits, social roles and motives (Shermon, 2004). The statements indicators were used to measure County procurement officer's perception on procurement staff competency on implementation level of public procurement regulations on a five-point Likert scale of 1-5; where 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree, 5-Strongly Agree.

The findings on Table 4.13 indicate that statement one which required the respondents view on influence of procurement staff competency in terms of effective communication skills on procurement regulations implementation had 30(68.2%) of the respondents who strongly agreed that effective communication skills highly influences procurement regulations implementation, followed by 11(25.0%) who agreed and 3(6.8%) who were still undecided that effective communication skills has influence procurement regulations implementation. This implied that the majority (60) of the procurement officers strongly agreed that effective communication skills has influence on level of implementation of public procurement regulations (M = 3.80, SD =.54). The level of procurement staff competency intern influences effective negotiation process on procurement regulations implementation which had 26(59.1%) of the respondents who

strongly agreed that effective negotiation process has influence on level of implementation of public procurement regulations, followed by 11(25.0%), and 5(11.4%) who were undecided and 2(4.5%) of respondents disagreed. This signify that the majority of the procurement officers at 26(59.1%) strongly agreed that effective negotiation process has influence on the level of implementation of public procurement regulations (*M* = 3.74, *SD* =.73). A significant part of the procurement bosses' job would be an understanding the nuances behind different compliance regulations to prevent the procurement process from being flawless.

The procurement procedures and regulation on level of public procurement regulations had 23(52.3%) of the respondents who strongly agreed that procurement procedures and regulation on level of implementation of public procurement regulations, followed by 9(20.5%), and 3(6.8%) respondents who were undecided. This implied that the majority 23(52.3%) of the procurement officers strongly agreed that procurement procedures and regulation has influence on level of implementation of public procurement regulations (*M* = 3.91, *SD* =0.76). The effect of knowledge & skills on one's jobs description on level of implementation of public procurement regulations had 21(47.7%) of the respondents who strongly agree that knowledge and skills on one's jobs description have influence on level of implementation of public procurement regulations, followed by 15 (34.1%), 7(15.9%) who were undecided and 2(4.5%).

This implied that the majority 21(47.7%) of the procurement officers highly felt that knowledge and skills on one's jobs description has influence on level implementation of public procurement regulations (*M* = 3.72, *SD* =0.78). The knowledge on work relationship management on level of implementation of public procurement regulations had 22(50%) of the respondents who strongly agreed that knowledge on work relationship management influence level of public procurement regulations, followed by 13 (29.6%), 7(15.9%) who were undecided and 2(4.5%).

This implied that the majority 22(50%) of the procurement officers highly felt that knowledge on work relationship management influence level of implementation of

public procurement regulations (*M* = 3.80, *SD* =0.75). The influence of adoption of new working policy systems on level of implementation of public procurement regulations had 19(43.2%) of the respondents who strongly agreed that adoption of new working policy systems influence procurement regulations implementation, followed by 18(40.9%), 3(6.8%) who were undecided, 2(4.5%) and 1(2.3%). This implied that the majority 21(47.7%) of the procurement officers felt that adoption of new working policy systems influences level of implementation of public procurement regulations (*M* = 3.37, *SD* =0.73).

The knowledge on financial management related issues on level of implementation of public procurement regulations had 22(50%) of the respondents who strongly agreed that knowledge on financial management related issues influence level of implementation of public procurement regulations, followed by 16 (36.4%), 4(9.1%) who were undecided and 2(4.5%). This implied that the majority 22(50%) of the procurement officers who strongly agreed that knowledge on financial management related issues influence level of implementation of public procurement regulation (*M* = 3.40, *SD* =0.72). The contract management skills on level of implementation of public procurement regulations had 19(43.2%) of the respondents who strongly agreed that knowledge on contract management skills influence level of implementation of public procurement regulations, followed by 17(35.6%), 5 (11.4%), 2(4.5%) were undecided and 1(2.3%).

This implied that the majority 19(43.2%) of the procurement officers highly felt that knowledge on contract management skills influence level of implementation of public procurement regulations (*M* = 3.62, *SD* =0.82). Based on the procurement staff competency and how procurement officers perceived Public procurement regulations implementation level, the most important factor perceived by procurement officers to contribute to level of implementation of public procurement regulations, was understanding level of staff competence in terms of procurement procedures and regulations (Mean=3.91) whereas the least important factor perceived by procurement

officers to contribute to level of implementation of public procurement regulations was Staff adoption level of new working policy (Mean=3.37).

The results indicated that many of the county officers were fairly competent to handle procurement processes adequately. These results were supported by the study finding of Ndumbi and Okello (2014) on their assessment on the effect of employee training on Compliance to Public Procurement system in Kengen Company in Kenya to understand on the situation in the energy. Their study revealed that most procurement staffs are not properly conversant with the Public Procurement rules policies. They further pointed out that procurement staff competencies level not only influenced performance of procurement department but also the whole ministry. They concluded that in as much as skilled staff being competent in their work in giving solutions, the challenge is the incompetent staffs that are not productive in the ministry. Stable procurement process may be realized through skilled and knowledgeable staff on their effective communication skills and Procurement procedures & regulations to procure items and services. A study by Kimote and Kinoti (2018) involving Nakuru County reported many of the officers charged with the responsibility of implementing procurement policies were not adequately competent. And therefore, its important as stated by Hui *et al.*, (2011) that procurement officers should and must undergo training and be conversant with all the procurement procedures.

Table 4.12: Procurement Staff competency and Implementation Level of Public Procurement Regulations

Statements	5	4	3	2	1	Mean	Std. dev
Level on effective communication skills	30(68.2%)	11(25.0%)	3(6.8%)	(0.0%)	0(0.0%)	3.80	0.54
Level of understanding of effective negotiation process	26(59.1%)	11(25.0%)	5(11.4%)	2(4.5%)	0(0.0%)	3.74	0.73
Staff understanding of procurement procedures and regulations.	23(52.3%)	9(20.5%)	9(20.5%)	3(6.8%)	0(0.0%)	3.91	0.76
Procurement Staff capacity building	21(47.7%)	15(34.1%)	7(15.9%)	1(2.3%)	0(0.0%)	3.72	0.78
Staff level of knowledge on work relationship management	22(50.0%)	13(29.6%)	7(15.9%)	2(4.5%)	0(0.0%)	3.80	0.75
Staff adoption level of new working policy systems	21(47.7%)	18(40.9%)	1(2.3%)	2(4.5%)	1(2.3%)	3.37	0.73
Staff understanding on financial management related issues	22(50.0%)	16(36.4%)	2(4.5%)	4(9.1%)	0(0.0%)	3.40	0.72
Staff level of knowledge & skills	19(43.2%)	17(38.6%)	5(11.4%)	2(4.5%)	1(2.3%)	3.62	0.82

4.4.2 Supplier Relationship Management and Implementation Level of Public Procurement Regulations

The study sought to establish the relationship between supplier relationship management and implementation level of Public Procurement Regulations in devolved governments in Kenya**.** To measure County procurement officers' perception on supplier relationship management and level of implementation of public procurement regulations, a five-point Likert scale of 1-5 were applied; where 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree, 5-Strongly Agree.

The findings in Table 4.14 indicates that the respondents expressed their knowledge level of supplier relationship management in terms of the organization's commitment level in supplier partnership/development influence on level of implementation of Public Procurement Regulations which had 25(56.7%) of the respondents who strongly agreed that the organization's commitment level in supplier partnership/development influence on level of implementation of Public Procurement Regulations, followed by 12(27.3%), 4(9.1%) who disagreed, 2(4.5%) and 2(2.3%). This implied that the majority 51(56.8%) of the procurement officers felt that organization's commitment level in supplier partnership/development influence level of implementation of Public Procurement Regulations (M = 3.22, SD =0.75).

The level of information sharing between the buyer/supplier management relations influence on level of implementation of procurement regulatory had 22(50.0%) of the respondents who strongly agreed that level of information sharing between the buyer/supplier management relations have influence on level of implementation of procurement regulations, followed by 16(36.4%), 4(9.1%) who were undecided and 2(4.5%). This implied that the majority 22(50.0%) of the procurement officers felt that level of information sharing between the buyer/supplier management relations have influence on level of implementation of procurement regulations (M = 3.38, SD =0.71). The level of implementation of public procurement regulations had 16(36.4%) of the respondents who felt that organization's level of commitment on suppliers' payment influence level of implementation of procurement regulations, followed by 12(27.3%), 10(22.7%) undecided, 5(11.4%) and 1(2.3%). This implied that the majority 16(34.1%) of the procurement officers felt that organization's level of commitment on suppliers' payment influence level of implementation of procurement regulations (M = 3.11, SD =1.02).

The organization's Commitment level in appraising its suppliers on level of implementation of public procurement regulations had 15(34.1%) of the respondents who felt that organization's Commitment level in appraising its suppliers influence level of implementation procurement regulations, followed by 14(31.8%), 9(20.5%),

3(6.8%). This implied that the majority 15(34.1%) of the procurement officers felt that organization's Commitment level in appraising its suppliers influence level of implementation of public procurement regulations (*M* = 2.83, *SD* =1.05). The supplier's commitment level on value addition/creation on deliveries on level of implementation of procurement regulations had 23(52.3%) of the respondents who strongly agreed that the supplier's commitment level on value addition/creation on deliveries influence level of implementation of procurement regulations, followed by 9(20.5%), 2(4.5%) and 1(2.3%). This implied that the majority 23(52.3%) of the procurement officers felt that the supplier's commitment level on value addition/creation on deliveries influence level of implementation of procurement regulations (*M* = 3.11, *SD* =0.88).

The supplier's commitment level on quality of goods and services improvement on level of implementation of public procurement regulations had 25(56.8%) of the respondents who strongly agreed that supplier's commitment level on quality of goods and services improvement influence level of implementation of procurement regulations, followed by 10(22.7%), 4(9.1%) undecided and 1(2.3%). This implied that the majority 25(56.8%) of the procurement officers felt that that supplier's commitment level on quality of goods and services improvement influence implementation level of procurement regulations (*M* = 3.51, *SD* =2.12). The buyer/supplier collaboration level in new product development on level of implementation of public procurement regulations had 20(45.5%) of the respondents who strongly agreed that buyer/supplier collaboration level in new product development influence level of implementation of procurement regulations, followed by 10(22.7%), 8(18.2%), 4(9.1%) and 2(4.5%). The study findings implied that the majority 20(45.5%) of the procurement officers felt that that buyer/supplier collaboration level in new product development influence level of implementation of procurement regulations (*M* = 2.91, *SD* =0.94).

The organization Trust-based relationship with suppliers on level of implementation of public procurement regulations had 20(45.5%) of the respondents strongly agreed that the organization Trust-based relationship with suppliers influence level of implementation of procurement regulations, followed by 12(27.3%), 10(22.7%),

0(0.0%) and 3(6.8%). This implied that the majority 20(45.5%) of the procurement officers felt that the organization Trust-based relationship with suppliers influence level of implementation of procurement regulations (*M* = 3.11, *SD* =0.78). The delivered goods rejected due to non-conformity to specifications on level of implementation of procurement regulatory had 21(47.7%) of the respondents agreed that delivered goods rejected due to non-conformity to specifications influence level of implementation of procurement regulations, followed by 15(34.1%), 4(9.1%) who were undecided and 2(4.5%). The study findings implied that the majority 21(47.7%) of the procurement officers felt that the delivered goods rejected due to non-conformity to specifications influence level of implementation of public procurement regulations (*M* = 2.47, *SD* =0.89).

The Supplier failure to honor the orders issued by the buyer on level of implementation of procurement regulations had 22(50%) of the respondents who strongly agreed that Supplier failure to honor the orders issued by the buyer influence level of implementation of procurement regulations followed by 13(29.5%), 5(11.4%), 3(6.8%) and 1(2.3%). The study findings implied that the majority 22(50%) of the procurement officers felt that Supplier failure to honor the orders issued by the buyer influence level of implementation of procurement regulations (*M* = 2.56, *SD* =0.86).

In summary, based on the supplier relationship management and how procurement officers perceived level of implementation of public procurement regulations, the most important factor perceived by procurement officers to contribute to the level of implementation of procurement regulations was supplier's commitment level on quality of goods and services (Mean=3.51), whereas the least important factor perceived by procurement officers to contribute to the level of implementation of procurement regulations was delivered goods rejected due to non-conformity to specifications (Mean=2.47). The study findings imply that a lot more need to be done to improve on the two elements (trust and commitment). Trust and commitment serve a glue that binds the relationships together. Without trust and commitment, supply chain members may not be satisfied with the relationship (Maloni & Benton, 2005).

The results also agree with the study by Kamau (2013) who viewed that communication, trust, commitment, mutual goals and cooperation are key in effective SRM which will impact on organization productivity. Poor supplier record management leads to high costs incurred in prolonged order cycle times. This leads to poor organization productivity due to lack of maintaining good relationships with their suppliers. This was underscored by Kosgei & Gitau (2016) that SRM goal is to streamline and make efficient and effective process among the product and suppliers. SRM in the recent past achieved relevance and enhanced supplier's positive relationship for better performance through minimization of costs in procurement and quality product deliveries. The results also concerned with findings of Tangus (2015) on the need for organization to establish supplier development programs to encourage firms to be interested in programs that enhance productivity of the supplier, hence higher performance of the organization are realized. Performance of firms may be improved through supplier development engagement activities.

Successful management of SRM, reduces costs beyond traditional sourcing, improves the drive and monitoring of performance of supplies, manage supply risk and compliance with responsible sourcing, ethics and regulatory requirement (Deloitte, 2015). Treating county suppliers as a partner and maintaining effective communication goes a long way toward creating a sustained mutually beneficial relationship. This is one of the crucial aspects of supplier relationship management. This requires open and transparent supplier conversations as well as feedback sessions. Unfortunately, many procurement officers handling supplier relationships often have little regard for the regulations that guides the procurement processes that undermines the degree of the supplier's trust.

Table 4.13: SRM and Implementation Level of Public Procurement Regulations

Statements	5	4	3	2	1	Mean	Stdev
The organization's commitment level in supplier partnership & development.	25(56.8%)	12(27.3%)	4(9.1%)	2(4.5%)	1(2.3%)	3.22	0.75
The level of information sharing between the buyer / supplier management relations	22(50.0%)	16(36.4%)	4(9.1%)	2(4.5%)	0(0.00%)	3.38	0.71
The organization's level of commitment on suppliers' payment	16(36.4%)	12(27.3%)	10(22.7%)	5(11.4%)	1(2.3%)	3.11	1.02
The organization's Commitment level in appraising its suppliers	15(34.1%)	14(31.8%)	9(20.5%)	3(6.8%)	3(6.8%)	2.83	1.05
The supplier's commitment level on value addition/creation on deliveries	23(52.2%)	9(20.5%)	9(20.5%)	2(4.5%)	1(2.3%)	3.11	0.88
The supplier's commitment level on quality of goods and services improvement	25(56.8%)	10(22.7%)	4(9.1%)	4(9.1%)	1(2.3%)	3.51	2.12
Buyer/supplier collaboration level in new product development	20(45.5%)	10(22.7%)	8(18.2%)	4(9.1%)	2(4.5%)	2.91	0.94
The organization Trust-based relationship with suppliers	20(45.5%)	12(27.3%)	9(20.5%)	3(6.8%)	0(0.00%)	3.11	0.79
Delivered goods rejected due to non-conformity to specifications	21(47.7%)	15(34.1%)	4(9.1%)	2(4.5%)	2(4.5%)	2.47	0.89
Supplier failure to honor the orders issued by the buyer	22(50%)	13(29.5%)	5(11.4%)	3(6.8%)	1(2.3%)	2.56	0.86

4.4.3 Inventory Management and Implementation Level of Public Procurement Regulations

The researcher sought to determine the relationship between inventory management and level of implementation of Public Procurement Regulations in devolved governments in Kenya. Poor inventory management has been reported to affect customer services and revenue, which negatively impact an organization's performance (Masudin, Kamara, Zulfikarijah, & Dewi, 2018). Therefore, it is imperative for the county government to maintaining accurate records of inventory to improve customer service. This will afford them an opportunity to meet customers' demands and also improves organization's productivity by ensuring that materials are available when needed and maximizes revenue by avoiding holding excess inventory that will eventually end up being written off. A five-point Likert scale of 1-5 was adopted; where 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree, 5-Strongly Agree.

The findings on Table 4.15 indicates inventory management in terms of the Inventory purchase failure to meet Just-In-Time principal influence on implementation level of Public Procurement Regulations had 24(54.5%) of the respondents strongly agreed that Inventory purchase failure to meet Just-In-Time principal influence implementation level of Public Procurement Regulations, followed by 12(27.3%), 4(9.1%), 2(4.5%) and 1(2.3%). This implied that the majority 24(54.5%) of the procurement officers felt that Inventory purchase failure to meet Just-In-Time principal influence level of implementation of Public Procurement Regulations (M = 2.80, SD =0.81).

The Commitment level in eliminating excess products on cost reduction influence implementation level of Public Procurement Regulations which had 23(52.3%) of the respondents who strongly agreed that Commitment level in eliminating excess products on cost reduction influence implementation level of Public Procurement Regulations, followed by 10(22.7%), 7(15.9%) undecided, 2(4.5%) and 1(2.3%). This implied that the majority 23(52.3%) of the procurement officers felt that Commitment level in eliminating excess products on cost reduction influence implementation level of Public

Procurement Regulations (*M* = 3.49, *SD* =3.25). The accuracy of inventory systems influence on implementation level of Public Procurement Regulations had 23(52.3%) of the respondents strongly agreed that Commitment level of ensuring accuracy of inventory systems influence implementation level of Public Procurement Regulations, followed by a similar number of 8(18.2%), and 5(11.4%). This implied that the majority 23(52.3%) of the procurement officers felt that Commitment level of ensuring accuracy of inventory systems influence implementation level of Public Procurement Regulations (*M* = 3.22, *SD* =0.88).

