RELATIONSHIP BETWEEN ADOPTION OF DEVOLVED AGRICULTURAL SYSTEM OF GOVERNANCE AND ENHANCEMENT OF FOOD SECURITY IN UASIN GISHU COUNTY, KENYA

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Relationship between Adoption of Devolved Agricultural System of Governance and Enhancement of Food Security in Uasin Gishu County, Kenya

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DECLARATION

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

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

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DEDICATION

This thesis is dedicated to my dear wife Dr.Viola Boor, to all my dear children Trevor and Tracy who constantly encouraged, supported and prayed for me to go on even when I was at the verge of giving up. The overwhelming support of the larger Kap Saina family in their unreserved efforts of ensuring I went to school. This gave me a reason to work hard and to face every challenge in my life with confidence.

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TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABREVIATIONS

AAAA	Addis Ababa Action Agenda
AFFA	Agriculture Fisheries and Food Authority
ASDS	Agricultural Sector Development Strategy
CDF	Constituency Development Fund
GoK	Government of Kenya
H_0	Null Hypothesis
IMF	International Monetary Fund
LA	Local Authorities
LATF	Local Authority Transfer Fund
PRSP	Poverty Reduction Strategy Paper
SRA	Strategy for Revitalizing Agriculture
TA	Transition Authority

DEFINITION OF TERMS

Accountability: The degree to which local governments have to explain or justify what they have done or failed to do (Abe & Monisola, 2014).

County: A territorial division of some countries, forming the chief unit of local administration (Burugu, 2010). This study was conducted in Uasin Gishu, County.

Devolution: Devolution refers to transfer of power from a central government to sub national for example, state, regional, or local authorities **(**Hauss, 2003).

Governance: Establishment of policies and continuous monitoring of their proper implementation by members of the governing body of an organization. It includes the mechanisms required to balance the powers of the members (with the associated accountability) and their primary duty of enhancing the prosperity and viability of the organization (Dasqupta & Victoria, 2007).

Food security: Is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (Maxwell, 2002).

ABSTRACT

This study examined the adoption of the devolved system of governance in Agriculture in enhancing food security in Uasin Gishu County, Kenya. The study was guided by the following research objectives; the general objective was to examine the relationship between adoption of devolved agricultural system of governance and enhancement of food security in Uasin Gishu County. Specifically it was guided by the following specific objectives: to assess the relationship between devolved agricultural staff and enhancement of food security in Uasin Gishu County, to examine the relationship between the devolved agricultural extension services and enhancement of food security in Uasin Gishu County, to establish the relationship between devolved Public Private Partnerships and enhancement of food security in Uasin Gishu County and to assess the relationship between devolved funds allocation and enhancement of food security in Uasin Gishu County. Souffle Theory of Decentralization was used to inform the study. A total of 383 respondents were used in the study. Descriptive survey and the causal research design were used in this study. Primary and secondary data was used. The data collected was analyzed by both descriptive and inferential statistical tools. The study found that devolved public private partnerships, devolved staff and devolved funds significantly enhance food security. Devolved agricultural extension services do not significantly enhance food security. The study concludes that devolved public private partnership contributes to enhancement of food security. Devolved Agricultural Staff enhances food Security while devolved agricultural extension service does not enhance food security. The study recommends that both the national and county government should come up with good policies such as guidelines on devolutions of agricultural system, land use policies to aid in better management of the risks involved in the whole devolution of the agricultural system. The Kenyan government should build a platform to promote dialogue and cooperation among relevant institutions and programs in all sectors with the aim of developing an extension and information services network for food security.

CHAPTER ONE

INTRODUCTION

This chapter provides the background to the study and problem statement. It also states the overall and specific objectives as well as the research hypothesis. The justifications, scope of the study are also detailed in this chapter.

1.1 Background to the study

Agriculture is among the functions devolved to the local governments. Since agricultural functions are complex, technical and highly heterogeneous, only those activities that are related to delivery of services and supply of material inputs have been devolved (Chattopadhyay, 2005).

1.1.1 Global Perspective

Indian states are pioneer in the introduction of decentralization reforms, the experience of which has been intensively studied (Sivanna & Reddy, 2007; Besley et al., 2007; Babu, 2010; Kadekodi et al., 2007; Rajasekhar & Manjula, 2011). But, in all these studies the link between democratic decentralization and delivery of agricultural-related public services is missing. A synopsis of global household food security reveals that food insecurity has manifested itself in different jurisdictions.

In accordance with the FIES data collected by FAO in 2014, 2015 and 2016, 14.3 million adults in the Europe and Central Asia region suffered from severe food insecurity. At the sub-regional level, the highest prevalence of severe food insecurity during the 2014-2016 period was recorded in the Caucasus (5.4 percent) and Southeastern Europe (5.2 percent) sub-regions with unequal distribution across countries. The prevalence of severe food insecurity in the Central Asian countries was recorded at 2.1 percent accounting for close to 1 million people (World Bank, 2015).

The European Union is also not immune from other concerns about food and nutrition security, and food systems have to become better integrated as a pillar of the European Union's bioeconomy. The proportion of European Union households unable to afford access to the minimum amount generally recommended in dietary guidelines has increased since 2010, after having declined over the period 2005–2010, and reports from United Kingdom, Greek, Spanish and French charities indicate rises in the number of people seeking emergency food support (Loopstra et al., 2015). However, the Global Hunger Index (IFPRI, 2016) shows significant reductions in the hunger index for several eastern European countries over the period 1992–2016. Based on empirical data presented above it is evident that some of the developed countries face food insecurity challenges.

1.1.2 Regional Perspective

Countries are facing food insecurity that has necessitated demand for food aid. Statistically every year, 10% of Burundi's population requires food aid. In Benin there is increased malnutrition and almost a quarter of children below 5 years underweight (Economic commission for Africa, 2005). Besides, the world household food insecurity has increased poverty among the global population which has resulted into serious global hunger index of 15.1% in 2010 (Grebmer, Ruel, & Oppeln, 2010). The level of household food insecurity in has been described as serious (FAO, 2016). More than 7 million people out of Ethiopia's population of 76.9 million people are classified as food insecure; and a further 10 million people are identified as prone to drought. High population growth rate in the country increases the food insecurity further. Various countries in Africa have experienced the devastating effects of household food insecurity. For instance, Cameroon in West Africa, Egypt in Northern Africa, Ethiopia in the Eastern Africa and South Africa in the extreme Southern Africa (Barrett, 2001).

1.1.3 Kenyan Perspective

According to Mapesa and Kibua (2006), it is over the last 30 years in Kenya that there has been a renewed interest in decentralization programs as a way to reverse inequality and tackle poverty. Such decentralized programs that have been introduced over the last three decades are elaborated as follows: Devolution or decentralization which is the statutory granting of powers from the central government of a sovereign state to government at a sub-national level, such as a region, local, or state level. Devolution can be mainly financial or administrative. Devolution was poised as a perfect political and economic response to societal disparities, inequality, economic stagnation and inefficient use of public resources.

According to article 10 (2) (a) of the constitution of Kenya, sharing of power and devolution were identified as values and principles that would guide our governance system. However, decentralization is not new in Kenya. The quest for this form of governance began as early as 1963 before the Country got its independence. The *Majimbo* constitution provided for devolution of governance to regional assemblies in the context of a bicameral, Westminster type parliament with a Senate and a National Assembly (SID, 2011). Recent studies on decentralization in Kenya concurred that as early as at independence in 1963, the Government of Kenya (G.O.K) inherited a nation characterized by disparities in income and economic development as measured by economic standard indicators such as literacy level, infant and maternal mortality and life expectance, these disparities were found to exist by gender and region (Thulow, Kiringai, & Gautum, 2006). As far as Article, 174 of the Kenyan Constitution 2010, the entire spirit of devolution was therefore to fragment the country into 47 economic units referred to as counties. Where the ability to manage locally, govern and coordinate inter locally will become more important.

It is clear therefore that the devolved system did not only bring government resources and services closer to the people, but also gives powers and responsibilities to the people and leaders at the county level in decision making and determining the direction they want to go in development and politics. In turn the public administrators and political leaders will be forced to shift their efforts towards such technical issues as economy, efficiency and

effective use of tax monies as well as towards practical matters of economic development and regional cooperation and of which are attributes of a growing economy according to Cole et al. (1999).Countries that are turning to decentralization are doing so with the hope that it is the only sure way of getting rid of the traps of ineffective and inefficient governance in service delivery and in adequate economic growth.

Economists and policy makers are of the view that proper form of decentralization is an effective strategy to promote economic growth and development (Malik, Hassan, & Hussain, 2006). Fiscal Decentralization can be used to refer to either a territorial or area-based phenomena (such as the CDF and LATF) or functional phenomena (such as HELB, the HIV/AIDS Fund and the Bursary Fund).One involves the transfer of responsibility and authority for public functions to organizations with well-defined sub-national, spatial or political boundaries such as a province, a region, municipality or county (Gituto, 2007).

The other forms of decentralization involve transfer of authority to perform specific tasks in regards to revenue and expenditure to specialized organizations that operate nationally or regionally. It is important to note that regions are not out there waiting to be discovered. They are socially constructed, both discursively and materially, in relation to specific criteria, although political actors and particular interest groups may seek to define and defend them in essentialist terms, it is important to understand why this is so, not least in relation to arguments about regional devolution (Hudson, 2006).

Although there is no clear indications of just to what extent shall the new constitution add fuel to the economic trends, it is however certain that there shall be some critical benefits that shall accrue to the nation. This is so since devolved governments are unanimously associated with implied greater efficiencies, increased local civic engagement and participation in state processes, greater accountability to grassroots and other stakeholders and communities, a reduced bureaucracy and red tape especially for local development projects, and increased flexibility on the initiation and implementation of development interventions (Gituto, 2007). It can also be valuable in the mobilization of extra-budgetary

resources and improving the links between market forces and local economies.

Hudson (2006) outlines a number of possible benefits of devolution as to include the following: first, he says devolution will bring about benefits in terms of new forms of participative democracy, greater political accountability and transparency in policy making process within the region. Second, existing forms of top down regional economic policy through which central government acted at a distance on the region, had manifestly failed and been rendered obsolete by the neoliberal globalizing economy.

Thirdly, an elected assembly would strengthen the position of the regions in competition for inward investment and associated new employment. Regions in the late modern world of the European Union and the USA have been successful in making the transition to the high road of economic development. Regional success stories such as Baden-Wurttemberg, the Third Italy, and Silicon Valley are characterized by devolved forms of governance and regulation and this is seen as causally related to their economic success. The effectiveness of physical decentralization depends upon appropriate expenditure assignment with divisions of functions among different levels of government depending upon their comparative advantage, appropriate tax or revenue assignment, the efficient design of a system or transfer and its proper implementation (Kadar, 2006).

Nevertheless, it is in the year 2010 that Kenyans voted overwhelmingly for the current constitution that ushered in a devolved system of government. This system devolves political and administrative powers to the counties. Schedule 4 of the constitution delineates water, agriculture, county planning, health services and development among others as functions that shall be undertaken by County governments.

Kenyans adopted this form of governance as a means to improved service delivery and accountability in the utilization of public resources. Among the more prominent arguments for devolution is the issue of efficiency of the expectation that decentralizing functions to the lowest feasible level of decision-making and optimizes information flows and reduces transaction costs (SID, 2011). In addition, the economic dividend of devolution arises

through devolved administrations ability to tailor policies to local needs, generate innovation in service delivery provisions through inter-territorial competition and stimulate participation and accountability by reducing the distance between those in power and their electorate. There are various systems of governance namely anarchy, authoritarian, autocracy, dictatorship, federation/devolution, democracy, monarchy, regime, republic, theocracy, totalitarian and tyranny. This study focused on federation/devolution. Devolution refers to transfer of power from a central government to sub national for example, state, regional, or local authorities (Hauss, 2003). Devolution usually occurs through conventional statutes rather than through a change in a country's constitution; thus, unitary systems of government that have devolved powers in this manner are still considered unitary rather than federal systems, because the powers of the sub national authorities can be withdrawn by the central government at any time. Throughout history, there has been a tendency for governments to centralize power. During the late 20th century, however, groups in both federal and unitary systems increasingly sought to reduce the power of central governments by devolving power to local or regional governments.

Devolution differs from federalism in that the powers devolved may be temporarily withdrawn and ultimately reside in central government thus the state remains, de jure, unitary (Osborne, 2006). In federal systems states power/ provincial government is guaranteed in the constitution. Australia, Canada, India, the United States have federal systems, and have constitutions. They also have territories, with less authority and power than a state or province. Other examples of federations include Germany, Mexico, Russia and Switzerland. Globalization has been accompanied by an equally global tendency towards devolution of authority and resources from nation-states to regions and localities that take on various forms, depending upon which actors are driving decentralization efforts. The existence of a general trend towards devolution also has significant implications for efficiency, equity, and administration (Pose & Gill, 2011).

In Kenya, the formation of the 47 counties, each with its own government as spelt out in the County Governments Act, 2012 is enshrined in Chapter 11 of the Constitution. It legalizes the formation of the 47 counties, each with its own government as spelt out in the County

Governments Act, 2012. This Act also created elaborate structures to ensure success of devolution and its full implementation. The county governments have executive and legislative authority, including the accompanying mandates and powers, to raise limited revenue, establish policies, plans, budget and governance. The national government is obliged to support the county governments under this act. The form of the devolved government is defined in Section Six, which states that though the two levels of government are distinct, they remain independent. In Kenya, the movement for devolution was prompted in large part because of the centralization of the system of provincial administration. Provincial administration was directly under the control of the governor. It was responsible for law and order, and so had greater authority than even the police and it dominated other governmental agencies in the field.

The administration police were accountable to the governor. The long arm of the PA reached from the provincial capital to small villages, before independence there was a movement (majimbo) for the transfer of significant powers to regions, largely based on provinces. A primary reason was to eliminate the PA system. The plan was that central government would discharge its functions in the regions through regional authorities. Previous regimes did not like sharing of power and this led to the disbandment of Majimbo. A key trigger for the fight of the people against President Moi was the abuse of the enormous state and economic power that had been centralized in the presidency. A major demand during the struggle was the dispersal of power, both vertically and horizontally. Devolution was adopted as an objective in the famous Safari Park national conferences in the 1990s.

The Constitution of Kenya Review Act 2000 required the CKRC to consider people's participation through the devolution of power; respect for ethnic and regional diversity and communal rights including the right of communities to organise and participate in cultural activities and the expression of their identities. It was to review the options for federal and unitary systems, the place of local government, and the degree of the devolution of power to local authorities. The promulgation of the Constitution of Kenya 2010 marked a major milestone in the way the country is governed. It stipulated the dispersal of economic

resources and political power from the centre in Nairobi to the grassroots in a process known as devolution. As a result 47 county governments and the Senate were established following the March 4, 2013, General Election as part of the implementation of devolution.