The Firm's updated Asset register influence on implementation level of Public Procurement Regulatory had 28(63.6%) of the respondents who strongly agreed that Firm's updated Asset register influence implementation level of Public Procurement Regulations, followed by 6(13.6%), 5(11.4%), 3(6.8%) and 1(2.3%). This implied that the majority 28(63.6%) of the procurement officers felt that Firm's updated Asset register influence implementation level of Public Procurement Regulations (*M* = 3.18, *SD* =0.77). The Commitment level on daily Inventory tracking system influence on implementation level of Public Procurement Regulations had 25(56.8%) of the respondents who moderately felt that Commitment level on daily Inventory tracking system influence implementation level of Public Procurement Regulations, followed by 9(20.5%), 6(13.6%) and 2(4.5%). This implied that the majority 25(56.8%) of the procurement officers felt that Commitment level on daily Inventory tracking system influence implementation level of Public Procurement Regulations (*M* = 3.07, *SD* =0.85).

The firm's Commitment level to stock taking influence on implementation level of Public Procurement Regulatory had 25(56.8%) of the respondents strongly agreed that firm's Commitment level to stock taking influence implementation level of Public Procurement Regulations, followed by 10(22.7%), 4(9.1%), 3(6.8%) and 2(4.5%). This implied that the majority 25(56.8%) of the procurement officers felt that firm's Commitment level stock taking influence implementation level of Public Procurement Regulations (*M* = 3.17, *SD* =0.86). The Compliance level on stores management practice

influence on implementation level of Public Procurement Regulations had 23(52.3%) of the respondents who strongly agreed that Compliance level on stores management practice influence implementation level of Public Procurement Regulations, followed by 13(29.5%), 5(11.4%), 3(6.8%). This implied that the majority 23(52.3%) of the procurement officers felt that Compliance level on stores management practice influence implementation level of Public Procurement Regulations (*M* = 3.33, *SD* =0.78).

The respondents expressed their view of inventory management in terms of Commitment level on Implementing lean inventory policies influence on implementation level of Public Procurement Regulations had 24(54.5%) of the respondents who felt that Commitment level on Implementing lean inventory policies influence implementation level of Public Procurement Regulations, followed by 9(20.5%), 8(15.9%), 3(6.8%) and 1(2.3%). This implied that the majority 24(54.5%) of the procurement officers felt that Commitment level on Implementing lean inventory policies influence implementation level of Public Procurement Regulations (*M* = 3.13, *SD* =0.82).

Summative, based on the inventory management and how procurement officers perceived procurement regulations implementation level, the most important factor perceived by procurement officers to contribute to procurement regulations implementation level was Commitment level in eliminating excess products on cost reduction (Mean=3.49) whereas the least important factor perceived by procurement officers to contribute to procurement regulations implementation level was Inventory purchase failure to meet Just-In-Time principal (Mean=2.80). The results agreed with the findings of According to Kontus (2014) that management ought to carry an evaluation of inventory levels to ensure of the lowering of inventory costs and improving in the profitability of the organization. He further discussed that inventory management is looked into as way of making sure that what was required to sustain the operational activities are provided for holding ordering and carrying costs at the lowest. The findings conquered with Mwangi and Nyambura (2015) who identified production maintenance, cost control, record reduced loss, and continuous supply as the

fundamental elements of inventory management as important role in the performance of the food processing companies.

The study findings imply that Just-in-time delivery requires a highly responsive, flexible supply chain. This is again is enhanced by a good supplier procurement officer relationship. It is worth noting that demand forecasting is crucial to meeting county clients' expectations, and today's customers' value flexibility and responsiveness to a remarkable degree. It's not enough to make processes more efficient when working to reduce costs. A recent study by Zipporah & Senelwa, (2018) found that effectiveness of inventory management system contributes to ability to maintain optimum stocks. Dependability of demand forecasting, planning for production requirement and reduced lead times also contributes to optimal stock levels which ultimately improves the performance of procurement function.

Table 4.14: Inventory Management and Implementation Level of Public Procurement Regulations

Statements	5	4	3	2	1	Mean	Std. dev
Inventory purchase failure to meet Just-In-Time principal.	24(54.5%)	12(27.3%)	4(9.1%)	2(4.5%)	1(2.3%)	2.80	0.81
Level in eliminating excess products on cost reduction.	23(52.3%)	10(22.7%)	7(15.9%)	2(4.5%)	1(2.3%)	3.49	3.25
Level of ensuring accuracy of inventory systems	23(52.3%)	8(18.2%)	8(18.2%)	5(11.4%)	0(0.0%)	3.22	0.88
Firm's Commitment level Asset register.	28(56.8%)	6(13.6%)	5(11.4%)	3(6.8%)	1(2.3%)	3.18	0.77
Daily Inventory tracking system.	25(56.8%)	9(20.5%)	6(13.6%)	2(4.5%)	2(4.4%)	3.07	0.85
Firm's Commitment level to stock taking.	25(56.8%)	10(22.7%)	4(9.1%)	3(6.8%)	2(4.5%)	3.17	0.86
Compliance on stores management practice.	23(52.3%)	13(29.5%)	5(11.4%)	3(6.8%)	0(0.0%)	3.33	0.78
Commitment level on Implementing lean inventory policies	24(54.5%)	9(20.5%)	7(15.9%)	3(6.8%)	1(2.3%)	3.13	0.82

4.4.4 Procurement Audit practices and Implementation level of public procurement regulations

The study sought to determine the relationship between procurement audit practises and implementation level of public procurement regulations in devolved governments in Kenya. Audits are either internal or external and internal audits are carried out internally within an entity of government and the internal auditor reports to the top decision-making organ. On the other hand, external audit is carried out by an external party, in the Kenyan context this being the Auditor General, the Ethics and anti-corruption

commission and PPRA. To measure County procurement officers' perspective on procurement audit practices and level of implementation of public procurement regulations, a five point Likert scale of 1-5 was applied; where 1-strongly disagree, 2-Disagree, 3-udecided, 4-Agree, 5-Strongly Agree.

The findings on Table 4.16 shows the procurement audit practices in terms of compliance level on Audit recommendations influence on implementation level of Public Procurement Regulations had 26(59.1%) of the respondents who strongly agreed that compliance level on procurement audit report recommendations influence implementation level of Public Procurement Regulations, followed by 14(31.8%), 3(6.8%), and 1(2.3%). This implied that the majority 26(59.1%) of the procurement officers felt that compliance level on procurement audit report recommendations influence implementation level of Public Procurement Regulations (*M* = 3.60, *SD* =0.652). The respondents perspective of procurement audit practices in terms of how improved operations due to procurement audit recommendations influence on implementation level of Public Procurement Regulations had 27(61.4%) of the respondents who strongly agreed that improved operations due to procurement audit recommendations influence implementation level of Public Procurement Regulations, followed by 9(20.5%) and 8(18.2%) were undecided. This implied that the majority 27(61.4%) of the procurement officers felt that improved operations due to procurement audit recommendations influence implementation level of Public Procurement Regulations (*M* = 3.98, *SD* =0.62).

Assessment and reviews conducted in the county on implementation level of Public Procurement Regulations had 25(56.8%) of the respondents who to a large extent felt that Procurement audit reviews conducted in the county influence implementation level of Public Procurement Regulations, followed by 12(27.3%), 5(11.4%) and 1(2.3%). This implied that the majority 25(56.8%) of the procurement officers strongly agreed that Procurement Assessment and reviews conducted in the county influence implementation level of Public Procurement Regulations (*M* = 3.76, *SD* =0.69). The procurement audit practices in terms Commitment level of procurement procedures

followed to the later influence implementation level of Public Procurement Regulations had 24(54.5%) of the respondents who felt that Commitment level of procurement procedures followed to the later influence implementation level of Public Procurement Regulations, followed by 16(36.4%), 2(4.5%) and 2(4.5%). This implied that the majority 24(54.5%) of the procurement officers felt that Commitment level of procurement procedures followed to the later influence implementation level of Public Procurement Regulations (M = 4.03, SD =4.34).

Procurement audit practices in terms of Cases of loss of procurement funds from the procurement audit reports influence on implementation level of Public Procurement Regulations had 18(40.9%) of the respondents who felt that Cases of loss of procurement funds from the procurement audit reports influence implementation level of Public Procurement Regulations, followed by 11(25.0%), 8(18.2%) and 6(13.6 %). This implied that the majority 18(40.9%) of the procurement officers felt that Cases of loss of procurement funds from the procurement audit reports influence implementation level of Public Procurement Regulations (M = 2.88, SD =1.11).

Transparency & accountability in the procurement functions influence on implementation level of Public Procurement Regulations had 24(54.5%) of the respondents who felt that Transparency & accountability in the procurement functions influence implementation level of Public Procurement Regulations, followed by 11(25.0%), 4(9.1%), 3(6.8%) and 0(0.0%). This implied that the majority 24(54.5%) of the procurement officers felt that Transparency & accountability in the procurement functions influence implementation level of Public Procurement Regulations (M = 3.58, SD =0.82). Procurement audit practices in terms of Accuracy and reliability of procurement records kept influence on implementation level of Public Procurement Regulations had 24(54.5%) of the respondents who felt that Accuracy and reliability of procurement records kept influence implementation level of Public Procurement Regulations, followed by 12(27.3%), 4(9.1%) , 2(4.5%) and 1(2.3%). This implied that the majority 24(54.5%) of the procurement officers felt that Accuracy and reliability of

procurement records kept influence implementation level of Public Procurement Regulations (*M* = 3.58, *SD* =0.82).

Summative, based on the procurement audit practices and how procurement officers perceived procurement regulatory implementation level, the most important factor perceived by procurement officers to contribute to procurement regulations implementation level was Commitment level of procurement procedures followed to the later (Mean=4.03) whereas the least important factor perceived by procurement officers to contribute to procurement regulations implementation level was Transparency & accountability in the procurement functions (Mean=2.88). The study findings reveals that many counties procurement process are facing serious problems. This can be attributed to lack of adoption of mitigation measures suggested in the previous audits. Regular reviews or audits of procurement processes can be done to ensure probity is being considered and achieved (Amos & Weathington, 2008).

A majority of the respondents confirmed that procurement audit reviews were regularly conducted but they were not adequate. This confirms the findings of Nthumbi and Mutiso (2018) that regular audits are undertaken to ensure that the processes are flawless. The respondents stated that the procurement procedures followed to a large extent (*M*=4.03, *SD* =4.34). Many the officers stated that since the launch of Integrated Financial Management Information System (IFMIS) for use in executing procurement processes they have encountered serious problems. According to the officers, there has been difficulties matching IFMIS records with the manual ones. This is because of the delayed release of county funds, slow execution of county projects and inefficiencies on the part of some of the officers (Chimwani, Iravo, & Tirimba, 2014). The delayed release of funds to the counties has in the recent past emerged as the main barrier to efficient county operations (Eregae, Mokaya, & Gikunda, 2019).

Although most of officers were found to be accountable and transparent, much more is needed. The two elements are very important in improving services delivery and this has been confirmed by Eregae, *et al.,* (2019) who argued that Accountability and

transparency were found to be the catalyst binding resource allocation and public participation to propel service delivery. As reported by Bashuna (2013), accountability constitutes a central pillar of any public procurement system. Without transparent and accountable systems, a lot of governments and public resources will go to waste. The vast resources channeled through public procurement systems run the danger of increased corruption and misuse of funds. As witnessed in most counties' government in the country.

However, according to Bashuna (2013) even in a system with low levels of corruption, public and civic oversight can help identify inefficiencies, thereby increasing procurement efficiency and effectiveness for the benefit of improved service delivery and ultimately citizens. The findings showed that most of the audit practices were not fully complied with despite their importance in improving procurement performance. The findings also suggest that even though audit reviews were being undertaken in the counties, they needed to be beefed up to ensure compliance with the procurement regulations. Wambui, (2015) observed that poor records management by internal audit can render the wider organization vulnerable to breaching the appropriate regulations. Internal audit services themselves are auditable and good record management demonstrates compliance with the relevant standards.

Table 4.15: Pprocurement Audit Practices and Implementation Level of Public Procurement Regulations

Statements	5	4	3	2	1	Mean	Stdev.
The compliance level on procurement audit recommendations.	59.1%	31.8%	6.8%	2.3%	0.0%	3.60	0.65
How has procurement audit recommendations improved the operations.	61.4%	20.5%	18.2%	0.0%	0.0%	3.98	0.62
Assessment & reviews conducted in the county.	56.8%	27.3%	11.4%	2.3%	0.0%	3.76	0.69
Commitment level of procurement procedures followed to the later.	54.5%	36.4%	4.5%	4.5%	0.0%	4.03	4.34
Cases of loss of procurement funds from the procurement audit reports.	25.0%	40.9%	18.2%	13.6%	0.0%	2.88	1.11
Transparency & accountability in the procurement functions.	54.5%	25.0%	9.1%	6.8%	0.0%	3.58	0.82
Accuracy and reliability of procurement records kept.	54.5%	27.3%	9.1%	4.5%	2.3%	3.64	0.89

4.4.5 Monitoring & Evaluation and Level of Implementation of Public Procurement Regulations

The study sought to examine the moderating effect of procurement staff competency, supplier relationship management, inventory management, procurement audit on level of implementation of public procurement regulations. PPOA (2019) states that Monitoring and evaluation reviews have continued to ensure value for money is achieved by a public procurement system entities that pay attention to economy and efficiency. M & E also has allowed stakeholders both at National and County governments to understand and monitor how public funds are spent through public procurement for purposes of service delivery. This study hypothesized that with proper monitoring and evaluation, and with adequate adherence to regulation, the corruption and bribery cases can be minimized if not eradicated.

The level of monitoring and evaluation was assessed by use of Likert-type items on a five-point scale where; 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree, 5-Strongly Agree. As reported in Table 4.17, most of the respondents noted that the level of monitoring and evaluation of the procurement procedures and processes was moderate (*M*= 3.55, *SD*= 0.95) even though many of them acknowledged that M & E activities had improved the efficiency of procurement procedures (*M*= 3.61, *SD*= 0.96). This showed there were not adequate monitoring and evaluation exercises and as such county governments need to raise the scope and intensity of M & E in order to achieve efficient and effective procurement processes. Regular monitoring makes procurement procedures more effective and it a basic step to achieving accountability and transparency. Management's continuous monitoring and evaluating of the procurement process establishes integrity and compliance with laws and ethical standards. It should also be noted that regular M & E of the county projects and programs is essential to providing timely and reliable data on economic growth and poverty reduction.

On routine monitoring, the officers stated that the counties fairly carried out assessment on the procedures although they may not have been adequate (*M*= 3.42, *SD*= 0.96). The procurement act requires that stakeholders be adequately to sanitize the procurement process, however, there was a feeling by a majority of the officers that stakeholder involvement was not adequate (*M*= 3.47, *SD*= .83). A majority of the respondents (*M*= 3.78, *SD*= 0.86) felt that adequate was the scope of the evaluation undertaken was moderate and work plans were fairly followed. This shows that monitoring and evaluation conducted at the counties to assess the procurement processes was moderate.

Table 4.16: Descriptive Statistics on Monitoring and Evaluation Practices

Statements	M	SD
Monitor and evaluate of the procurement procedures and processes	3.55	0.95
M & E benefitted the organization in procurement procedures	3.61	0.96
Routine monitoring carried out in the organization	3.42	1.01
Stakeholder's involvement in monitoring and evaluation	3.47	0.83
The utilization level of Evaluation in the organization	3.64	0.91
scope of the evaluation exercise undertaken	3.78	0.86
How often does the Evaluation work plan followed	3.73	0.88

Note. 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree, 5-Strongly Agree.

4.4.6 Implementation Level of Public Procurement Regulations

It is worth noting that, the enactment of the Public Procurement and Asset Disposal Act, 2015. The Act establishes the Public Procurement Regulatory Authority among other functions, to monitor, assess and review the public procurement and Asset Disposal system to ensure they respect the National values and other provisions including Article 227 of the constitution on public procurement. The Authority in furtherance of its mandate ensured that public procurement procedures and regulations established by Public Procurement and Asset Disposal Act (PPAD), 2015 as well as the Regulation 2016, Public Private Partnerships Act, 2012, Public Procurement and Disposal (Preference & Reservations) Regulations, 2011, and the Public Procurement and Disposal (County Governments) Regulations, 2013 were complied with. The County procurement officers included are bound by law to adhere to these acts and regulations while procuring goods and services on behalf of the public. This study was therefore set out to assess the implementation of public procurement regulations over a period of five years and beyond begin from 2014 through to 2020. Table 4.18 presents the perceived levels of Top management support with the regulations within a period of 5 years. It was found that the top management support with the procurement regulations has increased tremendously over years as reported by the mean scores; the mean top management support score for 2014 was *M*=2.75, *SD*= 0.97 while that of the year 2018 was *M*=3.47,

SD= 0.97. However, there was a decline between 2016 (*M* = 4.62, *SD*= 6.14) and 2018 (*M*=3.57, *SD*= 0.97). This may have been brought by the political instability that had locked the country in 2017.

Table 4.17: Top Management Support on Implementation of Procurement Regulations

Top management support on implementation level	M	SD
2014	2.75	0.97
2015	3.00	0.91
2016	3.84	4.44
2017	4.62	6.14
2018	3.57	0.97

4.4.7 Distribution of Percentages on IFMIS Implementation Level

As shown in Table 4.19, there was a general rise on IFMIS implementation level over the years from 2014. In the year 2014 the mean level of IFMIS implementation was *M* =2.09, *SD* =1.18 while in 2018 the score shot to *M* =2.84, *SD* =1.23. This is a clear indication that the procurement processes in the county governments not functioning as expected and as such they need to be fixed.

Table 4.18: Distribution of Percentages on IFMIS implementation level on Public Procurement Regulations

IFMIS implementation level of PPR	M	SD
IFMIS implementation in 2014	2.09	1.18
IFMIS implementation in 2015	2.18	1.06
IFMIS implementation in 2016	2.53	0.97
IFMIS implementation in 2017	2.71	1.07
IFMIS implementation in 2018	2.84	1.23

4.4.8 Annual % (s) Affirmative Action on the Implementation of PPR

The annual percentages of affirmative action reduced significantly over the years as revealed by the mean percentage scores over years. The affirmative action in 2014 was

M =3.78, *SD* =5.72 and this went down to *M* =2.50, *SD* =1.11 in 2018. The annual affirmative action between 2014 through 2020 is presented in Table 4.20.

Table 4.19: Annual Affirmative Action on Implementation of PPR

Average lead time in weeks	M	SD
2014	3.78	5.72
2015	3.13	0.99
2016	3.25	3.26
2017	2.64	0.99
2018	2.50	1.11

4.4.9 Cost Reduction Scores

Table 4.21 presents the scores of procurement reduction costs over a period of five years (2014-2018). The analysis of cost of complying with the procurement regulation rose over years between 2014 and 2018. The mean cost reduction score in 2014 was *M* =2.62, *SD* =0.75 and this went up to *M* =3.46, *SD* =0.74 in 2018.

Table 4.20: Cost Reduction Scores

Cost reduction over years	M	SD
2014	2.62	0.75
2015	2.80	0.70
2016	3.01	0.72
2017	3.25	0.69
2018	3.46	0.74

4.4.10 Challenges Facing Compliance with Procurement Regulations

When asked to indicate the challenges being encountered in the counties in the process of complying with the procurement regulation, many officers (*n*= 15, 39.47%) stated that there was a lot of political interference in the procurement processes. Table 4.22 presents bottlenecks that counties faced in the process of trying to comply with the procurement regulation. Public procurement is considered an inherently a politically sensitive activity

(Schapper *et al.,* 2006). According to the procurement officers, there was a lot of political interference in the procurement process which compromised the full implementation of the regulations. In certain instances, the procurement officers are intimidated with threats of suspension and being sacked in case they failed to obey illegal directives. Inadequate skilled personnel also emerged as second major challenge (*n* = 8, 21.05%). This supports the recommendation by Eregae, *et al.*, (2019) that county managers should focus on providing technical knowledge and skills to enable staff to perform their duties effectively. Other challenges included late payment of contractors as a result of delayed disbursement of funds by the national government (*n* = 3, 7.89%), lack of proper facilities (*n* = 6, 15.79%), inadequate participation in public procurement functions (*n* = 3, 7.89%), transparency (*n* = 2, 5.26%), and high pricing (*n* = 1, 2.63%).

Table 4.21: Challenges Facing Compliance with Procurement Regulations (N=44)

Challenges	Frequency	Percent
Late payment of contractors	3	7.89
Lack of skilled personnel's	8	21.05
Political issues	15	39.47
Lack of facilities	6	15.79
Inadequate participation in public procurement functions	3	7.89
Transparency	2	5.26
High pricing	1	2.63

4.5 Hypotheses Testing

The testing of Hypotheses was conducted to establish the relationship of the individual independent variable and level of implementation of public procurement regulatory framework in county governments in Kenya. The study used the following hypotheses to test the relationship between the variables in the study;

***H_1**: There is a positive significant relationship between procurement Staff competency and implementation level of public procurement regulations in the devolved system of governments in Kenya.*

According to the results shown in Table 4.23 of the regression analysis results, staff competency had coefficients (β=0.648, t=5.512, p=0.000). The significant value obtained was less than 0.05 set by the study, similar to the t-value which was more than 1.96 at 5% significant. The result therefore implies that there was a positive significant relationship between procurement staff competency and implementation level of procurement regulatory in the devolved government. Based on these findings, the study rejects the null hypothesis and therefore confirm that there is a positive significant relationship between staff competency and level of implementation of public procurement regulations in devolved governments in Kenya. Using the aggregate scores for items in the staff competence scale and level of implementation of procurement regulations scale, Pearson correlation was run to examine if a significant relationship existed between the two variables on the sample data at 95% confidence level.

The correlation output indicates that there was a moderate positive association (r=0.853, t=10.602) between staff competence and level of implementation of procurement regulations. The results further indicated that staff competencies is statistically significant (p=.00<0.05) against the indicators of level of implementation of public procurement regulations; implying that there is a positive significant relationship of the variables leading to rejection of the null hypothesis and acceptance of the alternative hypothesis, and hence the research findings conclude that there is a positive significant relationship between procurement staff competencies and level of implementation of public procurement regulations.

The findings concur with those of Hamza, Gerbi, and Ali, (2016) who found a significant relationship between staff competence and procurement performance. The results also agree with those of Mola and Alemu (2018) whose study focused on the effect of staff competence on procurement efficiency. The study found out that employee competence had strong effect on the procurement efficiency. Devolved governments have adopted e-procurement to improve the efficiency of procurement processes. It imperative for the governments to provide continual employee training so as to equip them with adequate competencies that will increase the public procurement

regulations compliance and also curb the flaws associated with execution of the procurement procedures. A majority of the county government official have been indicted lately because of numerous flaws reported in the counties' audit reports. The indictments are being associated with e-procurement (Integrated Financial Management System, IFMIS) that is under use in all the counties. This is a clear confirmation that there is need to equipment the procurement officers with adequate skills relating to the use of the technology.

H_2: *There is a positive significant relationship between supplier relationship management and implementation level of public procurement regulations in the devolved system of governments in Kenya.*

The findings as shown in table 4.23 of the regression analysis results indicate that, Supplier relationship management had coefficients (β=0.631, t=5.278, p=0.000). The significant value obtained was less than 0.05 set by the study, similar to the t-value which was more than 1.96 at 5% significance. The results therefore imply that there was a positive significant relationship between Supplier relationship management and level of implementation of public procurement regulations in the devolved governments. Based on these findings, the study rejects the null hypothesis and therefore confirm that supplier relationship management has a positive significant relationship on level of implementation of public procurement regulations in devolved governments in Kenya.

Using the aggregate scores for items in the supplier relationship management scale and procurement regulations implementation scale, Pearson correlation was run to examine if a significant relationship existed between the two variables on the sample data at 95% confidence level. The regression output indicated that there was a moderate positive association of (r =0.829, t=9.596) between supplier relationship management and level of implementation of public procurement regulations. The results further indicated that supplier relationship management is positively significant (p=.00< 0.05) against the indicators of procurement regulations implementation. This implies that there is a positive significant relationship among the variables leading to rejection of the null hypothesis and acceptance of the alternative hypothesis, and hence the research findings

concluded that there is a positive significant relationship between supplier relationship management and procurement regulations implementation. The study finding implies that high level of supplier relationship management relates to high level of procurement regulations implementation. To raise the levels of procurement regulatory implementation in counties, procurement officers must enhance their relationships with the suppliers by adopting suitable supplier relations management practices. To realize the full benefits of strategic sourcing and outsourcing, county governments need to build the capabilities required to effectively manage the resulting supply base by deploying SRM best practices. A number of county governments are in conflict with their suppliers due to delayed payment and this explains why the level of relationships between supplier and procurement officers was found to be moderate.

H_3: *There is a positive significant relationship between Inventory management and implementation level of public procurement regulations in the devolved system of governments in Kenya.*

According to the findings shown in table 4.23 of the regression analysis results indicate that, Inventory management had coefficients (β=0.679, t=5.994 and p=0.000). The significant value obtained was less than 0.05 set by the study, similar to the t-value which was more than 1.96 at 5% significance level. The result therefore implies that there was a positive significant relationship between inventory management and level of implementation of public procurement regulations in the devolved governments. Based on these findings, the study rejects the null hypothesis and therefore confirm that inventory management have a positive significant influence on level of implementation of public procurement regulations in devolved governments in Kenya.

Using the aggregate scores for items in the inventory management scale and procurement regulatory implementation scale, Pearson correlation was run to examine if a positive significant relationship existed on the two variables on the sample data at 95% confidence level. The results indicated a moderate association between the two factors, *(r* =0.868, *t*= 11.315 and *p000* <0.05.) This suggested that high levels of inventory management were correlated to high levels of procurement regulations implementation.

Poor inventory management would therefore form inadequate implementation of procurement regulations. These findings are in line with a finding by Palevich (2012) who contended that there is a positive influence of procurement inventory techniques on procurement performance.

H_4: *There is a positive significant relationship between Procurement audit practices and implementation level of public procurement regulations in the devolved system of governments in Kenya.*

In table 4.23 of the regression analysis results indicated that procurement audit practices have coefficients of (β=0.532, t=4.073, p=0.000). The significant value obtained was less than 0.05 set by the study, similar to the t-value which was more than 1.96 at 5% significance level. The result therefore implies that there was a positive significant effect of procurement audit practices on level of implementation of public procurement regulations in the devolved governments. Based on these findings, the study rejects the null hypothesis and therefore confirm that procurement audit practices have a positive significant effect on level of implementation of public procurement regulations in devolved governments in Kenya.

Using the aggregate scores for items in the procurement audit practices scale and procurement regulations implementation scale, Pearson correlation was run to examine if a positive significant relationship existed on the two variables on the sample data at 95% confidence level. The results indicates a moderate positive correlation of procurement audit on procurement regulations implementation, which was statistically significant (r = 0.803, t=8.730, p = 0.000). This implied that high levels of audit activities are related to high levels of regulation implementation when procuring goods and services. The findings confirm those of Manasseh (2007) which perceived public procurement regulation as one of the important factors in conducting effective public procurement audit. The audit of the county procurement processes is meant to encourage competition, innovative ideas and solutions while respecting trade agreement obligations. Hence, increased audits would enhance not only compliance with the regulations but also reduce wastages, improve the efficiency of the process as well as

encouraging accountability in the counties. Nthumbi and Mutiso, (2018) argued that adopting auditing standards place a strong emphasis on strengthening internal controls and ensuring compliance with laws and regulations. The results are in the table 4.23 bellow and also in table 4.24 at the Appendecies II describing the statistical Test of Hypotheses.

Table 4.22: Hypotheses Testing

Hypothesis	Beta	T-value	P-value	Conclusion
H_1 Procurement Staff competency has a positive significant influence on level of implementation of PP regulations.	0.648	5.516	0.000	Reject $H_0$1
	*Z.853	10.602	0.000	Reject $H_0$1
H_2 Supplier relationship management has a positive significant influence on level implementation of PP regulations.	0.631	5.278	0.000	Reject $H_0$2
	*Z.829	9.596	0.000	Reject $H_0$2
H_3 Inventory management has a positive significant influence on level implementation of PP regulations.	0.679	5.994	0.000	Reject $H_0$3
	*Z.868	11.315	0.000	Reject $H_0$3
H_4 Procurement audit practices has a positive significant influence on level implementation PP regulations.	0.532	4.073	0.000	Reject $H_0$4
	*Z.803	8.730	0.000	Reject $H_0$4

4.6 Diagnostic Tests

The study carried a diagnostic test to establish the accuracy, how reliable, valid and acceptable the collected data is and capable of inferring the results to the population. The diagnostic tests conducted included Multi-Collinearity Test, Linearity Test, Autocorrelation Test, Heteroscedasticity Test, Normality Test on the Dependent Variable, Correlation Analysis test. In addition, the diagnostic tests were carried to a certain the validity of the regression analysis. The arrangement of this section begins with the Sample Adequacy Test for the pilot study, Normality Test, Histograms for Normality Test, Normality using Q-Q plot, Outliers Test, Collinearity Diagnostic Test,

Multicollinearity, Autocorrelation tests, Heteroscedasticity and Homoscedasticity and Linearity Test**.**

4.6.1 Normality Test

Normality test was conducted using Shapiro-Wilk test & Kolmogorov, Skewness and Kurtosis Test for Normality, Histograms for Normality Test and Normality using Q-Q plot. The normality test that was carried was at 95% confidence interval for mean where the p-value was compared to a certain the rejection of the null hypothesis indicating the data was normally distributed (greater than 0.05) or not (less than 0.05). The findings denote that procurement practices (variables) were normally distributed in the study. Procurement Staff Competency had a Kolmogorov-Smirnov p-vale .200 and Shapiro-Wilk p-value 0.4474, Supplier Relationship Management had a Kolmogorov-Smirnov p-value .200 and Shapiro-Wilk p-value 0.066, Inventory Management had a Kolmogorov-Smirnov p-value 0.084, and Shapiro-Wilk p-value 0.179 and Procurement Audit practices had a Kolmogorov-Smirnov p-value .200, and Shapiro-Wilk p-value 0.803, Monitoring & Evaluation had a Kolmogorov-Smirnov p-value .200 and Shapiro-Wilk p-value 0.803, Implementation level of Public Procurement Regulations had a Kolmogorov-Smirnov p-value .200 and Shapiro-Wilk p-value 0.732 as shown in Table 4.25.

4.6.2 Kolmogorov- Smirnov and Shapiro Wilk test for Normality

Normality of a data set was also to be done or tested using Kolmogorov- Smirnov and Shapiro Wilk for all the variables which were under consideration. Kolmogorov-Smirnov and Shapiro Wilk compare the scores in the samples and check whether they have the same mean or standard deviation (Sarstedt and Mooi, 2015). The findings for Kolmogorov- Smirnov showed that, the p- values were greater than 0.05 for all the variables i.e. Procurement Staff Competency, Supplier Relationship Management, Inventory Management, Procurement Audit practices Monitoring & Evaluation and Implementation level of Public Procurement Regulations; indicating that the

distributions were normally distributed. Shapiro-Wilk test results also showed that five variables were normally distributed. The details of the findings are shown in Table 4.25.

Table 4.23: Kolmogorov-Smirnov and Shapiro-Wilk

Variables	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	d.f	P-value	Statistic	d.f	P-value
Procurement Staff Competency	.068	44	.200*	.986	44	.474
Supplier Relationship Management	.072	44	.200*	.974	44	.066
Inventory Management	.088	44	.084	.980	44	.179
Procurement Audit practices	.063	44	.200*	.991	44	.803
Monitoring & Evaluation	.063	44	.200*	.991	44	.803
Implementation level of Public Procurement Regulations	.069	44	.200*	.990	44	.732

*. This is a lower bound of the true significance.

4.6.3 Skewness and Kurtosis Test for Normality

It is very important to find out or establish if the distribution of the data is normal before the analysis is conducted fully. In this study, the how well the distribution was investigated using various techniques. In this case, to approximate the normality, skewness and kurtosis was employed. Skewness measures the deviation of distribution from symmetry and Kurtosis measures pickiness of the distribution (Ming'ala, 2002). Skewness and kurtosis values are imputed on the basis of moments. The values of Skewness and Kurtosis should be zero if the data is normally distributed otherwise the data is said to be skewed or highly peaked but the acceptable range of values is -2 and +2 (Field, 2009). In this study skewness and kurtosis values were summarized as follows in Table 4.26 that shows the results and the finding, it was clear that all the variables were within acceptable range of skewness. In this case values between -2 and +2 are considered normal. In addition, Kolmogorov-Smirnov and Shapiro-Wilk tests can be conducted to test whether the data set is normally distributed according to (Sarstedt & Mooi, 2015).

Table 4.24: Skewness and Kurtosis

Variable	Distribution	Statistic	Std. Error	Conclusion
Procurement Staff Competency	Skewness	-.149	.254	Normally Distributed
	Kurtosis	-.298	.503	
Supplier Relationship Management	Skewness	.330	.254	Normally Distributed
	Kurtosis	-.450	.503	
Inventory Management	Skewness	.465	.254	Normally Distributed
	Kurtosis	-.023	.503	
Procurement Audit practices	Skewness	.293	.254	Normally Distributed
	Kurtosis	-.019	.503	
Monitoring & Evaluation	Skewness	.012	.254	Normally Distributed
	Kurtosis	-.538	.503	
Implementation level of Public Procurement Regulations	Skewness	.097	.254	Normally Distributed
	Kurtosis	-1.298	.503	

4.6.4 Histograms for Normality Test

Histograms are a good way of getting an instant picture of the distribution of data (Field, 2009). Although in most cases it is assumed that in multiple linear regressions the residuals are normally distributed with mean zero and variance sigma ($X \sim N(0, \delta^2)$. Therefore, it is a good idea before drawing final conclusions, to review the distributions of major variables of interest (Ming'ala, 2002). Therefore, a histogram was also employed in the study to test the normality of the dependent variable as shown in Figure 4.4 since t- test, regression and ANOVA are based on the assumption that the data were sampled from a Gaussian distribution (Indiana, 2011).

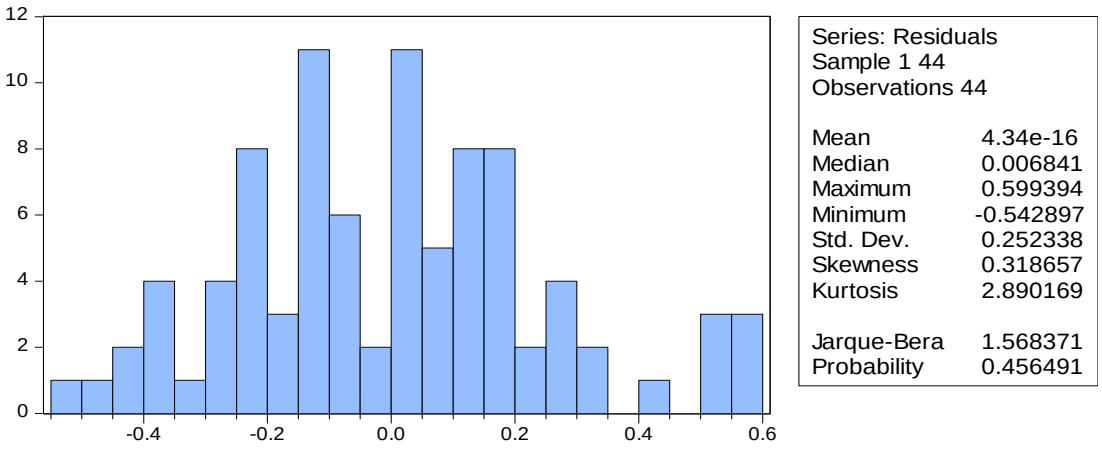

Figure 4.1: Histograms for Normality Test

4.6.5 Normality Using Q-Q Plot

In addition to the above-mentioned test, normality of the data was also tested using Q-Q plot for the dependent variable (Implementation level of Public Procurement Regulations in the devolved governments in Kenya) based on the finding as shown in Figure 4.2, it was clear that the majority of the observed values were falling along a straight line. This therefore means the variable (Implementation level of Public Procurement Regulations) was normally distributed. These result were consistent with the earlier findings based on skewness and Kurtosis test Kolmogorov- Smirnov and Shapiro Wilk test.