Daponte, Beth Osborne, and Bade (2006), argue that through devolution, governance and delivery of public services including; health care services, education and infrastructure is enhanced in the smallest units of the counties. Counties will be better placed than the national government to deliver social services, because they have specific challenges and the local knowledge to address them. Devolution allows Kenyans to take charge of their development initiatives from the grass root levels through prioritizing of their needs be it in agriculture, mining, infrastructural development or even creation of jobs.

Besides the envisaged improvements in service delivery, citizens as well, have the opportunity to make candid decisions on development initiatives and priorities rather than adopting imposed directives from the central government thereby lessening political tensions. Citizens can hold leaders accountable in their performance as a result of devolution which has empowered citizens. The counties in Kenya are under the jurisdiction of the governors who are elected by the people to serve for a term of five years and maximum of two terms according to the new constitution. The governors' role is complemented by the county assemblies who legislates and ratify decisions or bills before the governor signs them into county laws.

The Chapter eleven of the new constitution advocates for the establishment of county governments. It spells out the various principles and objectives of devolved government, including the separation of powers and democratic ideals. It recognizes the right of communities to manage their own affairs and further their development. The executive has severally been accused of attempts to cripple devolution by the governors. The idea of devolution is to give the citizens a sense of identity and self-empowerment in the activities they engage in including agricultural practices to realize food security and economic sustenance for their families (Oloo, 2006). The governors are entirely charged with the role of promoting agriculture as a docket in their counties and are supposed to be in the

forefront to fight hunger in their counties and help the citizens to realize food security. Devolution has led to devolvement of a number of functions from the central government to the counties; one such function is the agricultural functions. 95% of agricultural functions have been devolved to the counties.

Uasin Gishu has specifically been keen on improving its agricultural production to cater for both domestic needs and export. The key benefits of devolution include; equitable distribution of resources across the country, especially to regions that have been marginalized for decades, management of governance and public service to the smallest units of the counties. timely and efficient delivery of public services such as health care, education and infrastructure, allowing citizens to take charge of their development initiatives from the grass root levels through prioritizing of their needs and avoiding political tensions at the national level by devolving leadership to the countryside (Soft Kenya, Devolved Government).

Despite the numerous attributes of the devolved system of governance, devolution has had a fair share of challenges including; the impending restructuring of the public administration and streamlining of service delivery mechanisms at the local level. The provincial administrations have been in existence for decades and the sudden change in governance as a result of the devolved system has an impact on their roles in the counties since there is no clarity in their functions in the counties. In some instances their functions overlaps with the functions of the Governors, thus duplication of roles.

The problem of devolution is even worse because there is little that is known particularly with regard to second order devolution and whether it will be a complete success (Kipkorir, 2009). Critics of devolution argue that it has propelled corruption, with county officials including Governors alleged to be involved in corruption malpractices that have seen counties fleeced substantial amount of money thus jeopardizing development activities including agricultural production resulting to food insecurity in a number of counties.

1.1.3.1 Agriculture in Kenya

Since agriculture is a devolved function and more so implementation of agricultural activities there is need to study the agricultural sector in line with devolved system so as to inform on food security in Kenya. It is worth nothing that in Kenya agriculture is the centerpiece of the economy, generating 24 per cent of GDP (GoK, 2012).

The prominence of agriculture is further illustrated through the more than one-third of Kenya's agricultural produce that is exported, which accounts for 65 per cent of Kenya's total exports (GoK, 2010; 2012). As a single sector, the agricultural sector accounts for 18 per cent of total formal employment in the country (GoK, 2012). According to the Second Vision 2030 Medium Term Plan 2013-2017, the agriculture sector contributes about 75 per cent of industrial raw materials and 60 per cent of the total employment respectively (GoK, 2013).

The centrality of agriculture as a driver of economic growth and development in Kenya has compelled consistent and strategic incorporation in legal and policy frameworks. The Constitution of Kenya (2010) places emphasis on agriculture by stating that every person has the right to be free from hunger, and to have adequate food of acceptable quality (GoK, 2010). The Poverty Reduction Strategy Paper (PRSP) in Kenya cited agriculture as the growth sector, which is most likely to play a central role in reducing poverty and increasing food security (International Monetary Fund IMF) 2005. The PRSP indicated that to reverse trends of low growth in agriculture, comprehensive and far-reaching reforms must be implemented to promote productivity growth and lower the costs of agricultural inputs, particularly among smallholders and subsistence.

The Strategy for Revitalizing Agriculture (SRA) (GoK, 2004) sought to redefine the sector where agriculture became a form of entrepreneurship as opposed to the sector remaining completely subsistence.

1.1.3.2 Agricultural Food Policy in Kenya

The agricultural sector main intent is the realization of national food security. Food security according to GoK (2008) is "a situation in which all human beings have access to sufficient safe, physical, social and economic and nutritious food which meets their food preferences for a healthy life". Kenya has been facing severe food insecurity problems since 2008. A high proportion of the population having no access to food in the right amounts and quality depicts food insecurity. Over 10 million people are facing food insecurity majority of which live on food relief. The bills spend by households are huge as a result of escalated food prices.

There are several factors which are causative agents of the current food insecurity problems for example, frequent droughts in most parts of the country, high costs of domestic food production due to high costs of inputs especially fertilizer, displacement of a large number of farmers in the high potential agricultural areas following the post-election violence which occurred in early 2008, low purchasing power for large percentage of the population and high global food prices due to high level of poverty. Over the years, the National food security problem has been addressed from three basic approaches, ensuring that consistent and adequate amounts of food are available at all times, increasing National food production by making inputs more available when they are needed and as far as possible ensuring timely payment for deliveries. Expansion of public grain storage facilities during years of surplus, rationalized food imports and commodity swaps (GoK, 2002).

1.1.3.3 Devolution, Agriculture and Food Security

Devolution manages state power along multiple lines and organizes governance and hence it is a multi-dimensional approach. Devolution defines, distributes and constrains the use of state power along multiple lines by combining both vertical and horizontal dimensions.

In essence, devolution is founded upon the concept of decentralization and devolution of power forms the foundation for federal systems and structures of government. It is a system of governance that devolves power from the centre to smaller sub government units at the local level in order to ensure that all citizens equally enjoy the national cake. It is described as the statutory granting of powers from the central government of a state to government at a sub-national level, such as a regional, local or county level. In theory devolution means greater program and policy flexibility, responsibility and self-sufficiency for local governments. It also means fewer federal dollars flowing directly to city governments and greater oversight of local programs by states and state agencies (Cole, Hissong & Arvidson, 1999). Equitable economic development is the long term goal of any government in achieving a sustainable GDP.

A better form of devolution is one that can be sustained in the long run, it should not be seen as an issue that periodically appears, catches fire for a short time then burn itself out (Cole et al., 1999). Decentralization is a process or a system of administration in which financial, political and decision-making powers are transferred from the centre to the lower administrative units like local governments. Under this arrangement, the local governments are given more powers and autonomy and amount of powers, resources and functions that are devolved to local governments to manage their own affairs are determinants of the nature or form of decentralization. The form of decentralization includes devolution, de-concentration, delegation and privatization. The first three forms describe a process whereby the central government shifts responsibility to a greater or lesser degree to lower units or local governments.

Local Governments are that part of a Government which is most accessible to the average citizen that closely touches him and presents the most opportunities for the public service. Regional devolution is a complex and heterogeneous process. From the high level of decentralization of certain federal states, such as Germany, and of some Spanish regions, to the more limited influence of regions in France and Mexico, across the world decentralization processes have adopted a wide variety of forms. Consequently, conceptualizing devolution is far from simple.

Donahue (1997) characterizes the process as being made up of three separate factors: legitimacy, the decentralization of resources and the decentralization of authority.

Any form of devolution implies some degree of sub-national legitimacy and some form of decentralization of authority and resources; consequently, any analysis of devolution should take these three factors into consideration. The devolved system of governance in Kenya is expected to lead to the practice of a more balanced system of fiscal federalism, more transparency, fiscal accountability and more devolution of power to lower units of government and hence more fiscal decentralization. While a greater degree of decentralization would, no doubt, contribute to greater grassroots participation, generate more local development, increase efficiency and equity, create employment opportunity and promote poverty alleviation, it must not be done in such a way as to conflict with the national objective or unduly complicate it, according to Omolo (2010).

Schedule four of the constitution puts it that the national government plays a policy role in the agriculture sector. The role is of paramount importance in ensuring that there is enough food in the country in order to meet the rights of the citizens. The Constitution of Kenya (2010) places emphasis on agriculture by stating that every person has the right to be free from hunger, and to have adequate food of acceptable quality (GoK, 2010). Agriculture as an activity contributes directly to availability of food in the country. The handling of agriculture at county level should focus beyond the county boundaries since counties differ from each other geographically and hence different agricultural activities require certain climatic conditions. Food security is a national function whose contribution should come from all the counties. It is in this regard that the study aims to establish the contribution of devolution of agricultural sector and food security.

1.2 Statement of the Problem

The major reason for devolving agricultural functions was to enable the counties to provide food security and create avenues for economic growth through enhanced agricultural production.

The management of the counties was expected to provide leadership in agricultural docket in each of the respective counties by addressing the constraints and challenges of modernization of agricultural activities. Despite devolving agricultural functions to the counties for close to four years, food security is still a major challenge and a problem to not just the leaders but the public in general. It is surprising that areas with high potential for agricultural production still report cases of hunger amongst citizens. Some counties especially in the high potential areas do have challenges in marketing their agricultural produce during peak harvest whereas in other counties their citizens are starving.

According to the World Bank report 2015, about 30% of incidents of lack of food and near starvation have been highlighted by the media in the North Rift. This raises concerns on the leadership capability in the North Rift counties, and seemingly the leaders are not keen on revamping agriculture to feed its people. Growth in agriculture, manufacturing and trade powered Kenya's labour market to a rebound that created 128,000 formal jobs (Kenya Economic survey, 2016). This survey confirms the importance of agriculture to the country and therefore each county should play its role in ensuring food availability not just for their county but for the whole county.

1.3 General Objective

To determine the relationship between adoption of devolved agricultural system of governance and enhancement of food security in Uasin Gishu County.

1.3.1 Specific Objectives

1. To establish the relationship between devolved Public Private Partnerships and enhancement of food security in Uasin Gishu County.
2. To examine the relationship between the devolved agricultural extension services and enhancement of food security in Uasin Gishu County.
3. To assess the relationship between devolved agricultural staff and enhancement of food security in Uasin Gishu County.

4. To assess the relationship between devolved funds and enhancement of food security in Uasin Gishu County.

1.4 Research Hypothesis

H_{01}: Devolved Public Private Partnerships in Uasin Gishu County have not contributed to enhancement of food security.

H_{02}: Devolved agricultural extension services in Uasin Gishu County has no effect on enhancement of food security.

H_{03}: Devolved agricultural staff in Uasin Gishu County has no effect on enhancement of food security.

H_{04}: Devolved funds in Uasin Gishu County has no effect on enhancement of food security.

1.5 Significance of the Study

Not much has been done on the performance of the devolved agricultural activities and therefore there is need for assessment of the sector since the dispensation of the new constitution and its operationalization. This study would enlighten the residents or households of various counties on the role of the new constitution in supporting the agricultural sector of which majority of Kenyans depend on for food and income. Under the new constitutional dispensation, counties are supposed to manage agricultural activities, a function which was devolved from the central government. This study would help the entire management of counties and more specifically the county management board on agriculture, in effective implementation of devolved agricultural activities as the finding of this study documents the extent to which the devolved system of governance has enhanced agricultural production and its implication on food security.

The study therefore would help the county(s) stakeholders to flag up the critical areas that they need to urgently reinforce in order to strengthen their capacity to prevent and respond to food insecurity in a timely, efficient and effective manner in future. The research would help scholars in the field of governance and leadership further their research on devolved agricultural system of governance and enhancement of food security through the recommendations for future research proposed by the study.

1.6 Scope of the Study

The study proposes to analyze the adoption of the devolved system of governance in agriculture and its implication in enhancing food security in Uasin Gishu County. The study focuses on the devolved agricultural staff, funds, Public Private Partnerships and extension services. Turbo, Moiben, Kapsaret, Kesses, Ainapkoi and Soy are the only sub counties considered in this study.

1.7 Limitations of the Study

The study was limited to Uasin Gishu County only which is majorly cosmopolitan but in some areas where there was language barrier the researcher used research assistants who are fluent with the residents' language to interpret the key and major issues related to the study. Suspicion and mistrust particularly with personal details got in the way of data collection and some respondents shied away from giving the information required by the researcher but this was solved by assuring the respondents that the information they would give will be treated with respect, professionalism and confidentiality. Most of the suspicion was as a result of the electioneering period in the country and some respondent thought that the information might be used to settle political scores since most of the key and major research issues were on devolution.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers the theoretical review, conceptual framework, critique of the existing literature relevant to the study, summary and research gaps.

2.2 Theoretical Framework

This study was based on the theory of governance and accountability that was developed and discussed by Wesley et al. (2008). They note that Governance is vital to the success of any organization from small domestic organizations to large international organizations. Governance refers to group decision-making that addresses shared problems. Within the context of agricultural sector, governance describes the processes and institutions that guide and restrain the collective activities taken by the sector and its directorates. In addition, governance is more about the process through which a decision is made, rather than the substance of the decision itself. In other words, governance is not necessarily about making the sector stronger; rather, governance describes the sector's rules and procedures that the sector uses to fulfill its goals of enhancing development and food security. Whatever ends the sector may decide to pursue, governance describes the mechanisms through which the sector implements its policies.

2.2.1 Principal Agent Theory

The Principal Agent theory is one of the dominant theoretical perspectives for analyzing and describing public governance reforms and is also known as Agency Theory. This theory was initiated by Jensen and Meckling (1976). The theory proposes a 'principal' with specific objectives and 'agents' who are required to implement activities in achieving those objectives. The principal agent theory emphasis the agency relationship, which depends on information flows and power positions between principals and agents. The question, then,

is how principals can manage the interests of agents so that they are in line with the goals they (principals) wish to achieve (Masanyiwa, Niehof, & Termeer, 2012).

According to Mewes (2011) the agency theory is related to top down and bottom up models. In the top down model, central government is the principal whose responsibilities are exercised on behalf by the local governments who act as agents.

In the bottom-up model, the ultimate principals are the citizens or service users, while politicians as representatives in decision-making organs are agents. In turn, local government administrators are agents of local political leaders and service users and are responsible for executing service delivery functions. Consequently, Kayode et al. (2013) further posits that in a democratic policy, the ultimate principals are the citizens who are consumers of specific services provided by the government. In the Principal - Agent theory, citizens are principals in the sense that politicians as agents seek their mandate from and act as the representatives of the public.

Later Scholars and Critics however argue that the Agency-Theory model is one-sided because it negatively characterizes an agent's behavior as self-seeking. They argue that it ignores agent loyalty, pride, and professionalism in aligning with the principal's goals (Davis, Donaldson, & Schoorman, 1997; Kayode et al., 2013). Another criticism of the agency theory is that it omits opportunistic behavior by principals. This is especially so in public services where politicians and bureaucrats personally stand to gain from colluding with private agents (Kamara, Owusu & Sesay, 2012). Furthermore, Masanyiwa (2012) citing Batley (2004) criticized the agency-theory model for focusing on the vertical relationship between the centre and periphery in a 'one-dimensional' way. Therefore, if they are of different administrative levels, this makes it difficult to analyze multiple principals and agents.