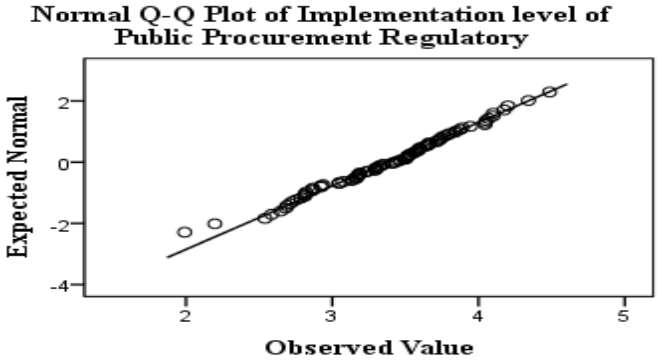

Figure 4.2: Normal Q-Q plot of Implementation Level of Public Procurement Regulations

4.6.6 Collinearity Diagnostic Test

In circumstances where the eigenvalue is greater than the others, then the uncentred cross products matrix can be highly influenced by small changes in the independent/explanatory variables or outcome. In cases where eigenvalues are fairly similar, then the model obtained is likely to be unchanged by small changes in measured variables (Myers, 1990). According to the study results both models had eigenvalues fairly greater than the rest indicating that the models obtained were likely to be changed by small changes in measured variable. Besides that, the condition index is another way of expressing eigenvalues and they represent square root ratio of the largest eigenvalue to the eigenvalue of interest. The condition index will always be 1 for the dimension with the largest eigenvalue, however, the condition index value can be larger than 1. Large values may indicate that collinearity exist but it is also worth noting that there is no specific value or rule about how large the condition index value should be to indicate collinearity problems. According to the findings in Table 4.27 the model had final condition index values 49.280. The values for dimensions in each model were the same with each other and therefore there was no collinearity.

It is also worth noting that collinearity may be detected looking for Predictors that have high variance proportions on the same small eigenvalues. High variance proportions will

indicate that the variances of their regression coefficients are dependent. In this study 99% of the variance in regression coefficient of Procurement Staff Competency was associated with eigenvalue in dimension number 5, 39% of the variance in the regression coefficient of Supplier Relationship Management was associated with eigenvalue in dimension 2, 72% of the variance in the regression coefficient of Inventory Management was associated with eigenvalue in dimension 4, 73% of the variance in the regression coefficient of Procurement Audit practices was associated with eigenvalue in dimension 3. This clearly indicated that there was no dependency between the five predictor variables for model.

Table 4.25: Collinearity Diagnostics Test

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	X_1	X_2	X_3	X_4
1	1	4.984	1.000	.00	.00	.00	.00	.00
	2	.006	28.773	.68	.00	.39	.00	.03
	3	.004	33.793	.09	.00	.31	.00	.73
	4	.004	35.324	.17	.01	.12	.72	.14
	5	.002	54.460	.07	.99	.18	.28	.10

a. Dependent Variable: Y

4.6.7 Correlation Analysis of Independent Variables

Correlation analysis clearly shows the strength of the relationship between variables. In this study, Pearson product moment correlation coefficient was used to establish the relationship between the predictor/explanatory variables. Correlation analysis gives the relationship between variables. In this study, Pearson product moment correlation coefficient (r's) was used to establish the relationship between the independent variables. The correlation coefficients are summarized in Table 4.28. The findings also revealed that there was a significant relationship between the independent variables since all the p-values were less than 0.01. Even though there was a significant relationship between the independent variables, there was no problem of

multicollinearity among the variables since all the r values were less than 0.8 as suggested by (Sila, 2014).

Table 4.26: Correlation Analysis of Independent Variable without Moderator

		Procurement Staff Competency	Supplier Relationship Mgt.	Inventory Mgt.	Procurement Audit Practices
	Pearson Correlation	1			
X_1	P-value (2-tailed)				
	N	44			
	Pearson Correlation	.718**	1		
X_2	P-value (2-tailed)	.000			
	N	44	44		
	Pearson Correlation	.723**	.580**	1	
X_3	P-value (2-tailed)	.000	.000		
	N	44	44	44	
	Pearson Correlation	.688**	.593**	.574**	1
X_4	P-value (2-tailed)	.000	.000	.000	
	N	44	44	44	44

**. Correlation is significant at the 0.01 level (2-tailed).

4.6.8 Correlation Analysis of Independent Variable with Moderator

Similarly Correlation analysis was performed in the presence of moderator (monitoring and evaluation) based on Pearson product moment correlation coefficient (*r's*). Again the findings were summarized in Table 4.29. From the findings it was noticed that there was some significant relationship between the predictor variables in the presence of moderator since all the p-values were less than 0.01. Despite the significant relationship between the independent variables there was no problem of multicollinearity among the variables since all the r values were less than 0.8 as suggested by (Sila, 2014).

Table 4.27: Correlation Analysis of Independent Variable with Moderator

		Procurement Staff Competency*z	Supplier Relationship Mgt*z	Inventory Mgt*z	Procurement Audit practices*z
Procurement Staff Competency*Z	Pearson Correlation	1			
	P-value (2-tailed)				
	N	44			
Supplier Relationship Management*Z	Pearson Correlation	.632**	1		
	P-value (2-tailed)	.000			
	N	44	44		
Inventory Management*Z	Pearson Correlation	.623**	.521**	1	
	P-value (2-tailed)	.000	.000		
	N	44	44	44	
Procurement Audit practices*Z	Pearson Correlation	.721**	.734**	.725**	1
	P-value (2-tailed)	.000	.000	.000	
	N	44	44	44	44

**. Correlation is Significant at the 0.01 level (2-tailed). Z= Monitoring & Evaluation

4.6.9 Multicollinearity

Multicollinearity is a condition which occur when the independent variables within the study are related with each other. In this study, multicollinearity was tested using Variance Inflation Factor (VIF) which is a reciprocal of tolerance. Some scholars suggest that a VIF value more than 10 (VIF $\geq$ 10) indicate that there is a problem of multicollinearity. According to Montgomery (2001) the threshold value for existence of multicollinearity is 10 and above with corresponding tolerance statistic values below 0.1 indicating a serious problem while those below 0.2 indicating a potential problem. The results in Table 4.30 indicate that the Variance Inflation Factor (VIF) value for procurement staff competency was established without the moderator to be 3.332 while tolerance statistic value reported as 0.300, and in the presence of the moderator, tolerance statistic value is 0.198 while (VFI) value is 5.062, supplier relationship management (VIF) value in the absence of the moderator was found to be 2.166 while its tolerance statistic value was established to be 0.462 and in the presence of the moderator, (VFI) value was 5.693 and tolerance statistic value was 0.176. The VIF value

with moderator for Inventory Management was established to be 2.169 while its tolerance statistic was reported to be 0.461, and with the moderator the VFI value was 5.314, its tolerance statistic value 0.188. The VIF value for Procurement Audit practices with the moderator was established to be 2.010 with tolerance statistic value of 0.497 was reported and with the moderator the VFI value was 9.979 while tolerance statistic value was 0.100.

The VIF value of Implementation level of PP Regulatory without the moderator 3.332 while the tolerance statistic value was 0.300, and the VFI value in the presence of the moderator 5.062 and the tolerance statistic value of 0.198 was reported. These are also displayed in table 4.33. Based on these results, it was concluded that there was no problem of multicollinearity between predictor variables. It is worth noting that presence of multicollinearity will always lead to bias estimates of the model parameter thus giving wrong results.

Table 4.28: Multicollinearity Test

Model	Collinearity Statistics No Moderator		Collinearity Statistics Presence of Moderator	
	Tolerance	VIF	Tolerance	VIF
Procurement Staff Competency	.300	3.332	.198	5.062
Supplier Relationship Management	.462	2.166	.176	5.693
Inventory Management	.461	2.169	.188	5.314
Procurement Audit practices	.497	2.010	.100	9.979
Implementation level of PP Regulations	.300	3.332	.198	5.062

4.6.10 Test for Autocorrelation (Independent of Errors)

In regression model, one of the assumption is that the error terms are not related with each other that is serial correlation does not exist (error terms are independent of each other). In this study, the assumption was checked and tested using the Durbin-Watson test. Durbin-Watson tests for serial correlations between error terms is a tests whether the adjacent residuals are correlated. Durbin Watson estimator can be expressed as;

$$d_w = \sum_{i=1}^{n} (e_i - e_{i-1}) \Big/ \sum_{i=1}^{n} e^2$$

A value of 2 of Durbin Watson means the residuals are uncorrelated, a value greater than 2 indicates a negative correlation between adjacent residuals, whereas a value below two indicates a positive correlation (Field, 2009). However, Durbin-Watson statistical values less than 1 or greater than 3 are definitely cause for concern. In this study the Durbin-Watson statistical values were ranging between 1.653143 and 2.358547 which was within the acceptable limits hence there was no problem of autocorrelation for all models in the presence of moderator and absence of moderator. Table 4.31 shows the results.

Table 4.29: Test for Independent of Errors

Model	$Y = \beta_0 + \beta_1 x_1$	$Y = \beta_0 + \beta_1 x_2$	$Y = \beta_0 + \beta_1 x_3$	$Y = \beta_0 + \beta_1 x_4$	**Overall Regression Model**
Durbin Watson value	2.040348	2.331229	1.845870	2.113103	2.249294
Durbin Watson *Z	2.051836	2.358547	1.653143	2.141422	2.175578

Predictors: Procurement Staff Competency (x1), Supplier Relationship Management (x2), Inventory Management (x3), Procurement Audit practices (x4) Monitoring & Evaluation (z), Dependent Variable: Implementation level of Public Procurement Regulations (Y).

4.6.11 Heteroscedasticity and Homoscedasticity

Heteroscedasticity in a study normally occurs when the variance of the errors varies across observation (Long and Ervin, 2000). Breusch-Pagan was used to test the null hypothesis that the error variances are all equal versus the alternative that the error variances are a multiplicative function of one or more variables. There were two versions of Breusch-Pagan tests which were conducted that is Breusch-Pagan tests and Breusch-Pagan tests with robust variant. Breusch-Pagan tests the null hypothesis that heteroscedasticity is not present which imply that Homoscedasticity is present. If *P*-

value is less than 0.05, reject the null hypothesis. A large chi-square value greater than 9.22 would indicate the presence of heteroscedasticity (Sazali, Hashida, Jegak & Raduan, 2010). In this study, the chi-square value resulting from each regression model where every independent variable was considered individually as model indicated that heteroscedasticity was not a problem for the entire models. The null hypothesis tested was that variance is Constant versus the alternative that variation was not constant. The Variables were: Procurement Staff Competency, Supplier Relationship Management, Inventory Management, Procurement Audit practices and Monitoring & Evaluation. Table 4.32 in the Appendix VIII Breusch-Pagan and white test for Heteroscedasticity, shows the rest of the finding. The overall, the chi-square a value resulting from overall regression also indicates that heteroscedasticity was absent hence variance was said to be constant.

4.6.12 Linearity Test

To establish out whether there was linear effect of Procurement Staff Competency on Implementation level of Public Procurement Regulations, Pearson moment's correlation coefficients was employed as suggested by (Cohen, West and Aiken, 2003) and the results are presented on table 4.33. The findings indicate that the variable Procurement Staff Competency had a positive significant effect on Implementation level of Public Procurement Regulations as indicated by a correlation coefficient value of 0.648^{***}. This suggests that there was a linear positive significant effect of Procurement Staff Competency on Implementation level of Public Procurement Regulations. Which implies that an increase in Procurement Staff Competency would lead to a linear increase in Implementation level of Public Procurement Regulations in the devolved governments in Kenya.

In addition to that, the test of linearity effect of Supplier Relationship Management on level of implementation of public procurement regulations in devolved governments in Kenya, was conducted and the results indicate that the variables Implementation level of Public Procurement Regulations and Supplier Relationship Management had a positive

relationship as confirmed by a correlation coefficient value of $0.631^{***.}$ Similar results show that there was positive relationship between Implementation level of Public Procurement Regulations and Inventory Management this was backed by correlation coefficient value of $0.679^{**.}$ Lastly, the results also suggest that there was a strong positive relationship between Procurement Audit practices and the dependent variable as supported by a correlation coefficient of 0.536. This implies that an increase in Procurement Audit practices would result in a linear increase in Implementation level of Public Procurement Regulations.

Table 4.30: Linearity Test Between Dependent Variable and Independent Variables Using Correlations Coefficients.

Implementation level (Y) Procurement Staff Competency			
Implementation level of Public Procurement Regulations (Y)	Pearson Correlation	1	.648**
	Sig. (2-tailed)		.000
	N	44	44
Procurement Staff Competency	Pearson Correlation	.648**	1
	Sig. (2-tailed)	.000	
	N	44	44
Implementation level (Y) Supplier Relationship Management			
Implementation level of Public Procurement Regulations (Y)	Pearson Correlation	1	.631**
	Sig. (2-tailed)		.000
	N	44	44
Supplier Relationship Management	Pearson Correlation	.631**	1
	Sig. (2-tailed)	.000	
	N	44	44
Implementation level (Y) Inventory Management			
Implementation level of Public Procurement Regulations (Y)	Pearson Correlation	1	.679**
	Sig. (2-tailed)		.000
	N	44	44
Inventory Management	Pearson Correlation	.679**	1
	Sig. (2-tailed)	.000	
	N	44	44
Implementation level (Y) Procurement Audit practices			
Implementation level of Public Procurement Regulation (Y)	Pearson Correlation	1	.532**
	Sig. (2-tailed)		.000
	N	44	44
Procurement Audit practices	Pearson Correlation	.532**	1
	Sig. (2-tailed)	.000	
	N	44	44

**. Correlation is significant at the 0.01 level (2-tailed).

4.6.13 Scatter Plot between Dependent and Independent Variables

Besides product moment correlation coefficient, scatter plot between Implementation level of Public Procurement Regulations and the independent variables was also conducted to test linearity and the result in figure 4.4 clearly suggested that there was

some linear relationship between level of Implementation of Public Procurement Regulations and the explanatory variables.

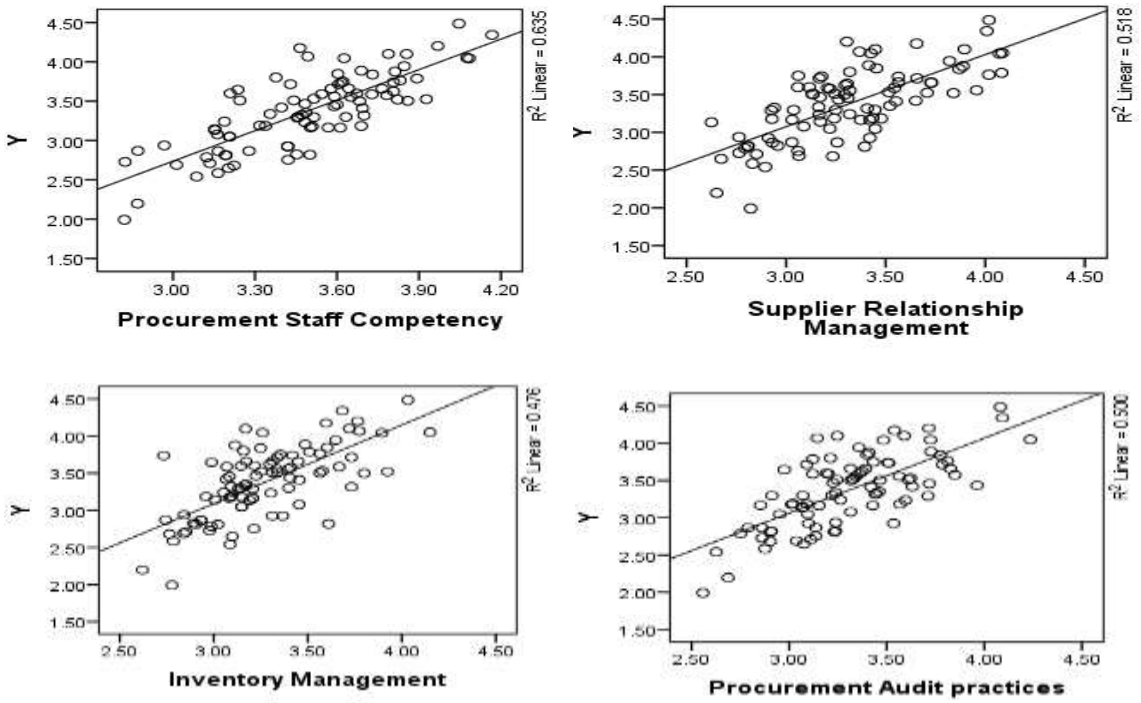

Figure 4.3: Scatter Plot between Implementation Level of Public Procurement Regulations and the Independent Variables

4.7 Regression Analysis

The regression analysis was carried out to determine the relationship between the independent variables and the dependent variable. A simple regression was conducted involving running the least square regression model and interpreting the R^2 values to test the proportion of the variance in the dependent variable from the independent variable and F values to measure coefficients and the suitability of the model confirm or reject the research hypotheses. The strength of the relationship was measured using correlation coefficient (R) or coefficient of determination R- square. The R-square is a value which shows how well the model fits the data and R- square value which is nearer to 1.0 suggest that the dependent variable entirely depends on the independent variables while

a value nearer to 0 indicates no relationship at all between the explanatory variables and the dependent variable (Ming'ala, 2002). The F- test was used to determine the level of significance of the model by comparing the F value with the overall level of significance and P-values.

4.7.1 Regression Analysis for Procurement Staff Competency and Implementation Level of Public Procurement Regulations without Moderator

The study was to analyse the relationship between procurement staff competency and level of implementation of public procurement regulations in the devolved system of governments in Kenya. The null hypothesis states that there was no significant relationship between procurement staff competency and implementation of public procurement regulatory framework in devolved governments in Kenya against the alternative that there was a positive significant relationship between procurement staff competency and implementation of public procurement regulations in devolved governments in Kenya.

Table 4.34 shows the regression analysis findings between Implementation level of Public Procurement Regulations and procurement staff competency. From the table, the value of R- square value was 0.420 implying that 42.0% of Implementation level of Public Procurement Regulations was explained by procurement staff competency with no moderator. Besides that, the fitness of the model was also indicated by F-Statistics value of 30.382 with no moderator. These findings, implied that there was a significant relationship between Procurement Staff Competency and implementation level of public procurement regulations in devolved governments in Kenya. This means that Procurement Staff Competency significantly affects Implementation level of public procurement regulations in devolved governments in Kenya.

Similarly based on the same regression Table 4.34, t- test was also used to test the relationship between the predictor variable procurement staff competency and implementation level of public procurement regulatory and there was significant

relationship between the two variables with p-value= 0.000000 < 0.05 for the model. The regression equations between Implementation level of public procurement regulations and procurement staff competency for the model can be expressed as; Y= -.379 + 1.070X_1 without moderator. The models indicated that for every unit of procurement staff competency, the value of implementation of public procurement regulations in devolved governments in Kenya changes by 1.070 in the absence of moderator.

Table 4.31: Regression Analysis for Procurement Staff Competency and Implementation Level of Public Procurement Regulations without Moderator.

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.648[a]	.420	.406	.34722	.648[a]

a. Predictors: (Constant), Procurement Staff Competency and Implementation level of Public Procurement Regulations.

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
1	Reg.	3.663	1	3.663	30.382	.000[b]
	Residual.	5.064	42	.121		
	Total	8.727	43			

a. Dependent Variable: Implementation level of Public Procurement Regulations
a. Predictors: (constant), Procurement Staff Competency

Overall Regression Coefficients

	Un Std Coeff		Std Coeff	T	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	-.379	.677		-.560	.579		
Procurement Staff Competency	1.070	.194	.648	5.512	.000	1.000	1.000

4.7.2 Regression Analysis for Procurement Staff Competency and Implementation Level of Public Procurement Regulations with Moderator.

From the Table 4.35, the value of R- square value was 0.728 implying that 72.8% of Implementation level of Public Procurement Regulations was explained by procurement

staff competency with moderator. The fitness of the model was also indicated by F-Statistics value of 112.404 with p-value of 0.00000<0.05 with moderator. The regression equations between Implementation level of public procurement regulations and procurement staff competency for the model with the moderator can be expressed as; $Y= -1.089+ 1.286X_1$. The models indicated that for every unit of procurement staff competency, the value of implementation of public procurement regulations in devolved governments in Kenya changes by an increase of 1.286 in the presence of moderator.

These results suggest that the model improved more in the presence of moderator and they were also supported by the descriptive analysis. Based on these preliminary findings, null hypothesis, was rejected and alternative hypothesis was accepted. The study findings were supported by Ndumbi and Okello (2014) who agreed that stability of procurement process may be realized through skilled and knowledgeable staff on their Procurement procedures & regulations to procure items and services. The results were also supported by Barsemoi, Mwangangi and Asienyo (2014) who argued that improvement of procurement staff competence in a procurement function increases procurement productivity which has a positive impact on company's service delivery. This implies that a unit increase of procurement staff competency, the value of implementation level of public procurement regulations in devolved governments in Kenya changes by 1.286. It was therefore, concluded that Procurement Staff Competency had significant positive influence on Implementation level of public procurement regulatory framework in devolved governments in Kenya.

Table 4.32: Regression Analysis for Procurement Staff Competency and Implementation Level of Public Procurement Regulations with Moderator.

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.853[a]	.728	.722	.23773	2.019

a. Predictors: (Constant), Procurement Staff Competency

Analysis of Variance

TEx Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
	Reg.	6.353	1	6.353	112.404	.000[b]
Dicu1	Residual.	2.374	42	.057		
	Total	8.727	43			

a. Dependent Variable: Implementation level of Public Procurement Regulations
b. Predictors: (constant), Procurement Staff Competency*Z

Overall Regression Coefficients

	Un Std Coeff		Std Coeff	T	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	-1.089	.420		-2.597	.013		
Procurement staff Competency*Z	1.286	.121	.853	10.602	.000	1.000	1.000

4.7.3 Regression Analysis for Supplier Relationship Management and Implementation Level of Public Procurement Regulations without Moderator.

The study sought to establish the relationship between Supplier Relationship Management and implementation level of public procurement regulations in devolved governments in Kenya. The objective was tested using hypotheses that; there is no significant association between Supplier Relationship Management and implementation of public procurement regulations in devolved governments in Kenya. Analysis using Pearson's product moment correlation statistic to test the relationship between the Supplier Relationship Management and implementation of public procurement regulations in devolved governments in Kenya indicated that R -square value of 0.39921 was recorded showing that (39.91%) of implementation of public procurement regulatory framework in devolved governments in Kenya was explained by supplier

relationship management. F-statistics values was 27.858 with p-values 0.00000 which were less than 0.05 in the models in the absence of moderator. It was clear from the table that the regression coefficient model obtained in the absence of moderator and were as follows: $Y= 0.691+ 0.814X_2$. The models indicated that for every unit of supplier relationship management the value of implementation level of public procurement regulations framework in devolved governments in Kenya changes by 0.814 in absence of moderator.

Table 4.33: Regression Analysis for Supplier Relationship Management and Implementation Level of Public Procurement Regulations without Moderator.

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.631[a]	.399	.384	.35344	2.246

a. Predictors: (Constant), Supplier Relationship Management

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
	Reg	3.480	1	3.480	27.858	.000[b]
1	Residual.	5.247	42	.125		
	Total	8.727	43			

a. Dependent Variable: Implementation level of Public Procurement Regulations
c. Predictors: (constant), Supplier Relationship Management

Overall Regression Coefficients

	Un Std Coeff		Std Coeff	t	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	.691	.505		1.367	.179		
Supplier Relationship Mgt	.814	.154	.631	5.278	.000	1.000	1.000

4.7.4 Regression Analysis for Supplier Relationship Management and Implementation Level of Public Procurement Regulations with Moderator

In the presence of moderator, the R- square value increased to 0.687 showing that 68.7% of the dependent variable was explained by supplier Relationship Management. Table 4.39 shows the model findings. Other parts of Table 4.37 also suggest that simple linear regression fitted model fitted to the data was good and it was supported with p-values 0.00000 which were less than 0.05 and F-statistics values 92.087 respectively for both models in the presence of moderator. Statistically this meant that there was a significant relationship between supplier relationship management and Implementation of public procurement regulatory framework in devolved governments in Kenya and this relationship was much better in the presence of moderator**.** The regression coefficient model obtained in the presence of moderator $Y= -0.312+ 1.105X_2 *Z$ with corresponding p- values of 0.000000 being less than 0.05 significance level against t-statistics values. The models indicated that for every unit of supplier relationship management the value of implementation level of public procurement regulations in devolved governments in Kenya changes by 1.105 in the presence of moderator.

These finding obtained clearly shows that there was significant relationship between supplier relationship management on implementation of public procurement regulations in devolved governments in Kenya. The findings agreed with Kosgei & Gitau (2016) results that SRM have achieved relevance and enhanced supplier's positive relationship for better performance. These were also supported by Al-Abdallah and Aynman (2014) findings that buying firms improved the performance through relationship management with suppliers and that companies cannot only depend on the inner system to achieve higher productivity.

Table 4.34: Regression Analysis for Supplier Relationship Management and Implementation Level of Public Procurement Regulations with Moderator

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.829[a]	.687	.679	.25511	2.315

a. Predictors: (Constant), Supplier Relationship Management *Z

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
1	Reg	5.993	1	5.993	92.087	.000[b]
	Residual.	2.733	42	.065		
	Total	8.727	43			

a. Dependent Variable: Implementation level of Public Procurement Regulations
d. Predictors: (constant), Supplier Relationship Management*Z

Overall Regression Coefficients

	Un Std. Coeff		Std Coeff	t	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	-.312	.383		-.815	.420		
Supplier Relationship Management*Z	1.105	.115	.829	9.596	.000	1.000	1.000

4.7.5 Regression Analysis for Inventory Management and Implementation level of Public Procurement Regulations without moderator.

To find out if there was significance relationship between Inventory Management and Implementation level of Public Procurement Regulations, simple regression analysis was conducted. The null hypothesis tested was that; there was no significant relationship between Inventory Management and implementation of public procurement regulations in devolved governments in Kenya against the alternative that, there was significant relationship between Inventory Management and implementation of public procurement regulations in devolved governments in Kenya. The results obtained showed that R-square value was 0.461 implying that 46.1% of implementation of public procurement regulations in devolved governments in Kenya was explained by Inventory Management

in the absence of moderator which was monitoring and evaluation. This indicates that for every unit of inventory management the value of implementation level of public procurement regulations in devolved governments in Kenya changes by 1.000 in the absence of moderator.

Further details of the finding show that the F-statistic was 35.930 as presented in Table 4.38 with corresponding p-value of 0.000 which was less than 0.05 indicating that the model was significant showing that the model was sufficiently good as the null hypothesis that regression model between dependent variable and explanatory variable was not a good model and was rejected. The implication was that there was a significant relationship between Inventory Management and Implementation of public procurement regulations in devolved governments in Kenya. The regression equation between Inventory Management and implementation of public procurement regulations in devolved governments in Kenya in the absence of moderator (monitoring and evaluation) was expressed as; $Y=0.041+1.000X_3$ as shown in Table 4.39. The p value corresponding to t-statistics was 0.000 and this was also less than 0.05.

Table 4.35: Regression Analysis for Inventory Management and Implementation Level of Public Procurement Regulatory without Moderator.

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.679[a]	.461	.448	.33463	1.987

a. Predictors: (Constant), Inventory Management
b. Implementation level of Public Procurement Regulations.

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
	Reg	4.023	1	4.023	35.930	.000[b]
1	Residual.	4.703	42	.112		
	Total	8.727	43			

a. Dependent Variable: Implementation level of Public Procurement Regulations
e. Predictors: (constant), Inventory Management.

Overall Regression Coefficients

	Un Std Coeff		Std Coeff	T	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	.041	.553		.074	.941		
Inventory Management	1.000	.167	.679	5.994	.000	1.000	1.000

4.7.6 Regression Analysis for Inventory Management and Implementation level of Public Procurement Regulations with moderator

On the other hand, in the presence of moderator, the R- square value increased to 0.753 showing that 75.3% of the dependent variable was explained by Inventory Management. This clearly illustrate that the relationship between dependent variable and inventory management improved. In the presence of moderator F-statistic increased to 128.031 with p-value of 0.0000<0.05 indicating more and better model between dependent variable and inventory management. Similarly the regression equation between Inventory Management and implementation of public procurement regulations in devolved governments in Kenya in the presences of moderator (monitoring and

evaluation) was expressed as in the model as; $Y= -0.810+1.245X_3*Z$. The p-value of $0.000<0.05$ was recorded. This illustrate that for every unit of inventory management the value of implementation level of public procurement regulations in devolved governments in Kenya changes by 1.245 in the presence of moderator. The finding based on table 4.39 implies that there was significant relationship between Inventory Management and Implementation level of public procurement regulations in devolved governments in Kenya. These findings were supported by Kwadwo (2015) who concluded in his study that management of inventory significantly influences profitability of the organization. These were agreed by Mugarura (2013) who discussed the impact of management of inventory on performance of organizations in Uganda. He concluded that there existed a positive relationship between inventory management and company performance.

Table 4.36: Regression Analysis for Inventory Management and Implementation level of Public Procurement Regulations with Moderator.

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.868[a]	.753	.747	.22655	1.809

a. Predictors: (Constant), Inventory Management*Z
b. Implementation level of Public Procurement Regulations.

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
	Reg	6.571	1	6.571	128.031	.000[b]
1	Residual.	2.156	42	.051		
	Total	8.727	43			

a. Dependent Variable: Implementation level of Public Procurement Regulations
b.Predictors: (constant), Inventory Management*Z

Overall Regression Coefficients

	Un Std Coeff		Std Coeff	T	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	-.810	.369		-2.198	.033		
Inventory Management*Z	1.245	.110	.868	11.315	.000	1.000	1.000

4.7.7 Rregression Analysis for Procurement Audit Practices and Implementation Level of Public Procurement Regulatory Framework without Moderator.

The study sought to determine whether there exists relationship between the Procurement Audit practices and implementation of public procurement regulations in devolved governments in Kenya. Regression analysis was performed. From the finding an R- square value of 0.293 was recorded indicating that 29.3% of Implementation level of Public Procurement Regulations was explained by the Procurement Audit practices as shown on summery Table 4.40. The F-statistics indicates that the overall model was significant, that is, the independent variable, Procurement Audit practices was a good joint explanatory for Implementation level of Public Procurement Regulations with F-value of 16.593 with P- value of 0.000<0.05 showing that the model was fit when

moderator is absent. The regression equations between Procurement Audit practices and Implementation level of Public Procurement Regulations in the absence of moderator was; $Y= 0.759+ 0.782X_4$. Based on the model formed it was clear that for every unit of Procurement Audit practices, Implementation level of Public Procurement Regulations was increasing with 0.782 when moderator is absent.

Table 4.37: Regression Analysis for Procurement Audit Practices and Implementation Level of Public Procurement Regulations without Moderator

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.532[a]	.283	.266	.38592	2.147

a. Predictors: (Constant), Procurement Audit practices

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
1	Reg	2.471	1	2.471	16.593	.000[b]
	Residual.	6.255	42	.149		
	Total	8.727	43			

a. Dependent Variable: Implementation level of Public Procurement Regulations
b.Predictors: (constant), Procurement Audit practices.

Overall regression coefficients

	Un Std Coeff		Std Coeff	t	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	.759	.637		1.191	.240		
Procurement Audit practices	.782	.192	.532	4.073	.000	1.000	1.000

4.7.8 Regression Analysis for Procurement Audit Practices and Implementation Level of Public Procurement Regulations with Moderator

Similarly R- square value of 0.645 indicating that 64.5% of dependant variable was explained by procurement audit practices. F-value presented was 76.205 with P- value of 0.000<0.05 showing that the model was fit in the presence of moderator. The regression equations between Procurement Audit practices and Implementation level of Public

Procurement Regulations in the presence of moderator was; $Y=-0.637+ 1.193X_4$ respectively.

From the model formed, it was clear that for every unit of Procurement Audit practice, Implementation level of Public Procurement Regulations was increasing with 1.193 when moderator is present. The findings are illustrated in table 4.41. The findings further imply that there was a positive significant relationship between Procurement Audit practices and Implementation level of public procurement regulations in devolved governments in Kenya. These findings agreed with the Krivinsh and Vilks (2013) findings that procurement audit is to prevent fraud, provide confidence in relation to effective and efficient operations, to provide a reliable financial reporting, ensure compliance with the laws and regulations, tackle corruption issues and prevent future mistakes. Wambui (2015) agreed to the fact that good record management demonstrates compliance with the relevant standards. As was supported by Eregae, *et al.,* (2019) who argued in the study findings that accountability and transparency were found to be the catalyst binding resource allocation and public participation to propel service delivery. This was concurred to by Bashuna (2013) that accountability constitutes a central pillar of any public procurement system. Without transparent and accountable systems a lot of governments and public resources will go to waste.

Table 4.38: Regression Analysis for Procurement Audit Practices and Implementation Level of Public Procurement Regulations with Moderator

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.803[a]	.645	.636	.27171	2.316

a. Predictors: (Constant), Procurement Audit practices*Z and
b. Implementation level of Public Procurement Regulations.

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
1	Reg	5.626	1	5.626	76.205	.000[b]
	Residual.	3.101	42	.074		
	Total	8.727	43			

a. Dependent Variable: Implementation level of Public Procurement Regulations
c. Predictors: (constant), Procurement Audit practices*Z.

Overall Regression Coefficients

	Un Std Coeff		Std Coeff	T	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	-.637	.458		-1.392	.171		
Procurement Audit practices*Z	1.193	.137	.803	8.730	.000	1.000	1.000

4.8 Multiple linear Regression Analysis

Multiple linear regression model was conducted to find out if there was significance relationship between independent variables and the dependent variable. This section presents the results on the overall effects of all the independent/predictor variables which were: Procurement Staff Competency, Supplier Relationship Management, Inventory Management, Procurement Audit practices and Monitoring & Evaluation on the dependent variable which was implementation of public procurement regulations in devolved governments in Kenya. The proposed overall model without moderator for the study was;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta 5 X_5 + e$$

and with the moderator was

$$Y = \beta_0 + \beta_1 X_1 * Z + \beta_2 X_2 * Z \beta_3 X_3 * Z + \beta_4 X_4 * Z + \beta 5 X_5 * Z + e$$

Where:

Y = Implementation level of Public Procurement Regulations

X_1 = Procurement Staff Competency

X_2 = Supplier Relationship Management

X_3 = Inventory Management

X_4 = Procurement Audit practices

Z = Monitoring & Evaluation (Moderator)

4.8.1 Overall Summary Model, ANOVA & Regression Coefficients without Moderator

Analysis of the fitness of the model is presented in Table 4.42 and from the finding, it is clear that the overall model was satisfactory and this was supported by coefficient of determination also known as the R-square value of 0.598. The coefficient of determination value recorded above implies that all the explanatory/independent variables explains 59.8% of the variations in the dependent variable (implementation of public procurement regulations in the devolved governments in Kenya).