The Kenyan Constitutional framework of devolution is relevant to the Agency-Theory model as it provides a good basis for understanding the relationship in which one party that is, the principal delegates work to another for example, the agent, who performs the task.

Politicians act as the agents of citizens and must act in good faith to fulfill the principles of the Principal. Poor governance practices such as lack of social accountability have risen as a result of lack of addressing of the principal agent problems.

The Principal-Agent theory has become a widely-used paradigm for analyzing public accountability. Gailmard (2012) postulates that the reason behind this is a flexible framework for modeling innumerable variations in institutional arrangements, and in comparing their potential for inducing desirable behavior by agents. Researchers also adopt Principal-Agent theory to understand the social accountability practices between citizens and politicians. The politicians as representatives in decision-making organs are agents and principals are the citizens or service users.

2.2.2 The Souffle Theory of Decentralization

The Souffle theory of decentralization which was proposed by Parker (1995) that advocated for decentralization as the way forward for rural development, argued that there are three major elements of decentralization, namely: administrative, fiscal and political decentralization. Parker (1995) emphasized that decentralization is a multi-dimensional process that proceeds with successes and setbacks. Farooq, Shamail, and Awais (2008); Adjei (2006) argues that a successful program of decentralization must include just the right combination of political, fiscal, and institutional elements in improving rural development outcomes.

Decentralization initiatives will therefore be subject to a continuous process of modification which reflects changes in the social, political, and economic conditions (Adjei, 2006). Political, fiscal, and administrative decentralization dimensions should be included. Parker (1995) suggested a conceptual model, the soufflé theory, which incorporates the essential elements of the political, fiscal, and administrative decentralization because they are combined to realize desired outcomes. Political decentralization transfers legislative powers and policy from the central government to the elected local authorities (Azfar, 1999). However, the allocation of the power of decision making to local authorities is not enough

to create successful decentralization if local officials are not accountable to the local population (Elsageer & Mbwambo, 2004). Third party monitoring by media and NGOs, extensive participation, and central government oversight of local governments promotes local accountability (Godda, 2014).

All in all, soufflé theory is relevant as it provides an in-depth understanding of political decentralization. Devolved governance has been criticized due to several limitations despite the propositions of the Soufflé theorist that are in favor of decentralization. Saito (2001) posits that decentralization may foster more local loyalty to regional identities than the national identity. Therefore, this may encourage territorial secession in multi-ethnic and multi-religious societies and more autonomy from the central government particularly in Africa. This puts the national integrity itself at risk. Secondly, decentralization would not improve accountability as it may increase corruption at local.

Lastly, the increased effectiveness and efficiency of public resources may not be realized, since resources (capital, human, and even social) available at the local level in low-income countries are very limited. These scarce resources are more effectively utilized when they are concentrated at the national level. Therefore, decentralization may also hinder equity among different localities. In Kenya, the Soufflé theory is at the centre of devolution. The devolution process of the three powers (political, fiscal, and administrative) proposed by the Scouffle theory were achieved at once with the ratification of the constitution. Specifically, the theory provides an in-depth understanding of political decentralization, financial decentralization, and administrative decentralization exercised by County Governments in Kenya. This theory advocates for decentralization of fiscal resources, fiscal autonomy and fiscal decision making which informs the variable of budget control for devolved units and autonomy of the management of the devolved resources available to County Government.

2.2.3 Capital theory of devolution

Kangu **(**2011**)** argues that there are two approaches to the organization of governance and management of state power. First, the single-dimensional approach which follows a single horizontal dimension in its organization of governance and state power. This produces a unitary system and structure of government. It's based on centralization and concentration of power. Second, the multi-dimensional approach which organizes and manages governance and manages state power along multiple lines. It defines, distributes and constrains the use of state power along multiple lines.

It combines vertical and horizontal dimensions. It therefore forms foundation of federal systems and structures of government. It is founded upon the concept of devolution of power and decentralization.

2.2.4 Accountability Theory

According to Ostrom, Schroeder and Wynne (1993), the accountability theory advocates or suggests that decentralization is there to promote accountability in provision of service delivery and reduce corruption in the government. Since sub-national Governments are closer to the people, citizens are considered to be more aware of sub- National Governments' actions than they are of actions of the Central Government. Also, the resulting competition is to impose discipline on Sub-National Governments, as citizens averse to corruption may exit to alternative jurisdiction or providers between sub-national providers of public goods. Corruption represents a breakdown of cooperative behavior, in which the few collude to the detriment of all.

Devolving functions to smaller units that are closer to the population should, in theory, increase legitimacy and consensus concerning the choice of public services. This, in turn, can be expected to foster cooperation, vigilance, as well as acceptance of and adherence to rules of public sector integrity. This would be especially true where the financing of public services is devolved via the collection of user fees and the assignment of tax instruments. In

socially fractionalized nations or plural, the question then arises whether jurisdictions can be so designed so as to maximize social capital and social (ethno-linguistic) homogeneity, and therefore the desire to cooperate at the local level (Meagher, 1999).

2.2.5 Cost Recovery Theory

The cost recovery theory which emphasizes that making service more demand responsive through decentralization has added benefit that increases households' willingness to pay for services (Briscoe & Garn, 1995). Households are argued to be more willing to pay for and maintain services that match their demand: this is the flip side of the allocative efficiency coin. Moreover, a relatively close match between local demand and supply, if coupled with local cost-sharing or cost recovery, with transparency, can provide the incentives and information base for effective local monitoring.

The later helps to shrink the information asymmetries and leakages that can undercut both allocative efficiency and cost recovery and is a necessary ingredient in an overall anti-corruption strategy (Litvack & Seddon, 1999). On the other hand the allocative efficiency theory argues that the most common theoretical argument for decentralization is that it improves the efficiency of resource allocation. Decentralized levels of government have their reason in the provision of goods and services whose consumption is limited to their own jurisdictions. Decentralized provision increases economic welfare above that which results from the more uniform levels of such services that are likely under national provision as a result of tailoring outputs of such goods and services to the particular preferences and circumstances of their constituencies. The basic point here is simply that the efficient level of output of a local public good that is, that for which the sum of residents" marginal benefits equals marginal cost) is likely to vary across jurisdictions as a result of both differences in preferences and cost differentials (Oates, 1999).

Since Sub-National Governments are closer to the people than the Central Government, they are considered to have better information about the preferences of local populations than the Central Government (Musgrave, 1998). Hence, such governments, it is argued, are

better informed to respond to the variations in demands for goods and Services. Second, sub-national governments are also considered to be most responsive to the variations in demands for and cost of providing public goods. Decentralization is thought to increase the likelihood that Governments respond to the demand of the local population by promoting competition among Sub-National Governments (Tiebout, 1996).

Individuals are said to reveal their preferences for those goods by "voting with their feet." And moving to those jurisdictions that satisfy their tastes. This is as a result of competition among Sub-National Governments which individuals are said to reveal their preferences for those goods by moving to those jurisdictions that satisfy their tastes and allows for a variety of bundles of local public goods to be produced. This is seen to pressure Sub-National Governments to pay attention to the preferences of their constituents and tailor the service delivery accordingly, whilst risking the loss of tax revenues Breton (1996).

This "voting with feet" increases the likelihood that Governments satisfies the wishes of citizens, through enhancement of efficiency of resource allocation. Where geographic mobility is constrained, as in many developing and transition countries, alternative service providers such as private firms and NGOs are potentially important in providing exit options (Qian & Weingast, 1997).

2.3 Conceptual Framework

Conceptual framework is a description of the phenomenon under study accompanied by a visual or graphical depiction of the major variables of the study (Mugenda, 2008). According to Young (2009), conceptual framework is a diagrammatical representation that shows the relationship between the dependent variable and independent variables. The purpose of a conceptual framework is to assist the reader to quickly see the proposed relationship and hence it's used in this study. A study by Shorsh and Vernon (2007) on overlooking the conceptual framework concluded that a conceptual framework has a

critical role to play in research and examination process. This study was guided by the conceptual frame work illustrated in figure 2.1.

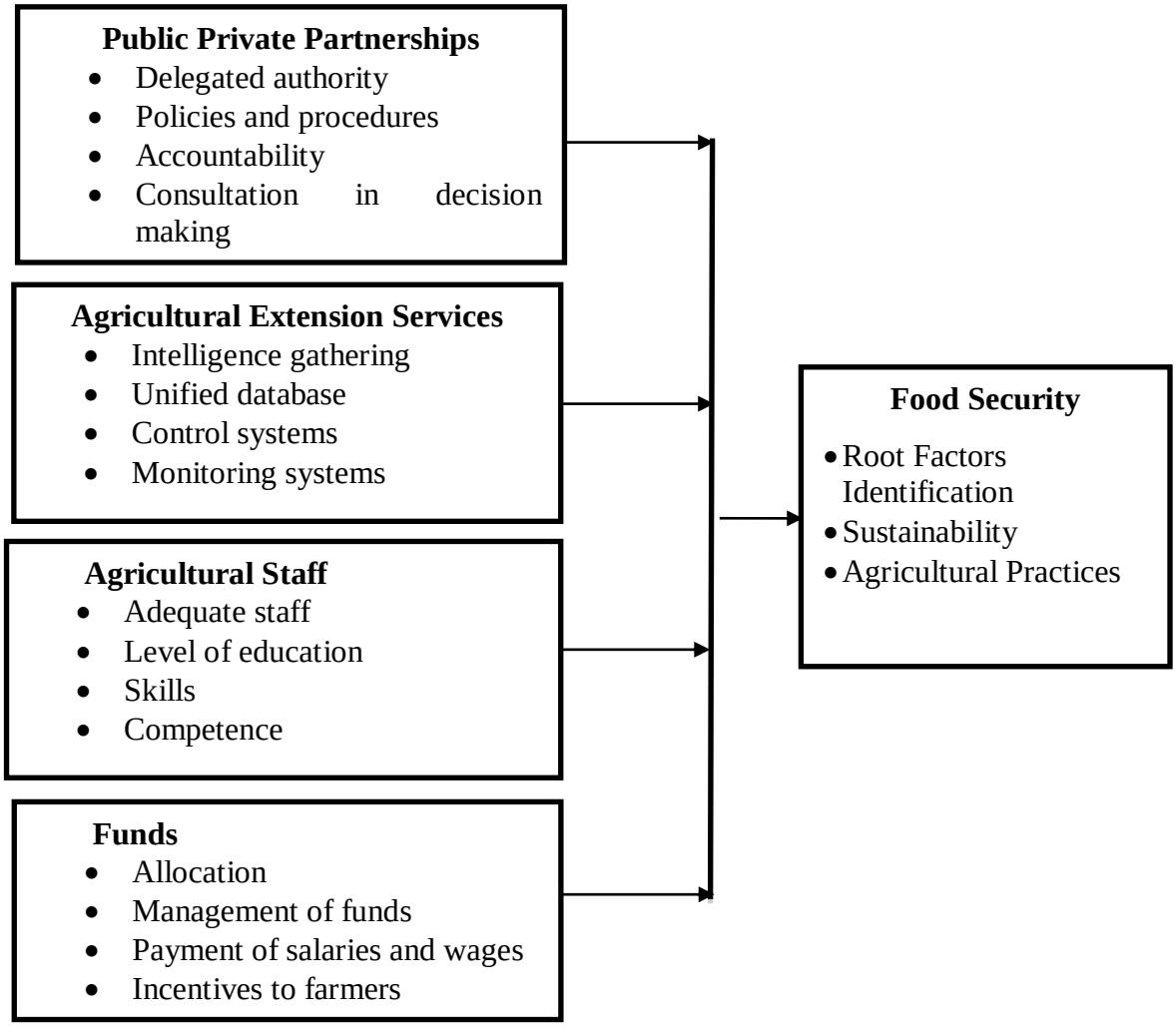

Figure 2.1: Conceptual Framework

2.3.1 Public Private Partnerships

Over the years, governments have ventured into innovative approaches for improving growth in the agricultural sector. Among these innovative approaches is establishing partnerships with the private sector actors like the business community, civil society, NGOs and many other entities. This Public Private Partnership (hereinafter referred to as

PPP) is the partnership between the government and the private sector which is aimed at financing, designing, implementing and operating public sector facilities and services. It allows the public sector to contract with private sector. A PPP is a Performance based contract under which the private Sector supplies public services over time and is paid by the public sector, end user or a hybrid of both. Output is specified by the Contracting Authority while input is the responsibility of the private sector.

Africa development Bank's PPP handbook (2008) recognizes the concept of PPP as a framework agreement between the government and the privates sector. This framework acknowledges and outlines the roles and obligations of each partner in the partnership. The government plays an active role in ensuring achievement of the country's objectives. On the other hand, the private partner ensures delivery of goods and services. World Economic Forum, McKinsey and Company (2013) in promoting public private partnerships in agriculture highlights the importance of such partnerships in modernization of the sector. It is suggested that agricultural modernization has huge benefits that ultimately leads to realization of sustainable agricultural development for all carders of farmers.

The concept of public private partnership in agriculture links to failure in markets and policy in delivery of goods and services and in essence food security and enabling environment for small-scale farmers in the rural arrears to practice effective farming. According to World Bank (2007), there is insufficient budgetary allocations for the agricultural sector by developing countries. This therefore calls for the importance of partnerships with the private sector to provide financial leverage for this sector. However, potential private entities fear the huge risks associated with agriculture investments in developing countries and thus PPPs are vital in spreading the risk and providing assurance to investors on their investments.

Over the years, Kenyans have expressed frustration at the perceived inefficiency of government departments and public bodies in delivering services. These concerns are especially experienced in cases where such public bodies enjoy a monopoly. It has been

suggested that, given a chance, private bodies could deliver more efficient services, sometimes at a cheaper cost. This rationale led to the enactment of the Public Private Partnerships Act. This Act was assented into law on 14th January, 2013 and commenced operation on the 8th February, 2013. This law was adopted in line with the national development program called "Vision 2030", which is currently implemented in Kenya.

This plan aims to transform Kenya into an "average-income country", particularly through the realization of key projects that require important funding, which, in practice, cannot be fully supported by the Government. Some of the agricultural activities that are under the operation of private sector in Uasin Gishu are like the Warehouse Receipt System (WRS), the upcoming Toyota Tsusho fertilizer plant. In animal health, veterinary clinical services and breeding services are conducted by the private sector and regulated by the government. By so doing essential services are availed to several farmers in different localities with much ease as opposed to the set up that is in existence in both national and county governments.

2.3.2 Agricultural Extension Services

Having effective systems streamlines process and helps reduce redundancy. An effective system ensures there is balance in the design and implementation within schedule, cost and quality constraints; synchronization of activities in terms of time, cost and scope; and coordinating human and material resources (Teece, 2009; Mwambah & Omwenga, 2015). An effective system is pegged on the following questions; how intelligence is gathered, existence of a unified database, if the organization has the systems it needs to run your department such as monitoring for customer satisfaction, how fast work is done in the organization. Also if there exists backup plans in case staff leaves and if they take with them a key part of your intelligence, the main systems that run the organization. An effective system should also define existence of policies, rules and controls.