Based on the same table, the overall model fitness was also evaluated using F-statistics and from the results, it was clear that the overall regression model was significant. This was evident on the value of F statistic of 14.489 with corresponding to the p-value of 0.00000 which was far much less than the conventional probability of 0.05 level of significant chosen arbitrarily as the quantity of risk incurred in committing type 1 error that is rejecting the null hypothesis when it supposed to be accepted. The result clearly shows that the explanatory variables are good predictors of Implementation level of public procurement regulations in devolved governments in Kenya.

The same table 4.42 illustrates clearly the overall Regression Coefficients associating the dependent variable and the predictor variables and how significant each of the predictor variable affect the response variable that is the significant relationship between Implementation level of Public Procurement Regulations (dependent variable) and Procurement Staff Competency, Procurement Audit practices, Supplier Relationship Management and Inventory Management (predictor variables). From the finding, the overall model obtained was expressed as:

$$Y= -1.565771+0.558018X_1+ 0.313286X_2+0.262682X_3+ 0.331714X_4$$

From the model, it obvious that beta coefficients of -1.565771, 0.558018, 0.313286, 0.262682 and 0.331714 were recorded. These findings clearly indicate that a unit change in either of the variables will definitely lead to a positive increase in the value of implementation level of public procurement regulations in devolved governments in Kenya.

Table 4.39: Overall Summary Model, ANOVA & Regression Coefficients without Moderator

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.773[a]	.598	.557	.30001	2.388

a. Predictors: (Constant), Supplier Relationship Management, Procurement Staff Competency, Inventory Management, Procurement Audit practices and Implementation level of Public Procurement Regulations.

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
1	Reg	5.216	4	1.304	14.489	.000[b]
	Residual.	3.510	39	.090		
	Total	8.727	43			

a. Dependent Variable: Implementation level of Public Procurement Regulations
b.Predictors: (constant), Supplier Relationship Management, Procurement Staff Competency and Procurement Audit practices.

Overall Regression Coefficients

	Un Std Coeff		Std Coeff	T	Sig.	Collinearity Statistics	
	B	Std. Er	Beta			Tolerance	VIF
(Constant)	-1.566	.336		-4.662	.000		
Procurement Staff Competency	.558	.168	.344	3.319	.001	.300	3.332
Supplier Relationship Management	.313	.111	.236	2.830	.006	.462	2.166
Inventory Management	.263	.128	.171	2.048	.044	.461	2.169
Procurement Audit practices	.331	.115	.232	2.885	.005	.497	2.010

4.8.2 Overall Summary Model, ANOVA & Regression Coefficients with Moderator

Considering model 2 in which the overall regression model is estimated in the presence of moderator, it was again clear that the model became much better since there was an improvement in the value of coefficient of determination R-square value from 0.598 to 0.816 which was a positive increase of 0.218(21.8%) and the overall model became more significant since the F-statics value recorded was 43.199. The corresponding P-

value for this model was 0.00000 <0.05 indicating that the overall model was a good model as shown in table 4.43. Concerning the estimates of the coefficients as far as the model is concerned, it was also clear that model generated in the presence of moderator was given as follows:

$$Y= -1.338266+0.520413X_1*Z+ 0.294689X_2*Z+0.269771X_3*Z+ 0.338906X_4*Z$$

The beta coefficients were: -1.338266, 0.520413, 0.294689, 0. .240771 and 0. 339906 were recorded. The t-statistics based on this models also proves that every explanatory variable had a significant relationship with the dependent variable.

Table 4.40: Overall Summary Model, ANOVA and regression coefficients with moderator

Model	R	R Sq.	Adjusted R Sq.	Std. Error of the Estimate	Durbin-Watson
1	.903[a]	.816	.797	.20298	2.344

a. Dependent Variable: Implementation level of Public Procurement Regulations
b. Predictors: (Constant), Supplier Relationship Management*Z, Procurement Audit practices*Z, Procurement Staff Competency*Z, Inventory Management*Z
c. Moderator: Z (Monitoring & Evaluation)

Analysis of Variance

Model		Sum of Sq.	Df.	Mean Sq.	F	Sig.
1	Reg	7.120	4	1.780	43.199	.000[b]
	Residual.	1.607	39	.041		
	Total	8.727	43			

a. Dependent Variable: Implementation level of Public Procurement Regulations
b. Predictors: (constant), Supplier Relationship Management*Z, Inventory Management*Z, Procurement Staff Competency*Z and Procurement Audit practices*Z.
c. Moderator: Z (Monitoring & Evaluation)

Overall regression coefficients

	Un Std Coeff		Std Coeff			Collinearity Statistics	
	B	Std. Er	Beta	T	Sig.	Tolerance	VIF
(Constant)	-1.338	.198		-6.75	.000		
Procurement Staff Competency*Z	.520	.178	.357	2.93	.004	.100	9.979
Supplier Relationship Management*Z	.295	.119	.220	2.47	.015	.188	5.314
Inventory Management*Z	.240	.135	.164	1.78	.009	.176	5.693
Procurement Audit practices*Z	.339	.122	.241	2.77	.007	.198	5.062

a. Dependent Variable: Y (Implementation level of Public Procurement Regulations (Y)
b. Moderator: Z (Monitoring & Evaluation)

4.9 Optimal Model

The main purpose of the study was to examine the Management Practices and the Level of Implementation of Public Procurement Regulations in the Devolved Governments in Kenya. To achieve the study purpose, the study considered four independent variables

i.e. procurement staff competency, Supplier relationship management, Inventory management, Procurement Audit practices. Further the study sought to evaluate the moderating effect of monitoring and evaluation in promoting implementation level of public procurement regulations.

Based on the tests conducted in this study it was concluded that the independent variables X_1, X_2, X_3, and X_4 (Procurement Staff Competency, Supplier Relationship Management, Inventory Management and Procurement Audit practices and the moderator Monitoring & Evaluation) had an effect on the dependent variable Y (Implementation level of public procurement regulations in the devolved governments in Kenya). No variable was dropped therefore the model remained as was proposed with $R^2 = 0.598$ (59.8%) without moderator and $R^2 = 0.816$ (81.6%) with moderator meaning that the proposed study model was retained as the optimal model of study. The coefficient of determination value recorded above implies that all the explanatory/independent variables explains 59.8% to 81.6% of the variations in the dependent variable (level implementation of public procurement regulations in devolved governments in Kenya). These findings clearly indicate that a unit change in either of the variables will definitely lead to a positive increase in the value of implementation level of public procurement regulations in the devolved governments in Kenya.

The study revised the conceptual framework in Figure 4.7 to include the gained knowledge reflecting the ranking based on the strongest variables to the variables that are low in terms of influence on significance effect. From the findings of the first model without the presence of the moderator, procurement staff competence emerged as the most critical factor that significantly affects the implementation level of public procurement regulatory framework, followed by procurement audit practices then supplier relationship management, and finally Inventory management.

4.9.1 Optimal Model with the Moderator

With the presence of the moderator in the model, procurement staff competence as the most critical factor that significantly affects the implementation level of public procurement regulations, second was procurement audit practices, then supplier relationship management and finally Inventory management. Figure 4.7 below shows the ranking of the study variables. The study found out a positive significance relationship between procurement management practices and level of implementation of public procurement regulations in devolved government in Kenya.

Similarly, the moderating variable (monitoring and evaluation) was established to be an important moderator for the positive relationship between procurement management practices and implementation level of public procurement regulations in the devolved governments in Kenya. The study found out that in the presence of moderator, the model became much better since there was a much more positive improvement in the value of coefficients from R^2 = 0.598% (59.8%) without moderator and R^2 = 0.816% (81.6%) with moderator. The study findings indicate that, in order to improve the level of implementation of public procurement regulations in devolved governments, there is a high need to apply monitoring and evaluation across all the procurement management practices as it has a positive significant effect on the predictor variables in improving the level of implementation of public procurement regulations in devolved governments in Kenya. The study discovered that when the monitoring and evaluation is applied to procurement management practices selectively, there was an improvement in the value of coefficient of determination from 59.8% to 81.6% with the moderator. These findings clearly indicate that a unit change in either of the variables due to the presence of the moderator;

$$Y = \beta_0 + \beta_1 X_1 * Z + \beta_2 X_2 * Z \; \beta_3 X_3 * Z + \beta_4 X_4 * Z + e$$

$Y = -1.338266 + 0.520413 X_1 * Z + 0.294689 X_2 * Z + 0.269771 X_3 * Z + 0.338906 X_4 * Z$ will definitely lead to a positive increase in the value of Implementation level of public

procurement regulations in devolved system of governments in Kenya. Figure 4.7 below shows the new and adopted Optimal Model without the Moderator.

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

$Y = -1.565771 + 0.558018 X_1 + 0.313286 X_2 + 0.262682 X_3 + 0.331714 X_4$

Where:

Y = Implementation level of Public Procurement Regulations

X_1 = Procurement Staff Competency

X_2 = Procurement Audit practices

X_3 = Supplier Relationship Management

X_4 = Inventory Management

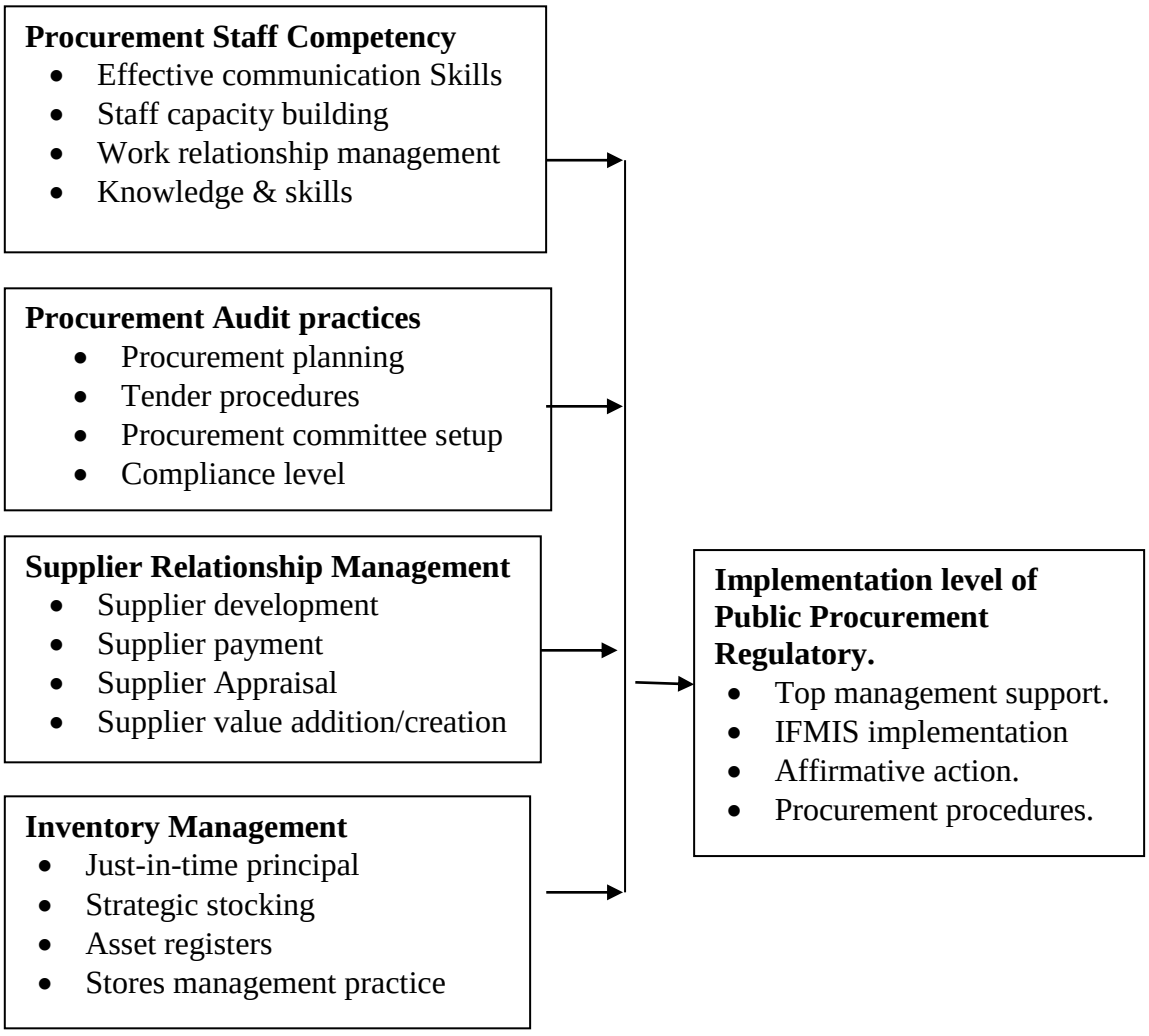

Figure 4. 4: New optimal Model without the moderator

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

A summary of the research findings, conclusions and recommendations of the study are presented in this chapter. Conclusions were based on researcher insights gained regarding study findings and guided by the research objectives. The recommendations were based on the findings and the limitation of the study. Recommendations are directed toward practitioners in the field, described in this study as program director and professionals interested in pursuing further research.

5.2 Summary of the Major Findings

The study sought to determine the influence of Management Practices and the Level of Implementation of Public Procurement Regulations in the Devolved system of Governments in Kenya. The researcher carried out a comparative study analysis between the various procurement management practices and their influence or relationships on the level of implementation of public procurement regulations in the devolved system of governments in Kenya. This study was guided by the specific objectives to analyse the relationship influence between procurement staff competency and level of implementation of public procurement regulations in the devolved system of governments in Kenya, to describe the relationship between supplier relationship management and level of implementation of public procurement regulations in the devolved system of governments in Kenya, to find out the relationship between inventory management and level of implementation of public procurement regulations in the devolved system of governments in Kenya, to determine the relationship between Procurement Audit practices and level of implementation of public procurement regulations in the devolved system of governments in Kenya, and to ascertain the

moderating effect of monitoring and evaluation on the level of implementation of public procurement regulations in devolved system of governments in Kenya.

5.2.1 Influence of Procurement Staff Competency on Level of Implementation of Public Procurement Regulations

The findings of the study indicate that there was a significant relationship between Procurement Staff Competency and implementation level of public procurement regulations in the devolved governments in Kenya. The regression analysis findings shows that the R- square value indicated that for every unit of procurement staff competency, the value of implementation level of public procurement regulations in devolved system of governments in Kenya changed in the absence of moderator, and R-square value with moderator of Implementation level of Public Procurement Regulations as was explained by procurement staff competency. This indicates that for every unit of procurement staff competency, the value of implementation level of public procurement regulatory framework in the devolved governments in Kenya increased when the moderator was introduced. The findings were found to be significant. This means that Procurement Staff Competency significantly affects positively Implementation level of public procurement regulations in the devolved system of governments in Kenya. This led to the rejection of the null hypothesis and accepts the alternative hypothesis that**;** HA: There is a positive significant relationship between procurement Staff competency and implementation level of public procurement regulations in the devolved system of governments in Kenya. The findings therefore, implied that procurement staff competency was an important factor in determining the level of implementation of public procurement regulations in the devolved system of governments in Kenya

5.2.2 Influence of Supplier Relationship Management on Level of Implementation of Public Procurement Regulations

The findings obtained indicated that there was significant relationship between supplier relationship management on level of implementation of public procurement regulations

in the devolved system of governments in Kenya. This was realized by a coefficient of R -square indicating that for every unit of supplier relationship management the value of implementation level of public procurement regulations in the devolved system of governments in Kenya changes in absence of moderator, and a coefficient of R -square with the moderator, showing that the level implementation of public procurement regulations in the devolved system of governments in Kenya as was explained by supplier relationship management. The findings were found to be positively significant. The findings indicated that for every unit of supplier relationship management the value of implementation level of public procurement regulations in the devolved system of governments in Kenya changes with a positive significance increase in the presence of a moderator. From the findings, the study therefore, rejects the null hypotheses and affirms the alternative hypotheses that; HA: There is a positive significant relationship between supplier relationship management and implementation level of public procurement regulations in the devolved system of governments in Kenya.

5.2.3 Influence of Inventory Management on Level of Implementation of Public Procurement Regulations

The study sought to evaluate the influence of inventory management on the level of implementation of public procurement regulations in the devolved system of governments in Kenya. The results obtained showed that R-square value without the moderator and R- square and with the moderator indicating that the level of implementation of public procurement regulations in the devolved system of governments in Kenya as was explained by Inventory Management. This clearly illustrate that the relationship between dependent variable and inventory management improved without the moderator and with the presence of the moderator. The findings were seen to be positively significant indicating that there was a positive significance relationship showing that the null hypothesis was rejected and alternative hypotheses was accepted that HA_3: There is a positive significant relationship between Inventory management and implementation level of public procurement regulations in the devolved system of governments in Kenya.