The SRA (Republic of Kenya 2004) highlights lack of effectiveness in extension services as the main factor contributing to the slow agricultural growth in Kenya. There are two major types of public extension systems in Kenya. First is the government system focussing on food crops and livestock. The ministry of agriculture runs the government system. Secondly, is the commodity-based system that deals mainly with commercial crops on large scale. Government parastatals, outgrower companies and cooperatives run this system. Over the years, there have been concerns raised about performance of these systems. Their inefficacy in, lack of value for money, accountability and their inability to address the most urgent needs of the clients has been highlighted as the cause of poor performance in the sector (Republic of Kenya, 2005). Recent years have seen emergence of private agricultural extension system. This system arises from a partnership between the private and the public actors.

This system has come into existence because of the challenges faced by the public extension systems. This framework has been boosted and recognized by the government through development of NASNEP and its Implementation framework (Republic of Kenya, 2005a). Rivera et al. (2001) postulates that agricultural extension works in a knowledge system that encompasses different components for example, research and agricultural education. The agricultural extension services involve the dissemination of agricultural information to the farmer which then the farmer absorbs and implements in their farming practices.

Current sources of funding extension services come from the Government and the private sector. Government is still the main player in extension service provision though most of its funding has been mainly towards personnel emoluments with inadequate provisions for operations and maintenance. However, some programmes and projects have extension services funded as a core activity. For some of the commercial enterprises such as tea, coffee, sugar, pyrethrum, barley, tobacco, horticulture and dairy extension clients fully pay for the cost of extension services given by both the private (e.g. private companies and cooperatives) and service providers from quasi-public organizations.

The major constraints to financing extension service delivery include lack of a well-planned exit strategy in public sector extension services that encompasses sustainable privatization and commercialization, and lack of an enabling environment for the private sector to take an increasing role in provision of extension services. Modalities for contracting out some of the extension services though accepted in principle have not been defined. Meanwhile, declining public budgetary allocation for providing extension services and poor planning of extension service delivery have not helped the situation in utilization of human and financial resources efficiently.

The main challenges to ensuring sustainable funding to agricultural extension include increasing resources allocated to fund public extension services, improving planning, and coordinating the allocation of resources to extension by different stakeholders to minimize duplication and wastage.

Other aspects to be addressed include formulating a well-managed public sector financing and exit strategy. This include sustainable privatization and commercialization of extension services, designing a financing mechanism for extension services with better targeting especially for the marginalized and vulnerable groups, creating an enabling environment for the private sector to take an increasing role in provision of extension services, and developing modalities for identifying services and the mechanisms for contracting them out.

2.3.3 Staff

Staffs play an important role in adoption of devolved system of governance. This as well calls for commitment of staff in contributing to achievement of devolution objectives. To have efficient staff participation in adoption of devolved system of governance the following questions have to be answered; are the employee's eager to go above and beyond the call of duty while performing his or her duties ?(Iravo, 2013), are you staffed to serve customers adequately? Will the recruitment or retrenchment of one or two staff members change anything? How do you train and mentor employees?

Are your training methods effective? Can you give them any other skills or resources to do their job better? Are your staff members trained to do their jobs? What's holding them back from helping you grow your business? Are they "bought in" to seeing your business develop? What positions or specializations are represented within the team? What positions need to be filled? Are there gaps in required competencies? The institutional challenges in human resource development in general include improving the skills levels and scope of knowledge of extension personnel especially frontline or field extension workers. In addition, increasing the ratio of female extension personnel; and improving institutional capacity to train personnel (extension providers and researchers) on important emerging issues such as organic farming, biotechnology, and the characterization and selection of indigenous plants and animals of socio-economic importance.

2.3.4 Funds

Kenya is committed to honoring the Maputo 2003 declaration by allocating at least 10% of the annual budget to agricultural development. Although the budget allocation for the sector has been systematically increasing over the year, there has been a gradual decline to share to national resources. On the other hand, there has been an increased financial requirement for development in Agriculture. In order for counties to effectively deliver their agriculture functions, there is need for timely release of funds from the national government.

The counties in Kenya have been granted a certain degree of financial autonomy with the dawn of devolution and fiscal decentralization. However, counties have opted to extend huge investments to infrastructure projects with limited investments it the agriculture sector. According to the Medium Term Expenditure Framework of 2017/18-2019/20, the average share was 8 per cent, with 26 counties having a share below 8 per cent and only 11 counties with a share above 10 per cent. In addition, counties have to source for revenue to support their operations. The sources of county revenue in Kenya include revenue generated locally, revenue received from the national government or

revenue sourced externally. The sources of county revenue in Kenya are expressed in detail below. Article 209 (3) of the Constitution empowers the counties to impose two types of taxes and charges, that is, property rates and entertainment taxes.

In accordance to the stipulated laws the counties may also impose charges for any services they provide. All these monies from the revenues raised by the counties from their local sources and they constitute the local revenue. If increasing own source revenues does not seem to be a particular easy thing to do, reducing expenditures is also difficult. Local government's budgets are always tight as local leaders have more ideas about things they would like to do than resources to do them. At the same time, it may be easier to undertake politically difficult measures to increase own source revenues if local leaders can simultaneously demonstrate that they are bringing their expenditures under control by seriously seeking ways to economize (Abonyo, 2003).

Certainly, investors that are considering lending money to a local government will want to see evidence of fiscal responsibility, and successfully reducing expenditures is the gold standard for fiscal responsibility (Abonyo, 2003). County Governments spending can be classified into two basic types of expenditures that is discretional and non-discretional and all these expenditures must be funded from both funds from national government and locally generated revenues. Discretional expenditures are those that are not mandatory to be made during the budget year while non-discretionary expenditures are those that must be made within the budget year as they have legal binding commitments such as loan repayments, salaries and compensations (Hazel, 2005). Users Charges for utilities such as power, water and telecommunication, rental or lease agreements for facilities utilized to provide basic services for the residents have to be made during the financial year hence the demand for growing local revenues.

2.4 Empirical Review

Many countries have been motivated to adopt devolution by the need to decentralize decision making in order to develop need based programs in clear consultation with the people. After adopting devolution, the counties in Kenya became the focal points for agriculture service delivery. However, 7 years down the line, there is a need to thoroughly review and assess its outcomes. Has devolution been successful? Has it made extension services more accessible to farmers? Do local governments respond more favourably than before? What benefits farmers have gained out of it? These and other questions need to be answered.

Article 6(2) and 189 (1) of the Kenyan Constitution points the principles of distinctiveness and interdependence which characterize the nature of the devolved governance. The Articles introduced a cooperate system of government and presented the principles guiding the system. Article 189(1) (a) highlights the principle of distinctiveness that recognizes political, financial, functional and administrative autonomy of each level of government. Article 189(1) (a) in addition recognizes the need of interdependence between the different levels of government under the principle of interdependence.

The new constitution in realizing the bloated government significantly reduce the number of ministries. This led to the enactment of the Agriculture, Fisheries and Food Authority Act, 2013 (AFFA Act). The AFFA Act was to ease the discharge of devolved agricultural functions at the county and national level. To do this, the Act consolidated the regulation and promotion of agriculture. Part 1 and 2 of the Fourth Schedule of the Constitution provides the devolved administrative functions for agriculture. Section 29 of Part 1 provides that the National government's agricultural functions are purely policy related. Section 1 of Part 2 provides that the agricultural functions of the county government as agriculture. However, agriculture is not defined in the constitution.

According to the constitution, the counties' may discharge their function through the following sub sectors; crop and animal husbandry, livestock sale yards, abattoirs, disease control and fisheries. The constitution summarises the functions of the county and national governments as purely facilitators/providers and regulator respectively. However, AFFA Authority that was formed under the AFFA Act in a way contradicts the principle of distinctiveness of devolution. Critics have alluded that the Authority has assumed the facilitation of agriculture, which in fact are the functions of the counties. AFFA Authority also provides policy advice on agriculture to the national government, which in turn are to be followed by the counties. This washes away the autonomy of the county governments in facilitating agriculture.

The Agricultural Sector Development Strategy 2010–2020 (ASDS) outlines ways to transform the agricultural sector to encompass innovative, commercially-oriented and modern agricultural undertakings. The ASDS seeks to increase productivity, commercialization and competitiveness of agricultural commodities and enterprises; and, to develop and manage the key factors of production. In this context, the ASDS interventions will be implemented to increase productivity to enhance competitiveness; Improve the extension service system through manpower development, better utilization of ICT and efficiency in resource use. In addition, the ASDs will improve links among research, extension (both public and private) and the farmer and access to financial services and credit to rural areas. Also, they will encourage growth of agribusiness in marketing and processing / value addition and improve the regulatory framework to control the quality of agricultural inputs and services; Increase competitiveness in the supply of agricultural inputs and rationalize and harmonize taxation regimes to provide incentives to producers, agro processors and other service providers.

Agricultural extension is a means to alleviate poverty and ensure food security. It converts information into functional knowledge, which helps develop enterprises promoting productivity with income generation. In addition to technology transfer, agricultural extension provides access to small farmers and the rural poor living far from the urban centres to non-formal education and information services. While it can provide

these populations with services to increase their productivity, their food security will depend on institutional development and income-generation together with increased food crop output.

Agriculture extension is a bridge between research scientists and potential users of these findings. It helps in designing and undertaking the needs and problem-based research and at the same time enables farmers to adopt new knowledge and technologies. Agricultural extension is a hierarchic top-down system where decisions are taken by the top administration without much involvement of other stakeholders, and implemented by the field staff which does not fit well into the present day requirements of more progressive, intensive and integrated agriculture.

A study by Rivera and Qamar (2003) elucidates that agricultural extension services if implemented cautiously facilitate food security as it revolves around transfer of mono-crop technology to participatory problem solving educational approaches which reduces poverty and enhances food security. Rivera et al. (2001) postulates that governments of third world countries are characterized by new agricultural extension services uproars. Their findings are, there is a need to increase production to provide food security for all citizens, raising the income of the rural population and reducing poverty levels. There is also a need to effectively manage the natural resources in a sustainable way in a rapidly competitive world. Generally, the literature has not reached a consensus as to why extensions programs in Kenya have not been more successful. According to Khadingala and Mitulla (2004), discretional expenditures are expenditure that is not absolutely essential to the operations of local Government. This will include the expenditures such as hiring more staff, committing to other expenditure that had not been factored at the beginning of the budget year. The thin line between discretional and non-discretional is equally blurred since the expenditure item can change over the year as policy change is implemented.

Provision of extension service in the country is disadvantaged due to lack of sufficient funding. In Machakos County, for instance one extension officer supports 1500 farmers in one ward while the ideal number would be one extension officer in every-sub-location. Furthermore, budgets for extension services have been reduced to 4% which is less than 2% of the national budget while top-down policies employed by the government have led to less funding for research. Moreover, critical information on research carried out continue to gather dust in government offices at the expense of farmers and this is largely due to dwindling numbers of government extension workers.

Structure of extension service provision has changed since the devolved government came into place and thus the national government supports extension services only through implementation of various projects and policies whilst major responsibilities are however, left to the Counties. Extension officers are charged with policy-making in the counties. Extension officers should ideally enlighten farmers on issues such as emerging enterprises and markets; agro-processing and value-addition; value-chain management; relay researchable information and farmers' challenges to responsible officials and research institutions as well as network farmers with other stakeholders in the field. They are also responsible for regulating and ensuring quality inspection of inputs by collaborating with regulatory agencies. Nevertheless, there has been an emergence of private extension providers who try to fill in the gap of government officials. They have however, been accused of providing conflicting information that has seen instances where farmers implemented wrong agricultural practices that consequently led to poor yields.

Farmers have also hurriedly adopted new crops before doing market research which has led to huge losses. The National Agricultural Sectoral Programme and various other stakeholders in the private sector and NGOs continue to play a critical role in providing critical information to farmers. However, extension service provision challenges could be resolved when farmers organise themselves into groups as seen in the health sector which has used community health workers to revolutionize service provision.

A study of the federal state of India suggests that devolution of funds promotes government responsiveness in service delivery, especially if the media is very active at the local level (Besley & Burgess, 2002). Another study of Italy indicates that devolution may exacerbate regional disparities in public spending and economic outcomes (Calamai, 2009; Azfar et al., 2001) finds that local level is hampered by limited information. As a result, devolution does not achieve the desired effects of allocative efficiency. Scholars have identified several factors that may determine the efficiency of devolution frameworks. First, the establishment of the constitution and a legal framework that spells out the role of each level of government, including the rules governing fiscal arrangements and public service delivery, and mechanism for conflict resolution (Azfar et al., 2004). Second, the political framework governing the electoral process at the sub – national levels facilitates the direct participation of the users of services in the elections of political leaders. As a result, locally elected officials are compelled to pay keen attention to the demands of electorate at the local level.

Shah (2006) identifies matching grants and tax revenue assignments as incentives that may motivate the enhancement of fiscal effort at the sub– national levels of government. Fourth, to enhance the efficiency of decentralization, information (relating to the costs, beneficiaries, procurement and public service delivery) should be shared with the media, public and among the different levels of government. Fifth, the decentralization framework must allow citizen participation in service delivery (Azfar et al., 2004).

Through a mechanism similar to that of promoting inter territorial competition; devolution can often lead to increased inequality between the regions of a country. In a devolved system, spatial equality usually comes second to the main objective of promoting an economic dividend within each region (Agnew, 2000). By putting each in charge of its economic development and exposing it to competitive forces from its neighbors, devolution carries with it implicit fiscal, political and administrative costs which fall more heavily upon those regions with limited adjustment capacities, resulting in differential rates at which regions can capitalize upon the opportunities it offers and

leading to greater development of initially rich and powerful regions to the detriment of poorer areas (Rodriguez – Pose & Gill, 2004).

In addition, in so far as redistribution to minimize spatial disparities is a rate of the central government, the reduction of the latter's power and resources through the devolutionary process can reduce its capacity to correct such disparities and thus increase inter regional inequality (Prud'homme, 2005). Further, from a dynamic point of view, devolution can bring about regressiveness in the allocation of government expenditure, as the empowerment of the states in deciding how transfers are allocated gives disproportionate negotiating strength to the richer ones, whose degree of influence over the central government is higher, allowing them to secure a disproportionate share (Rodriguez- Pose & Gill, 2003).

A study in 2010 by Action Aid International-Kenya, "How are our Monies Spent? The public expenditure review in eight Constituencies, 2006-2008"5, indicated that the number of people living below the poverty line has increased with increase in allocations. The findings of the report indicated that there was a 30% increase of people living below the poverty line despite CDF and LATF funds. According to the Kenya Integrated Household Baseline Survey (KIHBS) 2005/06, Malindi had 65% of the people living below the poverty line in 2009 compared to 61% in 2006, while 83% of people in Galole were living below the poverty line in 2009 compared to 42% in 2006. In Mandera 90% of people was living below the poverty line in 2009 compared to 60% in 2006.