5.2.4 Influence of Procurement Audit Practices on Level of Implementation of Public Procurement Regulations

The study was determining the relationship between Procurement Audit practices and level of implementation of public procurement regulations in the devolved governments in Kenya. The regression analysis was conducted and from the finding an R- square in the absence of the moderator and in the presence of the moderator, indicating that Implementation level of Public Procurement Regulations as was explained by the Procurement Audit practices. The study findings clearly show that for every unit of Procurement Audit practices, Implementation level of Public Procurement Regulations was increasing in the presence of the moderator. A significant p -value was registered. Which further implied that there was a positive significant relationship between Procurement Audit practices and Implementation level of public procurement regulations in the devolved system of governments in Kenya. The results affirm the alternative hypotheses HA_4: There is a positive significant relationship between Procurement audit practices and implementation level of public procurement regulations in the devolved system of governments in Kenya and rejects the null hypotheses.

5.2.5 Moderating Influence of Monitoring and Evaluation on Procurement Management Practices and Level of Implementation of Public Procurement Regulations

The study carried out a multistage regression overall analysis of the moderator and obtained an improvement in the value of coefficient of determination from (R^2) indicating that in the absence of the moderator and in the presence of the moderator (Monitoring and Evaluation). This indicates that when using Monitoring and Evaluation as a moderator, the variation in level of implementation of public procurement regulations could be attributed to procurement management practices. The coefficient values were all found to be positively significant hence the study affirms the alternative hypotheses that $HA_{5:}$ Monitoring and evaluation positively moderated the relationship

between Procurement management practices and level of implementation of public procurement regulations in the devolved system of governments in Kenya.

5.3 Conclusion

5.3.1 Procurement Staff Competency and Level of Implementation of Public Procurement Regulations

The study findings were generally positive influence of procurement management practices on Implementation level of Public Procurement Regulations. The study concluded that the stability of procurement process will be realized through skilled and knowledgeable staff on their Procurement procedures & regulations to procure items and services within the CGs. Improvement of staff competence in a procurement function increases procurement productivity which will have a positive impact on CGs service delivery. Staff competencies level not only influenced performance of procurement department but also the whole CGs. The study concluded that in as much as skilled staff being competent in their work in giving solutions, the challenge is the incompetent staffs that are not productive in the procurement department within the CGs. The study concluded that county governments as a matter of concern to heavily invest on procurement staff capacity building as an important factor in establishing the level of implementation of public procurement regulations in the devolved system of governments in Kenya.

5.3.2 Supplier Relationship Management and Level of Implementation of Public Procurement Regulations

The SRM attributes played a key role in improving the level of implementation of public procurement regulatory system that were associated with high regulations implementation level. The study concluded that there is a clear indication that County governments should pay close attention on Supplier development, Supplier payment, Supplier Appraisal and Supplier value addition/creation and cooperation which was

found to be important in effective SRM in the organization productivity. It's also concluded that the County government's investment on SRM will achieve a better performance through minimization of costs in procurement and improve on quality of product deliveries. The CGs improved the performance through relationship management with suppliers and that CGs cannot only depend on the inner system to achieve higher productivity.

The need for CGs to establish supplier development programs to encourage suppliers to be interested in programs that enhance productivity hence higher performance of the organization are realized. Performance of the CGs on service delivery can be improved through supplier development engagement activities. Treating county suppliers as a partner and maintaining effective communication goes a long way toward creating a sustained mutually beneficial relationship.

5.3.3 Inventory Management and Level of Implementation of Public Procurement Regulations

The study concluded that Just-in-time delivery requires a highly responsive, flexible supply chain. Effectiveness of inventory management system contributes to ability to maintain optimum stocks. Dependability of demand forecasting, planning for production requirement and reduced lead times also contributes to optimal stock levels which ultimately improves the performance of procurement function within the CGs. Poor supplier record management leads to high costs incurred in prolonged order cycle times. This leads to poor organization productivity due to lack of maintaining good relationships with their suppliers. The study further concluded that most Procuring entities at the County governments have store facility and relevant store records, but the major challenges identified were updating store records, security of store and failure to conduct regular stock taking. The Procuring entities maintained Assets Register that was not up to date and this was found to be non-compliance in implementing inventory controls and management.

5.3.4 Procurement Audit Practices and Level of Implementation of Public Procurement Regulations

The study concluded that without Procurement planning, adherence to tender processes, Procurement committee setup procedurally and commitment to the Compliance level, a lot of public resources will go to waste and with the vast resources channeled through public procurement systems run the danger of increased corruption and misuse of funds as witnessed in most counties. The study concluded that procurement audit practice in CGs is to prevent fraud, provide confidence in relation to effective and efficient operations, ensure compliance with the laws and regulations, tackle corruption issues and prevent future mistakes. The study concluded that Procurement Audit at the CGs provides a platform for accountability & transparency which constitutes a central pillar of any public procurement system of which without, a lot of CGs and public resources will go to waste.

5.3.5 Moderating Influence of Monitoring and Evaluation on Procurement Management Practices and Level of Implementation of Public Procurement Regulations

The M & E activities had improved the efficiency of procurement procedures characterized by increased assessment on the procedures. Finally, the study concluded that County governments as procuring entities should ensure that all procurement activities comply and take into consideration the principles and procurement management practices' attributes from the findings, effective communication skills, staff capacity building, work relationship management, knowledge & skill, just-in-time principal, Stock taking, asset registers, stores management practice etc. and value for money for quality service delivery to the citizenry as well as enhancing public confidence in the system. It is understood that when procurement management practices are properly monitored and complied with in the Counties, high implementation level of public procurement regulatory system is obtained which improves efficiency, effectiveness, accountability and performance, hence achieving service delivery to the

taxpayers and realization of value for money in the county governments in Kenya. The implementation of public procurement regulations in county governments in Kenya depended on the application of the procurement management practices and they need to be moderated by monitoring and evaluation which act as an integrated factor in leveraging implementation level of public procurement regulations. Therefore, the combination of independent variables and monitoring and evaluation positively and significantly improves the implementation of public procurement regulations in the devolved system of government in Kenya.

5.4 Recommendations

5.4.1 Procurement Staff Competency and Level of Implementation of Public Procurement Regulations

The study also recommended the adoption of procurement staff competency as a way of improving the implementation of public procurement regulations. The study found out a strong positive significant relationship between procurement Staff competency and implementation level of public procurement regulations in the devolved system of governments in Kenya. The study therefore, recommended that the county government to heavily invest on procurement staff capacity building as an important factor in improving compliance and implementation of public procurement regulations in devolved system of governments in Kenya. Involving monitoring and evaluation, the study established that monitoring and evaluation was a key complement of procurement staff competency. Study discovered that education and procurement staff competence emerged as a key ingredient of level of implementation of public procurement regulatory framework. Since some staff members lacked technical skills beyond secondary education, the study recommended that the county governments need to identify, support and organize in-service training for the procurement staff officers to improve on their knowledge and skills capacity.

5.4.2 Supplier Relationship Management and Level of Implementation of Public Procurement Regulations

In relation to supplier relationship management, the study recommended that the devolved governments functions should embrace supplier's commitment level on quality of goods and services in their operations such as information sharing between the buyer, improve on their commitment on suppliers' payment, increase commitment level in supplier partnership and development to improve the supplier's commitment level and value addition or creation in service delivery. Supplier involvement have positively improved public procurement regulations implementation in the devolved system of governments. However, the study established that procurement officers in devolved governments had challenges rejecting deliveries of goods due to non-conformity to specifications and Supplier failure to honor the orders issued by the buyer. The study recommended adoption of Buyer / supplier collaboration in new product development and supplier development through trainings.

5.4.3 Inventory Management and Level of Implementation of Public Procurement Regulations

In regard to inventory management, the study recommended that the devolved government should invest in waste management practices such as eliminating excess production on cost reduction, Compliance on stores management practice and ensuring accuracy of inventory management systems in all the procurement functions. The study recommended a Just-In-Time principal practices to be applied in the management of inventory, this will enable daily Inventory tracking system and Commitment level on implementing lean inventory policies hence reducing on the inventory management cost.

5.4.4 Procurement Audit Practices and Level of Implementation of Public Procurement Regulations

The study recommended that even though procurement audit review practices were being undertaken in the counties, they needed to be beefed up to ensure compliance with the procurement regulatory framework. The study also recommended that although, there was an improvement in the compliance level with procurement regulations within the devolved functions, a lot more needed to be done to improve efficiency in procurement processes in the in the devolved governments in Kenya. There was a general rise in customers' complaints involving procurement services. The study recommended for stringent measures to clean up the fraudulent symptoms raising customer dissatisfaction with the county procurement services. Stakeholder involvement needs to be improved to sanitize the procurement activities.

5.4.5 Moderating Influence of Monitoring and Evaluation on Procurement Management Practices and Level of Implementation of Public Procurement Regulations

Based on the study findings and conclusions, the study recommended that all procurement management practices needs to be implemented, managed and adhered to in the devolved governments' cycles in Kenya as a way of improving the implementation of public procurement system. The study further recommended that procurement management practices and monitoring and evaluation be seen as a way of leveraging on the output in the county governments. Further, the study recommended that monitoring and evaluation should be applied generally across all devolved government functions to improve on the compliance and implementation, rather than a few areas in the devolved government functions in Kenya. The study also recommended that there was need for county procurement supervisors to raise the bar on monitoring and evaluation and procurement audit. The frequency of M & E and audit activities should be doubled up if not tripled to ensure a squeeze every opportunity that emerges.

5.5 Suggestion for Further Research

The study has managed to establish the relationship between procurement management practices and level of implementation of public procurement regulations in the devolved system of governments in Kenya. However, there were areas that the study was limited in terms of methodology applied and scope. The study only focused and investigated four procurement practices in the devolved systems of governments in Kenya. It is recommended that further or additional studies explore other procurement management practices such as; lean supply chain, green procurement, outsourcing, procurement planning, and contract management and establish their relationships with level of implementation in the devolved system of governments in Kenya. Also a study to be carried to establish the knowledge and skill gaps involving procurement officers is of essence. This will help generate information that will be foundational to development of training programs that can boost compliance with the regulation. Political interference and delay of county funds seems to interfere with compliance with the regulation, thus a study to quantify the amount of variance that the two could explain on regulation compliance would be a boost to the counties. A replication of this study with other departments involving national government is essential to confirm this study findings. It is also recommended that future studies be carried out in other organizations such as; national government ministries, government parastatals, government health institutions, educational institutions and compare to the present studies.

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APPENDICES

Appendix I: Research Questionnaire

This study seeks to establish the management practices and level of implementation of Public procurement Regulations in the devolved system of governments in Kenya. To achieve these objectives, relevant questions have been provided to gather data for analysis. Kindly spare some time to provide the requested information as accurately as possible. Any information supplied will be strictly confidential and will be for academic purpose only.

SECTION 1: DEMOGRAPHIC & GENERAL INFORMATION

(Instruction-Tick where appropriate)

COUNTY NAME_____

Years of Work

Less than 5 years [ ]

6-10 Years [ ]

11-15 years [ ]

16 years and above [ ]

Gender.

Male [ ]

Female [ ]

Professional Qualification (Specify_____

Membership of any professional body? **Yes [ ] No [ ]**

If Yes, kindly Indicate the professional body(s)

_____

_____

_____.

Your Membership category in the procurement professional body?

None [ ]

Student member [ ]

Associate member [ ]

Full member [ ]

Affiliate member [ ]

Fellow member [ ]

SECTION 2: PROCUREMENT STAFF COMPETENCY

How would you agree with the level of competencies of procurement officers in the county?

Procurement Staff Competency.	5	4	3	2	1
Procurement staff possess higher effective communication skills.					
Procurement staff attained understanding on effective negotiation process.					
Procurement staff clearly understands the procurement procedures and regulations.					
Procurement staff have gained knowledge & skills on their Job description.					
Procurement staff have a good working relationship management.					
Procurement staff have embraced new working policy systems.					
Procurement staff attained understanding on financial management related issues.					
Procurement staff regularly go through capacity					

building.					

Key: 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree, 5-Strongly Agree.

SECTION 3: SUPPLIER RELATIONSHIP MANAGEMENT

How would you agree on the extent to which the organization supplier relationship management issues are handled within the devolved system of government?

Supplier Relationship Management.	5	4	3	2	1
The organization's commitment level is satisfactory in supplier partnership and development.					
There is adequate level of information sharing between the buyer/supplier management relations.					
The organization's level of commitment on suppliers' payment is satisfactory.					
The organization's Commitment level in appraising its suppliers is correct.					
The supplier's commitment level on value addition/creation on deliveries is appreciated.					
The supplier's commitment level is appreciated on quality of goods and services improvement.					
The Buyer/Supplier collaboration level is adequate on new product development.					
The organization Trust-based relationship with suppliers is correct.					
Often delivered goods are rejected due to non-conformity to specifications.					
Supplier failure to honor the orders issued by the buyer is consistently witnessed.					

Key: 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree, 5-Strongly Agree.

SECTION 4: INVENTORY MANAGEMENT

To what level would on the handling of inventory management issues within the county government?

Inventory Management	5	4	3	2	1
Often Inventory purchases fail to meet Just-In-Time principal.					
The organization has Commitment in eliminating excess products on cost reduction.					
The organization has high Commitment level of ensuring accuracy of inventory systems.					
The firm's commitment level on Demand forecasting adequate.					
The organization has high commitment level on daily Inventory tracking system.					
The firm has commitment to Strategic stocking.					
The compliance level on stores management practice is adequate.					
The organization has commitment on Implementing lean inventory policies.					

Key: 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree, 5-Strongly Agree.

SECTION 5: PROCUREMENT AUDIT

Do you agree with the level of Procurement Auditing practices in the county?

Procurement Audit	5	4	3	2	1
Procurement planning processes are fully complied with in the organization.					

The Procurement audit recommendations has improved the operations in the organization.					
Procurement Tender processes are complied with in the organization.					
Commitment level of procurement procedures followed to the letter					
The procurement committee within the organization are fully constituted.					
The organization have a higher level of compliance on all matters regarding procurement procedures.					
The organization have a high level of accuracy on procurement record keeping					

Key: 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree, 5-Strongly Agree.

SECTION 6: MONITORING & EVALUATION

Do the county governments conduct monitoring and evaluation in the procurement processes to ascertain compliance and adherence.

Yes [ ]

No [ ]

If YES;

Do you agree with the following monitoring and evaluation activities undertaken?

Monitoring & Evaluation	5	4	3	2	1
The organization often conduct monitoring & evaluation of the procurement procedures and processes.					
The monitoring & evaluation activities have benefitted the organization in implementing procurement procedures					
The organization routinely carry out monitoring in the organization.					
Stakeholders are often involved in monitoring and evaluation activities					

The utilization level of Evaluation in the organization is appreciated.					
Often the evaluation exercise are undertaken within the organization.					
The Evaluation work plan are correctly followed within the organization.					

Key: 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree, 5-Strongly Agree

SECTION 7: PUBLIC PROCUREMENT REGULATIONS IMPLEMENTATION LEVEL.

IFMIS implementation Level of PPRA in % (s), Affirmative action in % (s), Cost reduction in %, Procurement procedures in % and Top management support in % on implementing Public Procurement.

Top management support in % on the implementation of PPR	0-20 %	21-40 %	41-60 %	61-80 %	81-100 %
In % (s) on top management support on implementation Level in 2014					
In % (s) on top management support on implementation Level in 2015					
In % (s) on top management support on implementation Level in 2016					
In % (s) on top management support on implementation Level in 2017					
In % (s) on top management support on implementation Level in 2018					
Affirmative action on the implantation level of PPR	0-20 %	21-40 %	41-60 %	61-80 %	81-100 %
in % (s) the Affirmative action on the implantation level of PPR during the FY 2014					

in % (s) the Affirmative action on the implantation level of PPR during the FY 2015					
in % (s) the Affirmative action on the implantation level of PPR during the FY 2016					
in % (s) the Affirmative action on the implantation level of PPR during the FY 2017					
in % (s) the Affirmative action on the implantation level of PPR during the FY 2018					

IFMIS implementation Level	0-20 %	21-40 %	41-60 %	61-80 %	81-100 %
IFMIS implementation Level in 2014					
IFMIS implementation Level in 2015.					
IFMIS implementation Level in 2016.					
IFMIS implementation Level in 2017					
IFMIS implementation Level in 2018					

Procurement procedures in implementing Public Procurement Regulations during the financial years

Procurement procedures implementation in % (s)	0-20 %	21-40 %	41-60 %	61-80 %	81-100 %
In % on the procurement procedures during the year 2014					
In % on the procurement procedures during the year 2015					
In % on the procurement procedures during the year 2016					
In % on the procurement procedures during the year 2017					

In % on the procurement procedures during the year 2018					

The Extent the organization realized **cost reduction** in implementing Public Procurement Regulations during the financial year.

Cost Reduction in % (s)	0-20 %	21-40 %	41-60 %	61-80 %	81-100 %
In % on Cost reduction in implementing Public Procurement Regulations during the FY 2014.					
In % on Cost reduction in implementing Public Procurement Regulations during the FY 2015.					
In % on Cost reduction in implementing Public Procurement Regulations during the FY 2016.					
In % on Cost reduction in implementing Public Procurement Regulations during the FY 2017.					
In % on Cost reduction in implementing Public Procurement Regulations during the FY 2018.					

Appendix II: Statistical Tests of Hypotheses

Table 3.1 Statistical Tests of Hypotheses

Research Objectives	Hypotheses	Type of Analysis	Interpretation of Results
1. Procurement Staff competency.	HA: There is positive significant relationship between procurement staff competency and implementation level of public procurement regulations.	Pearson's correlation	For $p<0.05$, H0 was rejected and HA accepted. For the strength of the relationships.
2. Supplier relationship management.	HA: There is positive significant relationship between SRM and implementation level of public procurement regulations.	Pearson's correlation	For $p<0.05$, H0 was rejected and HA accepted. For the strength of the relationships.
3. Inventory management	HA: There is positive significant relationship between inventory management and implementation level of public procurement regulations	Pearson's product moment correlation	For $p<0.05$, H0 was rejected and HA accepted. For the strength of the relationships.
4. Procurement Audit practices	HA: There is positive significant relationship between Procurement Audit practices and implementation level of public procurement regulations.	Pearson's product moment correlation	For $p<0.05$, H0 was rejected and HA accepted. For the strength of the relationships.
5. Monitoring and evaluation.	HA: There is positive significant relationship between management practices and implementation level of public procurement regulations moderated by monitoring and evaluation.	Hierarchical Multiple regression analysis	For $p<0.05$, H0 was rejected and HA accepted. For the strength of the relationships.

Appendix III: Reliability and Validity of Research Instrument

Table 4.1 Reliability and Validity of Research Instrument

		Item-Total Statistics					Reliability Statistics		
Variables	Items	Scale mean if Item Deleted	Scale variance if Item Deleted	Corrected Item-Total (R)	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha	Cronbach's Alpha Based on Stdzd Items	No. of Items
Procurement	STCP1	25.5889	13.436	.645	.460	.828	.848	.852	8
Staff	STCP2	25.6444	12.681	.598	.485	.829			
Competency	STCP3	25.4778	12.005	.708	.575	.814			
	STCP4	25.6444	13.220	.483	.407	.843			
	STCP5	25.5889	13.840	.340	.273	.860			
	STCP6	26.0222	12.629	.611	.420	.827			
	STCP7	25.9889	12.168	.726	.591	.813			
	STCP8	25.7667	12.069	.631	.468	.825			
Supplier	SRM1	26.8966	29.094	.552	.498	.698	.733	.812	10
Relationship	SRM2	26.7356	29.057	.607	.421	.695			
Management	SRM3	27.0230	28.092	.457	.450	.703			
	SRM4	27.3218	26.593	.607	.560	.679			
	SRM5	27.0460	27.207	.705	.618	.675			
	SRM6	26.6207	26.447	.139	.130	.828			
	SRM7	27.2069	27.399	.590	.519	.685			
	SRM8	26.9885	30.174	.397	.315	.715			
	SRM9	27.6437	29.418	.402	.397	.712			
	SRM10	27.5517	31.320	.212	.270	.735			
Inventory	IMC1	19.1000	12.226	.043	.193	.795	.742	.738	7
Management	IMC3	18.6778	9.457	.531	.453	.692			
	IMC4	18.7222	10.203	.471	.555	.708			
	IMC5	18.8333	9.399	.581	.474	.681			
	IMC6	18.7333	9.209	.604	.429	.674			
	IMC7	18.5667	9.911	.531	.367	.694			
	IMC8	18.7667	10.001	.469	.306	.708			
Procurement	PAP1	15.8556	9.451	.451	.218	.668	.706	.700	6
Audit practices	PAP2	16.0556	7.649	.593	.414	.611			
	PAP3	16.3111	7.430	.624	.472	.599			
	PAP4	16.0000	7.955	.637	.505	.602			
	PAP5	16.0333	9.224	.329	.194	.701			
	PAP6	15.9111	10.936	.051	.054	.771			
M & E	MEE1	21.6111	19.072	.801	.689	.887	.909	.910	7
Enhancement	MEE2	21.5333	19.488	.738	.593	.895			
	MEE3	21.7333	19.658	.681	.559	.902			
	MEE4	21.6889	20.486	.732	.559	.896			
	MEE5	21.5000	20.073	.722	.581	.896			
	MEE6	21.3778	20.170	.752	.589	.893			
	MEE7	21.4222	20.606	.675	.562	.901			
Implementation	ICS1	12.6333	5.561	.462	.506	.813	.809	.812	5
of PPR	ICS2	12.4444	5.104	.692	.557	.744			
	ICS3	12.2111	4.865	.738	.578	.728			
	ICS4	11.9444	5.064	.648	.577	.756			
	ICS5	11.7889	5.517	.467	.414	.812			
Overall Alpha							.774	0.800	43

Appendix IV: Results of Confirmatory Factor Analysis (CFA)

Table 4. 8 Results of Confirmatory Factor Analysis (CFA)

			Standardized Estimate factor loads	Unstandardized Estimates factor loads	Standardized error.	Critical value.	P-Value
STCP1	<---	Procurement Staff Competency	.651	1.000			0.00***
STCP2	<---		.715	1.467	.253	5.802	***
STCP3	<---		.775	1.660	.268	6.190	***
STCP4	<---		.499	1.024	.241	4.247	***
STCP5	<---		.340	.721	.243	2.965	.003
STCP6	<---		.710	1.453	.252	5.768	***
STCP7	<---		.807	1.629	.255	6.382	***
STCP8	<---		.677	1.555	.281	5.542	***
SRM1	<---	Supplier Relationship Management	.682	1.000			0.00***
SRM2	<---		.609	.852	.163	5.240	***
SRM3	<---		.654	1.311	.235	5.591	***
SRM4	<---		.741	1.532	.245	6.262	***
SRM5	<---		.796	1.376	.207	6.660	***
SRM6	<---		.719	1.125	.185	6.093	***
SRM7	<---		.629	1.158	.214	5.400	***
SRM8	<---		.519	.800	.178	4.509	***
SRM9	<---		.506	.674	.199	3.391	***
SRM0	<---		.501	.358	.191	1.879	.040
IMC6	<---	Inventory Management	.689	1.000			0.00***
IMC5	<---		.711	1.010	.179	5.649	***
IMC4	<---		.622	.807	.160	5.052	***
IMC3	<---		.608	.902	.182	4.948	***
IMC2	<---		.589	.486	.635	.766	***
IMC1	<---		.568	.331	.158	.196	.004
IMC7	<---		.590	.772	.160	4.820	***
IMC8	<---		.549	.760	.168	4.521	***
PAP5	<---	Procurement Audit practices	.417	1.000			
PAP4	<---		.770	1.771	.493	3.594	***
PAP3	<---		.771	2.036	.566	3.595	***
PAP2	<---		.735	1.907	.537	3.552	***
PAP1	<---		.595	.913	.301	3.030	.002
PAP6	<---		.673	.761	.258	2.622	.034
PAP7	<---		.693	.455	.294	2.546	.022
MEE5	<---	Monitoring & Evaluation	.757	1.000			
MEE4	<---		.762	.933	.127	7.373	***
MEE3	<---		.731	1.075	.153	7.040	***
MEE2	<---		.795	1.126	.145	7.737	***
MEE1	<---		.841	1.185	.143	8.259	***
MEE6	<---		.795	1.002	.130	7.737	***
MEE7	<---		.706	.904	.133	6.772	***
ICS1	<---	Implementation level of Public Procurement Regulatory	.551	1.000			
ICS2	<---		.726	1.220	.253	4.822	***
ICS3	<---		.856	1.504	.290	5.190	***
ICS4	<---		.723	1.289	.268	4.811	***
ICS5	<---		.575	1.057	.253	4.172	***

Appendix V: Confirmatory Factor Analysis

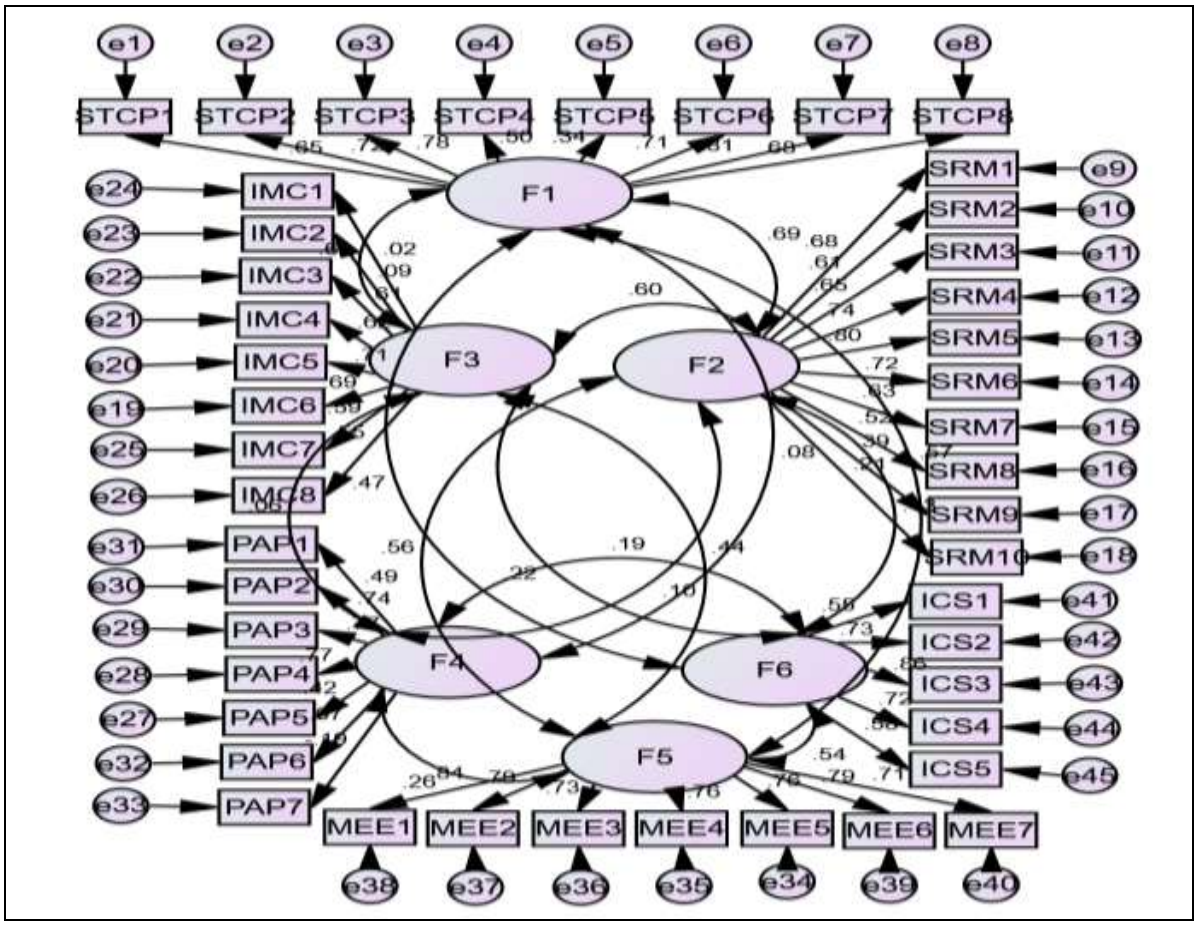


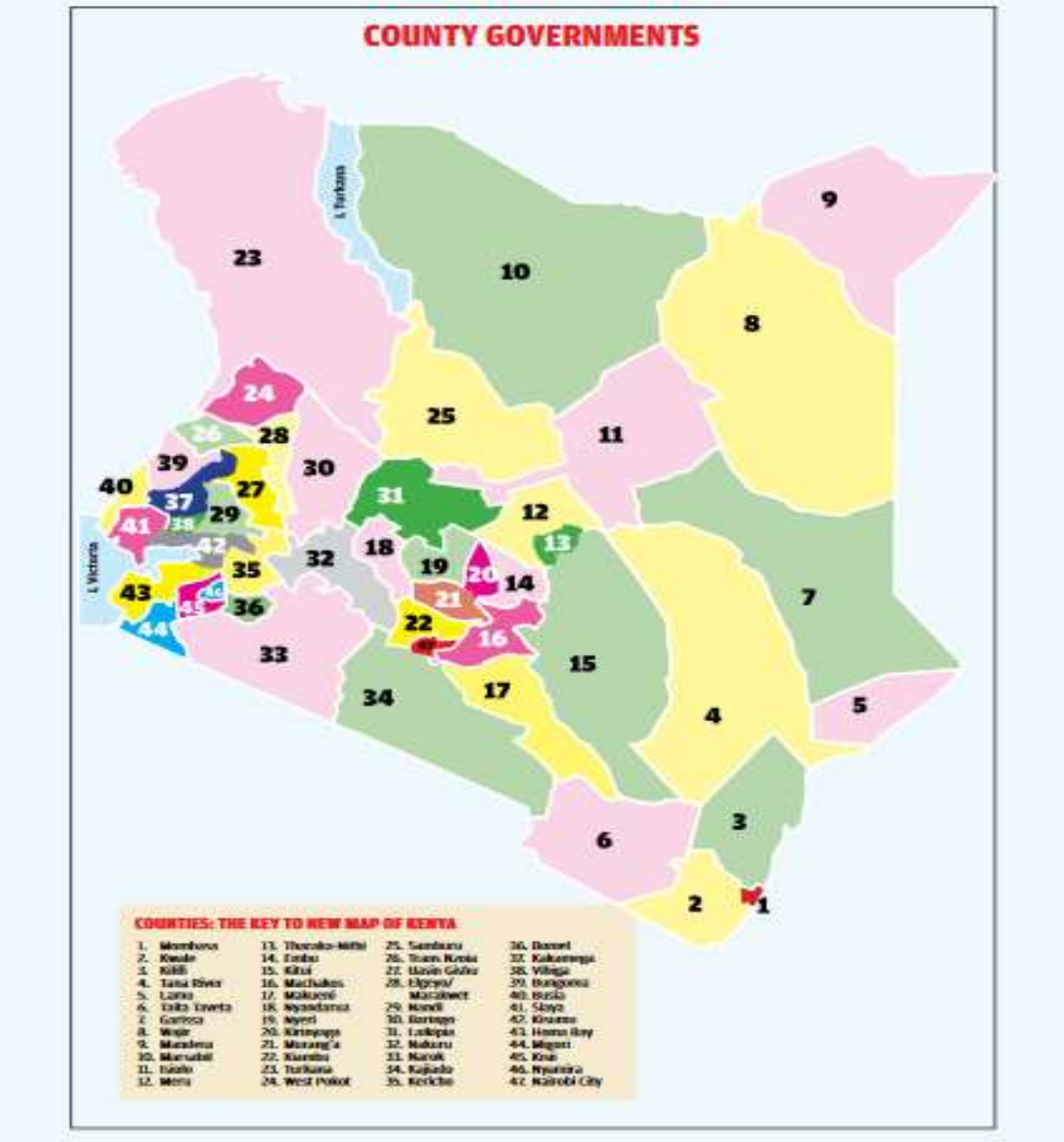
Figure 4.1 Confirmatory Factor Analysis

Appendix VI: Breusch-Pagan and white test for Heteroscedasticity

Table 4.35: Breusch-Pagan and white test for Heteroscedasticity

Test		Breusch-Pagan test	White's test	Breusch-Pagan test (Robust variant)
	Hypothesis	H_0:Heteroskedasticity not present	H_0:Heteroskedasticity not present	H_0:Heteroskedasticity not present
Regression for Procurement Staff Competency	Model 1	Test statistic: LM = 0.000109095 with p-value = P(Chi-square(1) > 0.00011) = 0.991666	Test statistic: LM = 0.118 with p-value = P(Chi-square(2) > 0.118002) = 0.942706	Test statistic: LM = 0.000160671 with p-value = P(Chi-square(5) > 6.97974) = 0.222151
Regression for Supplier Relationship Management	Model 2	Test statistic: LM = 2.80134 with p-value = P(Chi-square(1) > 2.80134) = 0.0941853	Test statistic: LM = 5.19457 with p-value = P(Chi-square(2) > 5.19457) = 0.0744757	Test statistic: LM = 3.79348 with p-value = P(Chi-square(1) > 3.79348) = 0.0514526
Regression for Inventory Management	Model 3	Test statistic: LM = 3.49689 with p-value = P(Chi-square(1) > 3.49689) = 0.061484	Test statistic: LM = 4.00671 with p-value = P(Chi-square(2) > 4.00671) = 0.134882	Test statistic: LM = 4.0009 with p-value = P(Chi-square(1) > 4.0009) = 0.045476
Regression for Procurement Audit practice	Model 4	Test statistic: LM = 0.130724 with p-value = P(Chi-square(1) > 0.130724) = 0.717683	Test statistic: LM = 0.137364 with p-value = P(Chi-square(2) > 0.137364) = 0.933624	Test statistic: LM = 0.124 with p-value = P(Chi-square(1) > 0.124) = 0.724736
Regression for Monitoring & Evaluation	Model 5	Test statistic: LM = 0.411673 with p-value = P(Chi-square(2) > 0.411673) = 0.813966	Test statistic: LM = 0.411673 with p-value = P(Chi-square(2) > 0.411673) = 0.813966	Test statistic: LM = 0.0315967 with p-value = P(Chi-square(1) > 0.0315967) = 0.858916
Overall regression for all variables	Model 6	Test statistic: LM = 5.91057 with p-value = P(Chi-square(20) > 21.4093) = 0.373404	Test statistic: LM = 5.91057 with p-value = P(Chi-square(5) > 5.91057) = 0.315019	Test statistic: LM = 6.97974 with p-value = P(Chi-square(5) > 6.97974) = 0.222151

Appendix VII: List of the County Governments



Source. PPOA 2013

Code	County	Code	County	Code	County	Code	County	Code	County
1	Mombasa	11	Isiolo	21	Murang'a	31	Laikipia	41	Siaya

2	Kwale	12	Meru	22	Kiambu	32	Nakuru	42	Kisumu
3	Kilifi	13	Tharaka-Nithi	23	Turkana	33	Narok	43	Homa Bay
4	Tana River	14	Embu	24	West Pokot	34	Kajiado	44	Migori
5	Lamu	15	Kitui	25	Samburu	35	Kericho	45	Kisii
6	Taita-Taveta	16	Machakos	26	Trans Nzoia	36	Bomet	46	Nyamira
7	Garissa	17	Makueni	27	UasinGishu	37	Kakamega	47	Nairobi
8	Wajir	18	Nyandarua	28	Elgeyo-Marakwet	38	Vihiga		
9	Mandera	19	Nyeri	29	Nandi	39	Bungoma		
10	Marsabit	20	Kirinyaga	30	Baringo	40	Busia		