This dismal performance of the funds was attributed to persistent challenges, such as lack of effective participation of local communities in selecting, prioritizing and implementing development projects, poor public finance management at national and sub-national levels and lack of institutional monitoring and evaluation mechanisms among many others. The study further observed that weaknesses such as limited public oversight on existing resources, weak absorptive capacity, and mismanagement of the

funds at the sub-national levels have not translated into desired outcomes against poverty and inequality.

A study by the Parliamentary Budget Office, Kenya in 2011 revealed a lack of transparency and accountability in the management of these funds. In most of these funds, some expenditures and cash balances cannot be accounted for and there is continued failure in submitting documentary evidence on various transactions for audit purposes in consecutive years. This was attributed to lack of a single institution to coordinate the funds projects across the country and the lack of vertical and horizontal accountability by implementing agencies and government ministries.

According to Warner's (2003) Successful decentralization requires administrative and financial capacity and effective citizen participation, but many rural governments lack an adequate revenue base or sufficient professional management capacity. Rural residents have relied more on private markets than government for many services; however, rural areas have also suffered from under development due in part to uneven markets. Afzar et al. *(*2003); argues that in cases of limited local accountability or weak civil society, local officials who have greater discretion and opportunity in a devolved system may be subservient to the needs of local elites particularly when under direct pressure.

Donahue (2007), argues that decentralization is not, in fact, the solution to America's governance problems. There is little evidence that the public sector will be more efficient at the state level than it is the federal level. Instead, America should focus on the challenges of mitigating cynicism in government on the public's part and narrowing the gap between the benefits expected from government and citizen willingness to endure taxation. A study by Rivera and Qamar (2003) on Agricultural Extension, Rural development and the Food Security Challenge postulates that having agricultural extension officers is indispensable. They provide agricultural education, knowledge on the right use of agricultural inputs like seeds and fertilizers, treatment of livestock diseases, education on farm management and access to seeds and fertilizers from the

County government for free which in turn leads to enhancement of food security. Another study by Thiessen (2001) argues out that fiscal decentralization or devolution of funds can reinforce regional inequalities as well as it does not enhance food security.

Ezcurra and Pascal (2008) researched on Fiscal decentralization and regional disparities among several European Union countries and found that there is a negative correlation between devolution of funds and the level of food security, since devolution of funds from central government to County government generates a more balanced distribution of resources across regions. Such kind of argument has also been supported by Oates (2009) that devolution of funds contributes to food security. World Bank Group (IEG, 2014) argues that Public private partnerships is a way to optimize cost recovery by mobilizing private sector resources to cover the capital expenditure costs up front or at least most of it and make the public sector pay during delivery of the services.

By doing so, Public private partnerships provide performance incentives. The main advantage that Public private partnerships may offer over traditional public procurement is potential efficiency gains and better use of resources at the construction and maintenance phases. The importance of PPPs is reiterated by the paragraph 48 of the Addis Ababa Action Agenda (AAAA). The AAAA however highlights the importance of risk sharing and capacity building before formation of PPPs. Brinkerhoff and Brinkerhoff (2011) researched on Public-Private Partnerships and drew perspectives on Purposes, Publicness and Good Governance. The researchers concluded that public private partnership enhances efficiency and effectiveness through a reliance on comparative advantages, a rational division of labour, and resource mobilization.

It also provides a multi- actor, integrated resources and solutions required by the scope and nature of the problems being addressed. To move from a no - win situation among multiple actors to a compromise and potential win - win situation. It opens decision making processes to promote a broader operationalization of a public good and maximize representation and democratic processes. Findings drew from a study by Hodge and Greve (2007) on public private partnerships raises questions about the value

for money rationale, and documents governance and regulatory failures which in turn does not translate in to enhancement of food security. In practice, many public private partnerships may not achieve their intended public benefits, either due to poor implementation or skewed incentives or they may achieve unintended consequences.

Financing of public private partnerships debt and equity ratio is more expensive and where County governments are capable of achieving better terms, and experience with management contracts has apparently been disappointing with expected efficiency gains (Gantsho, 2010). Many County governments are either lacking administrative capacity or hesitating to fully involve at public private partnerships and establish the conditions for success, or cannot deal properly with the process of evaluating and awarding contracts. There is also the possibility that consumers experience possibly higher prices and connectivity fees in exchange of other benefits such as efficiency gains (OECD, 2005). Gundu (2005) researched on agricultural information diffusion to smallholders in Kenya and found that an effective extension information service is one that meets the farmers' needs and the content of the information is specific, simple, and useful.

2.5 Critique of the existing literature relevant to the study

Literature exists on devolution in Kenya. However, the existing literature is not comprehensive enough, thus warranting more studies on devolution with specific emphasis to agricultural activities. The studies that have previous been done on devolution of agricultural have not emphasised on the achievements of the policy recommendations in the various legal frameworks on devolution. The existing literature with specific emphasis to the studies that have been conducted are out dated, implying that circumstances and status might have changed thus the need to conduct this study to determine the current status of devolution of agricultural activities.

No study has been done on devolution and governance focussing on achievements of devolution based on the existing funds allocated to specific counties. It would be interesting in this study just to find out on how funding has influenced the performance of devolution in various sectors including agriculture. Likewise, there is not existing information on evaluation of skills gaps in the various counties, therefore this study will be an opportunity to determine if at all there are skills gaps in the various counties. The various legal frameworks on devolution have provided elaborate information on the policy measures on devolution, however there is no comprehensive information on the impact of devolved system of governance in the 47 counties.

There is a general acceptance that public private partnerships is a major boost for sustainable development in agriculture. However, the partnerships face difficulties with potentials of unsustainability due to act of evidence-based results. Oxfam (2014) points out the lack of clear partner section criteria and land allocation. This lack of transparency provides loopholes for land grabbing and displacement of small-scale farmers.

2.6 Research Gap

The gap identified on the adoption of the devolved system of governance in agriculture to enhance food security in Uasin Gishu County are laws and policies that are on a draft mode, for example the draft devolution policy that does not provide a guarantee on the implementation of the proposed policy measures. The study determined the extent of the draft policy implementation process. The key issues from the literature review that was looked at in the study include examining coordination and communication between the national government and the county governments for effective service delivery. The study looked at the capacity gaps in terms of human resource within the counties and its impact on the devolution process. The legal framework did not provide timelines for the enactment of the agricultural bills that are under discussions. The literature review established that a number of counties had not established the required structures to

embrace devolution; this was a key concern in the study since transition through the establishment of structures was required for effective implementation of devolution.

The study examined the funding that was released to the counties, based on the timeliness of the funding, adequacy and the appropriate use of funds.

2.7 Summary of the Literature Reviewed

This study takes a multiplicity of theories to provide the basic theoretical framework for analyzing the adoption of the devolved system of governance in agriculture to enhance food security in Uasin Gishu, Kenya. The theories included; Capital theory of devolution, Sequential theory of decentralization, Network theories of governance, Argumentative theories, Cultural theory, and Gender theory in political science to analyze the adoption of the devolved system of governance in agriculture to enhance food security. Capital theory of devolution argues that there are two approaches to the organization of governance and management of state power.

First, the single-dimensional approach is based on centralization and concentration of power. Second the multi-dimensional approach which is founded on the concept of decentralization and devolution of power. It was important in this study because it help understand the concept of devolution at county level and its impact on the various sectors such as agriculture. The sequential theory of decentralization is based on three main characteristics namely; decentralization is a process, it takes into account the territorial interests of bargaining actors, and it incorporates policy feedback effects.

This theory was important in this study as it helped understand the policy reforms that have been developed to help nature devolution at county level in terms of transfer of responsibility, resources, authority and administrative functions. Network theory of governance focuses on how actors and agencies come to form networks, what holds them together, what determines their choices and how they influence political decisions. This theory was useful in this study as it helped understand leadership and governance

system in the counties. The theory helped understand the leadership style in the various counties, and how the leadership style has helped in the adoption and nurturing of devolution. Argumentative theory focuses on the constitutive forces and formative conditions for the emergence and operation of particular governance regimes.

Argumentative approaches towards governance share an emphasis on language as a key feature of any policy process and thus as a necessary key component of governance and policy analysis. This theory was useful in determining the accommodative nature of the counties in service provision to all the communities living in the various counties. The Cultural theory of governance focuses on the changing behaviour of consumers and voters, the loosening of traditional social relations as well as of political affiliations and the transformation of society towards new cultural group patterns. This theory will be useful in determining the influence the community members have on the various counties.

The gender theory of governance points out how politics and policies structure and construct gender differences and gender inequalities. This theory will be useful in determining how gender has been factored in the governance and its contribution in enhancing food security. There is need to build a strong and sustainable revenue base and improve the Uasin Gishu, Trans Nzoia and Nandi Counties' food security. As an immediate strategy, the county governments need to make farm inputs accessible, affordable and, organize and build the capacity of farmers through agricultural extension services in order to encourage farming.

The extension services which are currently offered at the district level should be replicated to ward levels. High prices of farm inputs in addition to high cost of production and low prices of farm produce and, lack of knowledge on modern farming is an impediment to farming as a commercial business due to the losses incurred. The government should consider establishing fertilizer factory in future and build partnerships with seed companies, agricultural institutions both at the local and international levels so as to promote agricultural production. Market accessibility is

important to helping farmers increase their income, the counties' economic growth and sustainability (Kang'ethe & Gitu, 2004). There is a need therefore for the county governments to go beyond its borders to create market opportunities in other counties for its farmers' farm produce especially value added produce.

This boosted its chances of sustaining and growing its economic growth. This did not only improve the revenue base of the county but also livelihoods of its citizens. To help promote the agricultural sector the counties could invest in maize milling plants and fertilizer factories. Investment needs to be done on livestock farming, milk cooling and meat processing plants should be medium term priority to the county governments. The county governments need to improve the capacity of the existing facilities, such as slaughter houses and milk cooling plants. The North Rift is very rich in milk production due to the favorable climatic conditions that promotes dairy farming.

Owing to the poor road network and far flung markets, there is need for the county government to budget for milk cooling plants in the next financial year (Kimingi, 2014). This reduced wastage in the form of spoilt milk and ensures farmers get a return for their produce. The county governments need to build the capacity of pastoralists on agricultural extension services (livestock veterinary) so as to improve the quality of their livestock. According to World Bank (2015**)**, for counties to achieve their desired goals, a strategy ought to be in place supported by relevant policies and legislations. To be able to fully optimize agricultural development, counties needs enough funding from the central government and deal with budget allocation challenges. The counties can address the food security problems in the North rift and save the central government the perennial headache in distribution of relief food to its citizens.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter dealt with the research methodology that the study sought to employ in attempt to investigate the relationship between adoption of devolved agricultural system of governance and enhancement of food security in Uasin Gishu County. The chapter covered areas such as research design and philosophy, target population and the sampling frame to be employed, sampling techniques and the sample size. In addition, this chapter also covered the data collection instruments, pilot survey for the study and data collection procedures. Finally, the chapter ended up with the data processing and analysis.

3.2 Research Philosophy

Research philosophy can simply be defined as a belief about the way in which data about a phenomenon should be gathered, analyzed and used. For this Study, a Positivism research philosophy will be adopted. The choice for the positivism research design is supported by the principle underlying this philosophy. According to the principles of positivism, the philosophy depends on quantifiable observations that lead themselves to statistical analysis. It is noted that positivism is in accordance with the empiricist view that knowledge stems from human experience. This principle conforms to the nature of the Study in that it deals with the quantifiable observations. In this Study, the observer (field officers) was independent, with no any human interest in the Study. With regard to the progression of this Study, it was guided by the hypotheses in attempt to show the causality between independent variables and dependent variables. All these attributes of the Study apply for the positivism research philosophy hence its choice as the ideal research philosophy.

3.3 Research Design

In examining the adoption of the devolved agricultural systems and enhancement of food security in Uasin Gishu County, this study used a combination of descriptive survey and the causal research design. By adopting the descriptive survey, the study sought to give an account and description on what is the effect of devolution on food security in Uasin Gishu. According to Orodho et al. (2003), this option of research design is better than others in seeking the opinions and perceptions of the target population in this case the households. Also Collis and Hussey (2003) argue that this survey method offers opportunity to collect large quantities of data which can be used for statistical analysis that is representative of the whole population and make deductions about that population. Food security is a social issue; this type of the research design is preferred in this case because it is capable of identifying various research variables for the study thus necessitating hypothetical construction of the research models. In addition, the design was a ground breaking into the area of the study thus providing solid basis for the application of the other research designs, in this case the causal research design.

On the other hand, the study used the causal research designs to bring out the relationship between the factors outlined by the respondents with the main lifestyle improvement indicators on the various goals relating to food security. In this case, the causal research design sought to investigate the relationship between devolution and food security. The application of causal research design in the study was adopted mainly for two reasons, first it helps in understanding which variables are the cause, and which variables are the effect and secondly, it aided in determining the nature of the relationship between the causal variables and the effect predicted.

3.4 Target Population

According to Mugenda and Mugenda, (2003) target population is defined as the total number or the entire group of individuals, events or objects that the researcher wishes to study. The target population was households of six sub counties in Uasin Gishu County. From this definition, the target population for the study is the entire population of Uasin Gishu which currently stands at 622,705 persons distributed within approximately 116083 households as at 2009 national census (KNBS, 2009).

3.5 Sampling Frame

The Study recognizes the dynamism surrounding the area of research. This is because, the Study in its attempt to realize the stated objectives, targeted individual households. The Study used the administrative units mainly the sub-county as the clusters for the sampling process. This is informed by the fact that the Agricultural extension services are implemented via the sub-counties.

Table 3.1: Target population

Name of Sub-county	No. of households
TURBO	26,317
MOIBEN	19,023
KAPSARET	16,242
KESSES	17,766
AINABKOI	11,652
SOY	25,083
Total Population	**116,083**

Source: KNBS, 2009

3.6 Sampling Techniques and Sample size

3.6.1 Sampling Techniques

A sample is defined as a representative portion of the entire target population the researcher wishes to study. In selecting the sample, there is need to pay lot of attention and be objective as much as possible so as to ensure that the sample is a good representation of the entire population (Kothari, 2004). A sample that fully represents the population yields credible results which can be generalized for the entire study population. However, any sample that falls short of fully representing the entire population yields biased results which cannot be replicated for the entire population. Sampling technique on the other hand refers to the technique of the process used in selecting a sample out of the population for the study.

Sampling techniques are generally classified into two: a probabilistic sampling technique where the probability of an element is chosen for the inclusion into the sample is scientifically determined and secondly the non – probabilistic techniques where the probability of an element is chosen for the inclusion into the sample is non - scientifically determined. Probability sampling techniques include: simple random sampling, stratified random sampling, systematic random sampling, cluster sampling and multi – stage sampling (Cooper, Schindler, & Sun, 2006). On the other hand, non – probability sampling techniques include: purposive sampling, convenience sampling, quota sampling and snow ball sampling. This Study applied both the probabilistic and non-probabilistic sampling techniques. For the choice of the households' sample, cluster and simple random sampling was applied implying that each household has an equal chance of being selected for the inclusion into the sample First the population was clustered into the administrative units implying that there are 6 clusters since Uasin Gishu has six sub-counties. Simple random sampling was then applied to select the household whom questionnaires were issued.

3.6.2 Sample Size

In selecting the sample size the following formula by Cochran (1963) was adopted to ensure objectivity in the selection as given below:

n = (Z-score) ² * p*(1-p) / (margin of error) ²

The first step is to calculate the sample size for infinite populations. n = (Z-score) ² * p*(1-p) / (margin of error) ² n = (1.96)² * 0.5*(1-0.5) / (0.05)² n = 3.8416 * 0.25 / 0.0025 n = 384.16

(Z-score is 1.96 for a 95% confidence level)

Then you need to adjust it to your specific population.n adjusted = (n) / 1 + [(n – 1) / population]n adjusted = 384.16 / 1 + ((384.16 – 1) / 116083) n adjusted = 384.16 / 1.003309356 n adjusted = 382.89. The sample size becomes 383 households.

3.7 Data Collection Instruments

The Study mainly utilized the primary data in its analysis. As such the study sought to collect primary data using the household questionnaire. This entailed the use of structured household questionnaires. The questionnaires were administered to selected households within the county in attempt to establish effect of devolved agricultural systems and enhancement of food security in Uasin Gishu County in Kenya.

3.8 Data Collection Procedures

Prior to the actual field work, reconnaissance trip was done to the area of the Study during the pilot study. This is critical in familiarizing with the area of Study and the distance among the selected county locations. In addition it is core in identifying the settlement patterns in the area for ease of determining the sampling of the various households to be issued with the questionnaires. In addition courtesy call to the county administrators, the in – charge of the agricultural services targeting food security to be

studied was done in attempt to seek the consent from the relevant authorities prior to the actual field work. This informed the relevant authorities on the intended purpose of the study and the expected output thus avoiding cases of non – response from some client thus promoting the buy in of the county administration. This was core in increasing the response rate to the questionnaires during the actual field work.

3.9 Pilot Study

The pilot study helps the Researcher to find out any flaws in the document and modify the same in order to validate it. According to Saunders et al. (2003), the purpose of the pilot survey is to refine the instruments so that the respondents do not have a problem in answering the questions and also provide for easy recording and analysis of data. In addition this helped to assess the validity of the instruments and the reliability of the data that was collected.

Reliability is concerned with the degree to which an instrument is free from error, hence yields consistent results, while validity is extent to which research findings accurately represent reality and yield the same results every time it is administered (Collins & Hussey, 2003). Pretesting was done in Chesumei sub county, Nandi County which did not participate in the main Study. The sample size for the pilot survey was justified because (Mugenda & Mugenda, 2003), suggested that 10 to 30 participants are sufficient to pilot study in survey research.

Pilot survey therefore entailed ensuring that the tools for data collection are capable of measuring what they intended to measure and that they yield consistent results upon re-administration to the same respondents. For the pilot survey, questionnaires were administered to 30 households. The responses were then analyzed. Then same questionnaires were administered again to the same households after two weeks. The responses on the second round were then compared to the responses in the first round to ascertain as to whether the questionnaires were capable of producing consistent data

overtime. The pilot study was therefore called out to ensure research validity and reliability.

3.9.1 Validity of Instruments

The household questionnaires were pilot tested to determine whether the questions are clearly understood by the sampled households. Any areas needing correction and clarification with regard to questionnaires were corrected after the pilot study but prior to the actual field work. Turning to the validity of research instrument, this can be defined as the extent to which a test or instrument measures what it is intended or supposed to measure (Mbwesa, 2006). This study adopted content validity. Here there is agreement that a scale logically appears to reflect accurately what it purports to measure. This ensures that the instrument is covering what it is intended to cover (Mbwesa, 2006). Factor analysis was performed to assess convergent validity. If all the individual loadings were above the minimum of 0.5 recommended by Hair et al. (2007), then the instrument was good to be used. The pilot study was carried out on households in Nandi County.

3.9.2 Reliability of Instruments

Reliability of research instruments refers to the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda & Mugenda, 2007). To ensure reliability in data collection the questionnaire was administered twice at an interval of two weeks. The outcome of the test retest method assisted in revising the questionnaire to make sure that it covered the objectives of the study (Fraenkel & Wallen, 2006). The questionnaire included some questions linked to each other to gauge on the consistency of the responses hence avoiding any contradicting responses by the respondent.

Any questionnaire found to have contradicting responses with regard to the linked questions were dropped out during the questionnaire screening upon the conclusion of the data collection exercise. Reliability of the instrument was tested using Cronbach`s alpha coefficient where a threshold value of greater than or equal to 0.7 was used. A coefficient above or equal to 0.70 is considered sufficient for most cases (Sreevidya & Sunitha, 2011).

3.10 Data Analysis and Presentation

3.10.1 Data Analysis

Data analysis refers to examining the data collected in a survey or experiment, and making deductions and inferences (Kombo & Tromp, 2006). It also refers to a variety of activities and processes that a researcher administers to a database in order to draw conclusions and make certain decisions regarding the data collected from the field. Therefore, data analysis involves summarizing of raw data, categorizing, rearranging and ordering data (Mbwesa, 2006).

Upon collection of the data from the field, first the questionnaires were carefully evaluated in order to filter the questionnaires whose responses are inconsistent. After this the data from the remaining questionnaires were coded to transform the data collected into numerical form for the ease of analysis. Upon coding the data, the descriptive statistics were computed in order to give a clear overview of the data collected. This was presented in form of mean values, standard deviations, skewness and kurtosis values. In addition frequency tables were also reported.

In order to establish the effect of devolution of agricultural systems and food security in Uasin Gishu County, regression analysis was also done. Given that the data from the field was mainly qualitative, the data was coded into binary data implying that binary probabilistic models will be of importance in achieving the study objectives. More specifically, the probit model was applied in modeling.The dependent variable

Enhancement of food security which is donated by Y. Our general representation of the model is given as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots\ldots\ldots\ldots + \beta_K X_K + \varepsilon_i$$

$$\mathrm{Y} = X_i \beta + \varepsilon_i$$

Where: Y represents enhancement of food security

Xi represents the Staff

β_0 An β_{1-k} are estimable parameters

ε Is the error term

In this case:

Y = 1; if Food security enhancement increases as a result of the devolved functions, and Y = 0; if otherwise

Therefore,

$$y_i = \begin{Bmatrix} 1 - if \ldots y_i^* > 0 \\ 0 - if \ldots y_i^* \leq 0 \end{Bmatrix}$$

The probit model probability distribution function is given by:

$$\mathrm{P}\ (\mathrm{Y}=1/\ \mathrm{X}) = \mathrm{F}\ (\mathrm{XB}) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{XB} e^{\frac{-(XB)^2}{2}} dx$$

Where:

$X = (X_1, X_2, \ldots\ldots\ldots\ldots X_k)$

$\beta' = \beta_0, \beta_1, \ldots\ldots\ldots\beta_k)$

The cumulative distribution function is therefore given by:

$$\Pr(Y = 1/X) = \phi(X'B)$$

For this model the probability estimated falls between 0 and 1. Therefore, the Study sought to determine the effect of devolved agricultural systems on food security in Uasin Gishu County. This was attained by determining the probability that Y =1 conditional to the value taken by the independent variables. As per the nature of the study four different empirical models were estimated as per the four devolved functions. In overall, for data analysis Statistical package for social sciences software version 20 was used to carry out the analysis. Upon establishing the various effects discussion of the results were done in attempt to draw conclusions, policy implications and the possible recommendation arising from the results of the data analysis. Inferential statistics such as multiple linear regressions and correlation were used to establish the relationship between the selected variables and for hypothesis testing.

The assumptions of multiple linear regression models were: The regression model was based on five key assumptions; Linear relationship, normality, multicollinearity, Independence of residuals and Homoscedasticity. First linear regression needs the relationship between the independent and dependent variables to be linear. This was tested with scatter plots so as to visualize the relationships. Residuals for the observation in the data set were plotted on the vertical axis against the predicted variable/fitted value. The residual plots should show a random distribution of positive and negative values across the entire range of the variable plotted on the horizontal axis. If the residual

points are scattered without an obvious pattern, then the linear concept is upheld (Lind, Marchal, & Wathen, 2012).

Multicollinearity implies that there is no perfect linear relationship between explanatory variables. This can be verified using variance inflation factor (VIF) and a metric computed for every x variable that goes into a linear model. A tolerance of below 0.10 or a VIF greater than 10 is regarded as indicative of serious multicollinearity problems. Tolerance below 0.2 indicates a potential problem. When tolerance is close to 1 it implies that there is little multicollinearity. If tolerance is close to 0, it indicates that multicollinearity may be a threat (Field, 2009; Williams, 2015). A VIF greater than 10 is considered unsatisfactory hence the independent variable should be removed from the analysis (Lind, Marchal, & Wathen, 2012).

Independence of residuals means that successive observations of the dependent variable are not correlated. This indicates that successive residuals have no pattern and are not highly correlated and there are no long runs of positive or negative residuals. Independence of residuals was tested by performing a Chi-Square test of independence. The frequency of each category for one nominal variable was compared across the categories of the second nominal variable. The data was displayed in a contingency table where each row represented a category for one variable and each column represented a category for the other variable.

The null hypothesis for this tested that there is no relationship between the variables. The alternative hypothesis for the test was that there is a relationship between the variables being tested. Homoscedasticity assumption implies that the variation in the residuals is the same for both large and small values of the predicted value of the dependent variable. This was tested by plotting the residuals against the fitted values of the independent variables.

The normality assumption implies that residuals are normally distributed and have a mean of zero. To find out whether residuals follow a normal probability distribution, histograms and normal probability plots was used. The histogram showed frequencies and the residuals on the vertical and horizontal axes respectively. A normal probability plot showed cumulative percentages and residuals on the vertical and horizontal axes respectively. If the plotted points of residuals in the normal probability plot are fairly close to a straight line drawn from the lower left to the upper right of the graph, there is no reason to doubt that the residuals are normally distributed (Lind, Marchal, & Wathen, 2012).

The regression equation of y on x includes:

$$Y = \beta o + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + e$$

Where;

X_1 = Public private partnership; X_2 = Agricultural extension services;

X_3 = Agricultural staff; X_4 = Devolved Funds

Y is the dependent variable, e = error term; $\beta 0$ = y intercept; β_1, $\beta 2$, β_3, β_4 = coefficients of x_1, x_2.x_3, x_4 respectively. A confidence level of 99% was considered that is a 1% level of significance, if the P value is greater than 0.01 we fail to accept the null hypothesis and if it is less than 0.01 we accept the null hypothesis that there is no significant relationship between the constructs of independent variable and the constructs of the dependent variable, r square was used to assess whether all of the constructs of independent variable had an effect on the dependent variable

3.10.2 Data Presentation

Upon the analysis of the data the results was presented in a number of ways. First tables on the descriptive statistic as well as the mean, median, variance, standard deviation, kurtosis and skewness statistics were presented. In addition, the tables on the regression results were presented as well. The regression output tables entailed the estimated coefficients of the model parameters, their respective standard errors, t – statistics, respective p – values and the respective confidence level values. In addition the tables entailed the general statistics on the overall tests statistics, the total number of observations among others. Frequency tables and cross tabulation table on the respective variables deemed to have some relationships of importance to the study were presented as well. The tables on the marginal effects were also presented to determine the magnitude of the effect of the independent variables on the dependent variable.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents data analysis, interpretation and discussions on adoption of devolved agricultural system of governance and enhancement of food security in Uasin Gishu County. The basis of analysis is households. The main objective of the study was to determine the relationship between adoption of devolved agricultural system of governance and enhancement of food security in Uasin Gishu County.

4.2 Pilot Study Results

A sample size of thirty households was used for pilot testing. Twenty six questionnaires were completely filled and hence were used for analysis. The results of the pilot study were summarized as stated below. In regards to public private partnership, it was found that delegated authority helps to improve food security in the county. The item recorded a mean of 3.9615. The skewness value was -.961 which indicates a negative distribution with an asymmetric tail extending toward more negative values. The kurtosis value was -.194 indicating the values are not widely spread around the mean. Additionally, Collaboration and action between the public and private sectors could spur inclusive and sustainable economic growth had a mean of 4.0385. The skewness value was -.007 implying a negative distribution with an asymmetric tail extending toward more negative values. The kurtosis value recorded was .137 indicating that the values are not widely spread around the mean.

Besides, majority of the respondents acknowledged that framework of policies and procedures that guide PPPs enhances food security in our county. This was informed with a mean of 3.9615. The item was negatively skewed to a magnitude of -.639 with an asymmetric tail extending toward more negative values. It had a kurtosis value of 1.152. The results revealed that focusing on public private partnerships' majority of the

respondents elucidated accountability through collaborative mechanisms in which public organizations and private entities share resources, knowledge, and risks helps to achieve more efficiency in the production and delivery of products and services. The itemized mean value was 3.8077 and the item was negatively skewed (-2.099) and 5.193 indicating that the values are widely spread around the mean, informed by a kurtosis value of 5.193. Furthermore, consultation in decision making between public private partnerships and the county in which a business and the government invest in a project together to provide a public service can increase the scale of assistance to people had a mean of 3.9231. The item was negatively skewed with a mean of – 2.002 and it was widely spread around the mean (5.866).

In relation to agricultural extension services, intelligence gathering through devolved extension services enables devolved staff and county government make informed decisions that boost food security in the county had a mean of 3.8462. The item was negatively skewed (-.589) and was not widely spread around the mean (.250). Unified database provides a platform for data analytics for better decision thus improving food security had a mean of 3.8462. The item was negatively skewed (- 1.584) and was widely spread around the mean (3.869). Furthermore, control systems such as promotion of climate- friendly agricultural production systems and land-use policies at a scale to help mitigate climate change had a mean of 3.7308. It was negatively skewed (- 1.068) was widely spread around the mean.

Supporting of farmers in developing diversified and resilient eco- agriculture systems provides critical ecosystem services in the county thus enhancement of food security. The itemized mean value was 4.0385. The skewness value was – 2.314 indicating that extreme values below the mean are further away than the extreme values above the mean. The kurtosis value was 9. 481 indicating that the values are widely spread around the mean. Most of the respondents were informed about devolved agricultural staff and enhancement of food security. The devolved agricultural staff challenges they anticipate were, the size of devolved agricultural staff in the county which had a mean of 3.5769, skewness of -. 406 which indicates a negative distribution with an asymmetric tail

extending toward more negative values. The kurtosis value was – 1.173 indicating that the values are not widely spread around the mean.

Table 4.1: Public Private Partnership, Agricultural Extension Services & Devolved Agricultural Staff Pilot Results

N = 26	Min	Max	Mean	Skewness	Kurtosis
Public Private Partnership					
Delegated authority has helped to improve food security.	2.00	5.00	3.9615	-.961	-.194
Collaboration & action spurs sustainable economic growth.	3.00	5.00	4.0385	-.007	.137
Our county has a framework of policies and procedures that guide PPPs.	2.00	5.00	3.9615	-.639	1.152
Accountability helps to achieve more efficiency in production.	1.00	5.00	3.8077	-2.099	5.193
Consultation in decision making can increase the scale of assistance to people	1.00	5.00	3.9231	-2.002	5.866
Agricultural Extension Services					
Intelligence gathering boosts food security in the county	2.00	5.00	3.8462	-.589	.250
Unified database improves food security	1.00	5.00	3.8462	-1.584	3.869
Control systems helps to mitigate climate change	1.00	5.00	3.7308	-1.068	1.436
Supporting farmers provides critical ecosystem services in the county.	1.00	5.00	4.0385	-2.314	9.481
Monitoring systems provide necessary information for building sound policies.	1.00	5.00	4.0385	-1.935	6.846
Forecasting minimizes the impact of the food crisis	1.00	5.00	3.9231	-1.815	4.006
Devolved Agricultural Staff					
The size of devolved agricultural staff is key factor in food sustainability.	2.00	5.00	3.5769	-.406	-1.173
Level of education determines the quality & success of food security.	2.00	5.00	3.8077	-.680	-.630
Addressing the interdisplinary challenges requires high level skills	3.00	5.00	4.0385	-.007	.137
The county cannot succeed without skilled and well qualified staff.	2.00	5.00	4.3077	-1.224	2.488
Competence of the devolved agricultural staff is an essential ingredient	2.00	5.00	4.1538	-1.036	3.200
Building capacity enables the county to meet its food security challenges	1.00	5.00	4.1923	-2.092	7.324
Targeting young researchers is a priority of the enhancing food security	2.00	5.00	4.0769	-.758	1.201

Additionally, on the level of education it had a mean of 3.8077 and it was negatively skewed (– .680). Y and the kurtosis value were – .630 indicating the values are widely spread around the mean. Besides, interdisciplinary challenges had a mean of 4.0385 and it was negatively skewed (- .007). The values of the item were not widely spread around the mean (.173). The study revealed that the county cannot succeed in the long run without skilled and well-qualified staff and institutions to provide right incentives for, motivate, and manage these efforts. The item realized a mean of 4.3077 and it was negatively skewed (– 1.224). The values were widely spread around the mean (2.488).

In a bid to establish whether devolved funds enhances food security, it was noted that allocation of funds should be prioritized for eligible nonprofits, food program service providers in need of a one-time infusion of assistance for projects that promote self-sufficiency and food security. The mean of the item was 4.3085 the skewness value was -1.191 and the kurtosis of the item was 2.402. Additionally, management of funds and large increases in agricultural investment are needed both to raise incomes and increase the supply of food sustainably, had an itemized mean of 4.0769. The item was positively skewed (-2.204) and the values were widely spread around the mean. Further, on proper skills, offering good remuneration wages and funding can help protect rural, low-income families from food insecurity. The item had a mean of 4.00000, it was negatively skewed (-1.961) and was widely spread around the mean.

In regards to, incentives to farmers such as farmers' market incentives improve food security in the county. The item had a mean of 4.0385 and was negatively skewed. The values were widely spread around the mean (4.537). In relation to increase in food security funded projects increase agricultural productivity and the availability and accessibility of safe and nutritious food. The item had a mean value of 3.9231, it was negatively skewed (- 1.679) and widely spread around the mean. Finally, offering incentive vouchers enhance purchasing power of low-income households recorded a mean value of 4.000. The values were negatively skewed and widely spread around the mean. Most of the questions asked in the pilot study were effective and were used again in collection of the final data used in analysis as shown in Table 4.2:

Table 4.2: Devolved Funds Pilot Study Results

N = 26	Min	Max	Mean	Skewness	Kurtosis
Allocation of funds should be prioritized for food security	2.00	5.00	4.0385	-1.191	2.402
Management of funds and large increases in agricultural investment can increase the supply of food sustainability	1.00	5.00	4.0769	-2.204	8.674
Proper skills, offering good remuneration wages & funding can help protect rural, low income families from food insecurity in the county	1.000	5.00	4.0000	-1.961	4.599
Incentives to farmers improves food security in the county	1.00	5.00	4.0385	-1.773	4.537
Increase in food security funded projects increase agricultural productivity	1.00	5.00	3.9231	-1.679	4.261
Offering incentive vouchers enhance purchasing power of low income households	2.00	5.00	4.0000	-.851	.725
Devolved agricultural system of governance leads to sustainability	2.00	5.00	4.1923	-1.054	2.866
A positive relationship exists between devolved agricultural system of governance and food security	1.00	5.00	4.1154	-2.136	8.071
Devolved agricultural system of governance leads to food systems	1.00	5.00	4.0769	-1.877	6.327

Confirmatory factor analysis was first conducted on the data to check reliability of the research instruments to ensure they were consistent with the study. The study established that the variables were highly consistent with study. The Cronbach coefficients alpha was at 0.717 (71.7%) which was above the minimum required value of 0.7(70%). This ascertained that the research tools were reliable and hence further analysis could be done.

Table 4.3: Reliability analysis of each variable

Item	Cronbach's alpha	No. of items
Food security	.728	3
Public private partnerships	.729	6
Agricultural Extension Service	.685	6
Devolved Staff	.742	7
Devolved Funds	.700	6
Composite	.717	28

4.3 Response Rate

The study focused on selected households in Uasin Gishu County. The study examined a total of 383 respondents across the six sub counties in Uasin Gishu County, where 383 questionnaires were issued. Of the 383, 380 questionnaires were returned of which 27 were incomplete. This narrowed down to 353 completed questionnaires indicating a response rate of 92% as summarized in the table 4.4 below;

Table 4.4: Response rate

Questionnaire issued	**Questionnaire returned**	**Incomplete Questionnaires**	**Complete Questionnaires**	**Response rate**
383	380	27	353	92%

Primary data was collected through structured questionnaires of households of Uasin Gishu County. Additional information about the respondents is as elucidated below;

4.4 Background information of the respondents

Background information of the respondent serves a great purpose in giving a grim light as far as the sample population and the research topic is concerned. The following were the findings of the study as summarized in Figure 4.1. Out of the 353 respondents issued with questionnaire in the study, 201 were male while the remaining 152 were female. This accounted for 56.9% and 43.1% respectively. This implies that majority of the households who have developed great interest in the adoption of devolved agricultural system and enhancement of food security are of male gender.

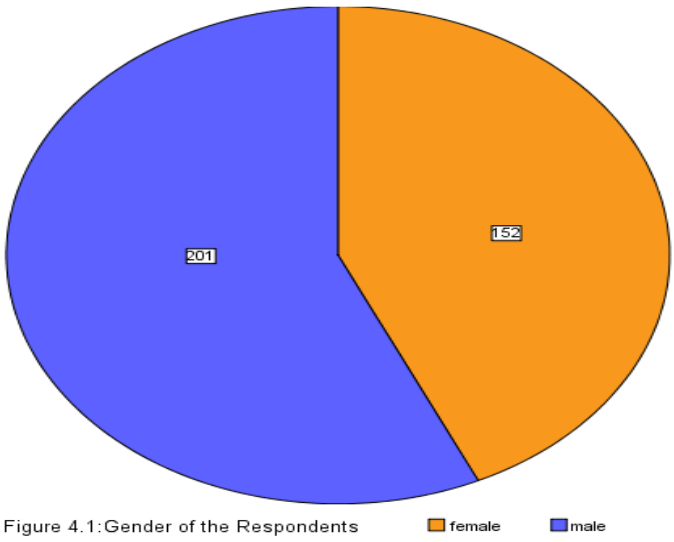

Figure 4.1: Gender of Respondents

All respondents were willing to disclose their ages without problems. One's age is always related to experience and understanding of a given issues of interest. Individuals of different age groups usually have different opinions of a given topic of study and this provides comprehensive data on the topic from all dimensions. Most of the respondent ages ranged between 31- 40 years which comprised of 152(43.1%), 115(32.6%) were

aged between 20 – 30 years, 64(40.5%) were aged 40-50 years, 6(1.7%) were below 20 years, 16(4.5%) were over 50 years as shown in the Figure 4.2. These implies that majority of the respondents in this study were aged between 31 to 40 years. It is the age which majority of them engages in agricultural activities and are aware of the devolved agricultural system. They had substantial information of food security in Uasin Gishu County.

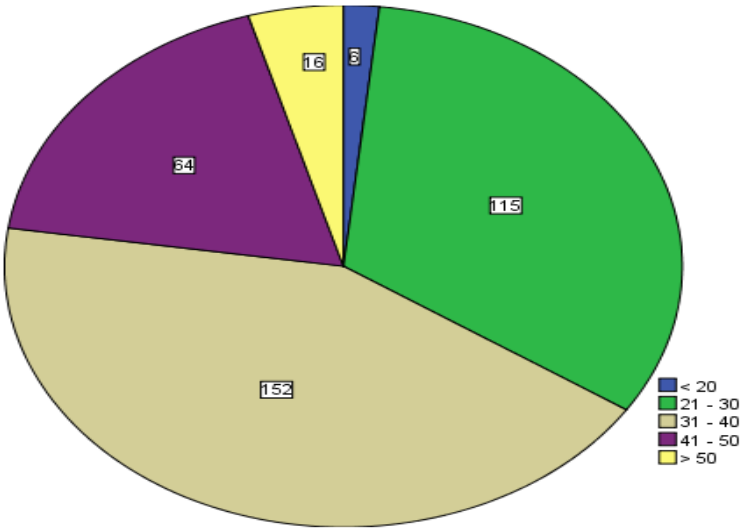

Figure 4.2: Age of the Respondents

Figure 4.2: Age of the Respondents

Marital status was operationally defined using four intermediate variables mainly married, single, divorced, separated and widowed. Majority of the respondents were married. This was ascertained by 199(56.4%) of the respondents. 98(27.8%) were single, 19 (5.4%) had divorced, 16 (4.5%) were widowed. This implies majority of married people engage in dairy farming and were better placed to provide information on the

relationship between adoption of devolved agricultural system of governance and enhancement of food security as shown in Figure 4.3:

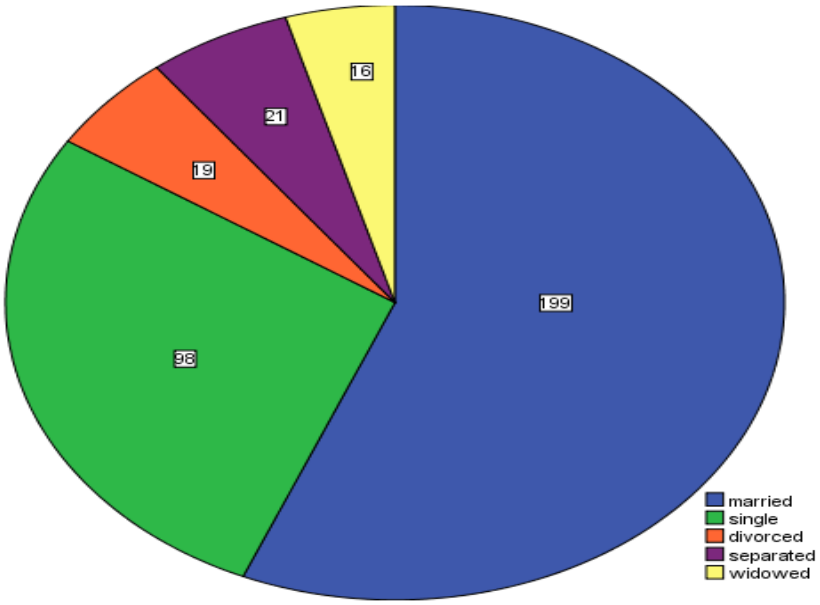

Figure 4.3: Marital Status of the Respondents

Figure 4.3: Marital Status of the Respondents

Level of education was operationally defined using eight intermediate variables mainly never went to school, nursery, primary, secondary, vocational, diploma, degree and master level. There was no problem in the statement of one's level of education therefore all respondents disclosed this vital information. Ones level of education provides a good picture of how one understands the topic of study. Furthermore education level can provide a clue on how individuals are willing to contribute to the development of research knowledge on a given area. Majority of the respondents had a secondary level of education. This was ascertained by 84(23.8%) of the respondents. 6(1.7%) never went to school, 8 (2.3%) nursery school, 74 (21.0) had vocational

training, 61(17.3%) a diploma, 66 (18.7%) had a university degree and 17 (4.8%) had a master's degree as shown in Figure 4.4 below:

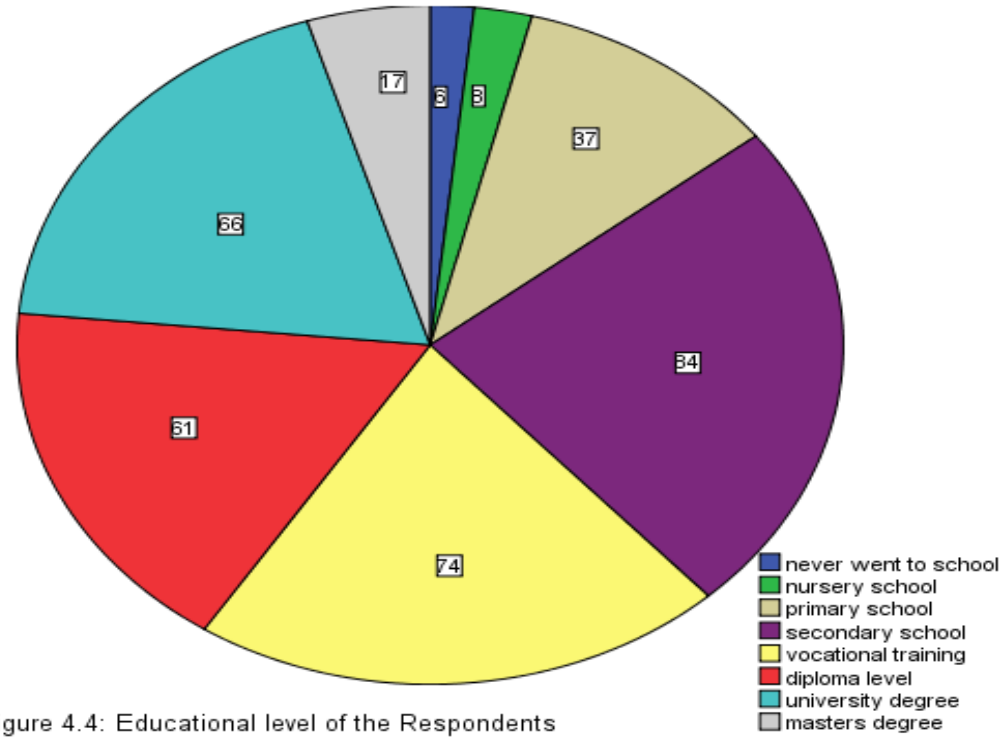

Figure 4.4: Educational level of the Respondents

Figure 4.4: Educational Level of the Respondents

Another variable of interest sought to examine the source of livelihood of the households. Source of livelihood is important as it helps explain the respondent's knowledge on important issues of devolved agricultural system of governance in Uasin Gishu County; in this case it helps explain households awareness on food security and adoption of devolved agricultural system of governance employed. Majority of the respondents, 31.2 % (110) engaged in farming. 21.0% (74) practiced livestock keeping, 9.3% (33) owned large business enterprises, 18.0 % (65) practiced small scale trade,

0.6% (2) engaged in firewood or charcoal production, 2.3% (8) had cooperatives, 4.0 (14) were involved in daily labour while 1.4% (5) had other sources of livelihood as shown in Figure 4.5 below:

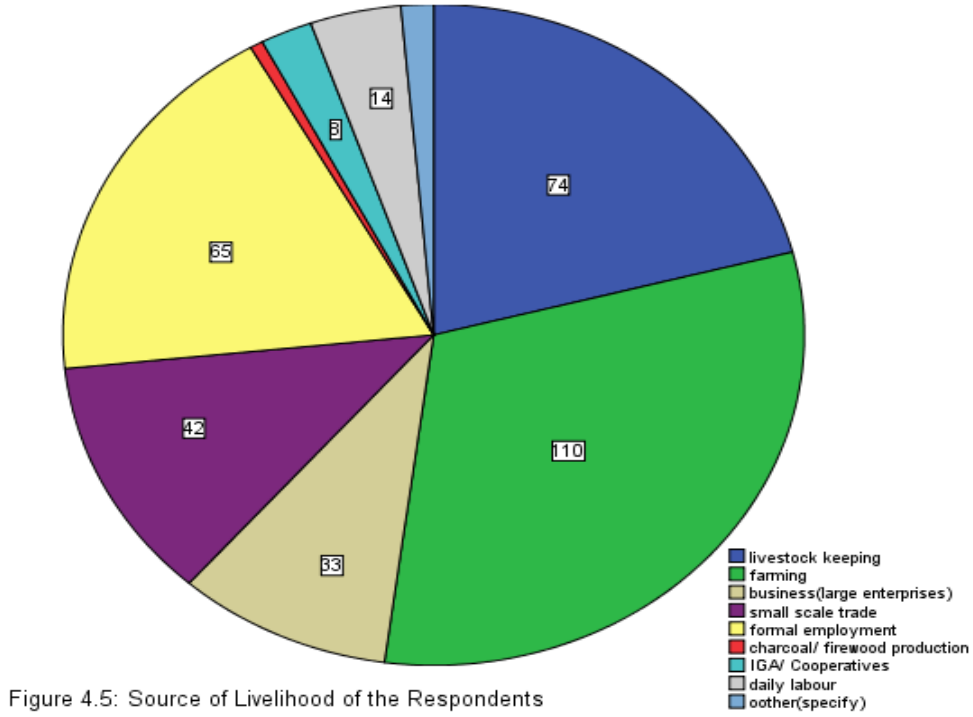

Figure 4.5: Source of Livelihood of the Respondents

Figure 4.5: Source of Livelihood of the Respondents

4.5 Descriptive analysis for the study Variables

To establish the responses opinion on independent and dependent factors, the responses were tabulated descriptively where the mean, standard deviation, skewness and kurtosis were used to summarize the responses. The descriptive analysis is as below;

4.5.1 Descriptive analysis of food security

The study firstly sought to examine the response of the respondents on enhancement of food security. Food security was operationalized into; sustainability, identification of root factors, agricultural practices. The study sought to find out whether adoption of devolved agricultural system of governance leads to sustainability which is the integral part of food security planning. Based on the responses from the questionnaires the item realized a mean of 4.0312 and a standard deviation of .77726. The skewness value was -.529 implying negatively skewed while values were not widely spread around the mean (-. 028). In relation to whether the respondents believe that there exists a positive relationship between adoption of devolved agricultural system of governance and enhancement of food security and as a result helps in identification of root factors such as diets, water use, and infrastructure that ultimately contribute to food insecurity. The itemized mean was 4.1076 implying a positive relationship exists between the study variables but the variation in responses was .84596. It recorded a negative skewness (-.943) and values were widely spread around the mean.

In a bid to establish whether, adoption of devolved agricultural system of governance leads to sustainable agricultural practices and food systems, including both production and consumption. The mean value was 4.2295 implying that adoption of devolved agricultural system of governance leads to sustainable agricultural practices and food systems. The responses were varied to a magnitude of .76577. It was negatively skewed (-.912) and the values were widely spread around the mean as shown in Table 4.5:

Table 4.5: Descriptive statistics for food security

Descriptive statistics for food security						
N = 353	**Min**	**Max**	**Mean**	**Std. Dev**	**Skewness**	**Kurtosis**
Adoption of devolved agricultural system of governance leads to sustainability	2.00	5.00	4.0312	.77726	-.529	-.028
Existence of a positive relationship between adoption of devolved agricultural system of governance and enhancement of food security	1.00	5.00	4.1076	.84596	-.943	1.107
Adoption of devolved agricultural system of governance leads to sustainable agricultural practices and food systems	1.00	5.00	4.2295	.76577	-.912	1.129
Food Security	4.00	15.00	12.3683	1.92481	-.556	.532

The skewness for the composite variable food security was -.556, which indicates a negative distribution with an asymmetric tail extending toward more negative values. The kurtosis value was .532 indicating a relatively peaked distribution.

4.5.2 Descriptive statistics for public private partnerships

It was also necessary to examine the relationship between public private partnerships and enhancement of food security in Uasin Gishu County. The findings were rated on a Likert scale of 1 to 5. The results are as shown below; Accountability through collaborative mechanisms in which public organizations and private entities share resources, knowledge, and risks helps to achieve more efficiency in the production and delivery of products and services. The item had a mean of 4.0878 This implies that

accountability as a result of collaborative mechanisms in which public organizations and private entities share resources, knowledge, and risks helps to achieve more efficiency in the production and delivery of products and services but there was a variation in responses of 0.84993. The item was negatively skewed (-1.090) with values largely spread around the mean 1.645.

Additionally, collaboration and action between the public and private sectors could spur inclusive and sustainable economic growth had a mean of 4.0227 and a standard deviation of .73046. The distribution was negatively skewed (-1. 091) with values widely spread around the mean (3.155). Furthermore, consultation in decision making between public private partnerships and the county in which a business and the government invest in a project together to provide a public service can increase the scale of assistance to people had a mean of 3.9150. This implies that consultation in decision making between public private partnerships and the county can increase the scale of assistance to people. The responses varied to a magnitude of .79674. The item was negatively skewed (-.999) and recorded a Kurtosis value of 1.709.

In relation to whether, the county has a framework of policies and procedures that guide public private partnerships to help in enhancement of food security in our county had a mean of 3.8357 and a standard deviation of .95714. The item was negatively skewed (-.741) and the values were not widely spread around the mean (.273). Finally, in regards to whether delegated authority has helped to improve food security in the county and if it will have an increasingly important role to play in ensuring global food security. The item had a mean of 3.5241 which meant that delegated authority has helped to improve food security in the county. The variation in responses was .95947 with a negative skewness (-.709) and a kurtosis of .357 as shown in Table 4.6:

Table 4.6: Descriptive analysis of Public Private Partnerships on enhancement food security

Descriptive statistics for public private partnerships						
N = 353	**Min**	**Max**	**Mean**	**Std. Dev**	**Skewness**	**Kurtosis**
Delegated authority helps to improve food security	1.00	5.00	3.5241	.95947	-.709	.357
Collaboration and action between the public and private sectors spurs sustainable economic growth	1.00	5.00	4.0227	.73046	-1.091	3.155
Policies and procedures that guide PPPs enhances food security	1.00	5.00	3.8357	0.95714	-0.741	0.273
Accountability helps to achieve more efficiency in the production and delivery of products and services	1.00	5.00	4.0878	0.84993	-1.090	1.645
Consultation in decision making between PPPs and the county can increase the scale of assistance to people.	1.0	5.0	3.9150	.79674	-.999	1.709
Composite Public Private Partnership	12.00	25.00	19.3853	2.54148	-.371	-.132

The skewness value for the Public Private Partnerships was -.371 indicating a negative distribution of values to the left. The kurtosis value for the same was -.132 indicating that the values are not widely spread around the mean.

4.5.3 Descriptive analysis of Agricultural Extension Services

It was also necessary to examine the relationship between the devolved agricultural extension services and enhancement of food security in Uasin Gishu County. The results are as follows:

Table 4.7: Descriptive analysis of Agricultural Extension Services

DESCRIPTIVE STATISTICS FOR AGRICULTURAL EXTENSION SERVICES						
N =353	**Min**	**Max**	**Mean**	**Std. Dev**	**Skewness**	**Kurtosis**
Intelligence gathering enables devolved staff make informed decisions	1.00	5.00	3.7054	0.80014	-0.992	1.786
Unified database provides for better decision	1.00	5.00	3.7479	.90855	-.943	.940
Control systems helps mitigate climate change	1.00	5.00	3.9348	.83172	-.801	1.133
Supporting farmers in resilient eco- agriculture systems provide critical ecosystem services in the county	1.00	5.00	4.0708	.84818	-1.091	1.940
Monitoring systems provide timely information to decision makers	1.00	5.00	4.0510	.91248	-1.116	1.584
Forecasting guides policymakers to act early to minimize food crisis	1.00	5.00	4.1048	.88729	-1.385	2.665
Composite Agricultural Extension Services	9.00	35.00	27.69	4.09	-1.45	3.997

Forecasting using food security and nutrition indicators and careful monitoring of food prices, rainfall levels, and crop production losses guides policymakers in the county to act early to minimize the impact of the food crisis. The mean value was 4.1048 implying that forecasting using food security and nutrition indicators and careful monitoring of food prices, rainfall levels, and crop production losses guides policymakers in the county

to act early to minimize the impact of the food crisis. The standard deviation was .88729 and the item was negatively skewed (-1.385) with values widely spread around the mean (2.665).

Supporting farmers in developing diversified and resilient eco- agriculture systems provide critical ecosystem services in the county recorded a mean of 4.0708 and a standard deviation of .84818. The item was negatively skewed (-1.091) and a kurtosis value of 1.940.Monitoring systems provide necessary and timely information to decision makers for building sound policies and programs in the county was ranked third with a mean of 4.0510. This implies that the monitoring systems provide necessary and timely information to decision makers for building sound policies and programs in the county. There was a variation in responses of .91248, the distribution of the item was negatively skewed (-1.116) and the values were widely spread around the mean (1.584). Additionally, the study findings revealed that control systems such as promotion of climate- friendly agricultural production systems and land-use policies at a scale helps mitigate climate change. This was informed by a mean of 3.9348 but with a variation in responses of .83172. The skewness value was -.801 and the kurtosis was 1.133.

Furthermore in regards to whether unified database provides a platform for data analytics for better decision thus improving food security. Majority of the respondents acknowledged that it enhances food security. The item realized a mean of 3.7479, a standard deviation of .90855, skewness value of -.943 and a kurtosis of .940. In regards to whether intelligence gathering through devolved extension services enables devolved staff and county government make informed decisions that boosts food security in the county. The responses realized a mean of 3.7054 implying that the item boosts food security in the county but with a variation in responses of .80014. The item was negatively skewed (-.992) and the values were largely spread around the mean (1.786). The skewness value for the composite agricultural extension services was -1.45 indicating that extreme values below the mean are further away than the extreme values above the mean. The kurtosis value for the same was 3.997 indicating that the values are widely spread around the mean.

4.5.4 Descriptive analysis of devolved agricultural staff

The study further sought to establish the effects of devolved agricultural staff on enhancement of food security. Respondents were asked to rate the given statements on likert scale of five. The results were analyzed and displayed in the table below;

Table 4.8: Descriptive Statistics for devolved agricultural staff

DESCRIPTIVE STATISTICS FOR DEVOLVED AGRICULTURAL STAFF						
N =353	**Min**	**Max**	**Mean**	**Std. Dev**	**Skewness**	**Kurtosis**
Devolved agricultural staff size is a key factor in sustainability of food security	1.00	5.00	3.5921	.90964	-.834	.735
Education level among devolved agricultural staff determines quality and success of food-security-oriented services	1.00	5.00	3.8867	.90370	-1.122	1.630
Addressing the interdisciplinary challenges requires a range of high-level skills	1.00	5.00	3.8980	.86984	-.556	.109
The county cannot succeed without skilled, qualified staff and institutions to provide right incentives	1.00	5.00	4.0850	.90681	-.927	.623
Competence among the devolved agricultural staff is an essential ingredient.	1.00	5.00	4.0538	.84271	-.904	.959
Building capacity for food security enables the county to sustainably meet its food and nutrition security challenges	1.00	5.00	4.2096	.78060	-1.142	2.081
Targeting young researchers from the devolved agricultural staff is a priority of the enhancing Food Security in the county	1.00	5.00	4.1161	.93881	-1.228	1.613
Composite Devolved Agricultural Staff	11.00	35.00	27.8414	3.86090	-.739	.995

Building capacity for food security enables the county to sustainably meet its food and nutrition security challenges. The mean value was 4.2096 implying that it the item enhances food security. The variation in responses was to a magnitude of .78060 and the distribution for the item was negatively skewed (-1.142) with the mean values widely spread around the mean (2.081). Targeting of young researchers from the devolved agricultural staff through capacity strengthening opportunities is a priority for enhancing food security in the county. The item had a mean of 4.1161 implying that it does enhance food security. The volatility in the response rate was .93881 and the distribution was negatively skewed (- 1.228) with values widely spread around the mean (1.613).

In a bid to establish whether county cannot succeed in the long run without skilled and well-qualified staff and institutions to provide right incentives for, motivate, and manage these efforts. The itemized mean was 4.0850 implying that the county cannot succeed without skilled and well-qualified staff and institutions. The standard deviation of the item was .90681, its skewness was -.927 and the kurtosis value was .623. Also, in regards to whether competence among the devolved agricultural staff in the county government and PPPs is an essential ingredient. The mean of the item was with4.0538 implying that it is an essential ingredient. A variation of .84271 in responses was recorded, the item was negatively skewed -.904 and the values were widely spread around the mean to a magnitude of .959.

In order to synthesize whether addressing the interdisciplinary challenges posed by food security requires a range of high-level skills. The survey revealed that it does require a range of high level skills with a mean value of 3.8980 and a variation in responses of .86984.The item responses were negatively skewed (-.556) and the values were not widely spread around the mean (.109). Furthermore, the study found that level of education among the devolved agricultural staff determines the quality and success of food-security-oriented services. This was informed by a mean of 3.8867 but the responses varied to a magnitude of .90370. The responses were negatively skewed (-1.122) and the values of the item were widely spread around the mean (1.630).

In determining whether the size of devolved agricultural staff in the county is key factor in sustainability of food security. The itemized mean was 3.5921 with a variation in responses of .90964. A negatively skewed distribution was recorded (-.834) and the kurtosis value was .735. The skewness value for the composite devolved agricultural staff was -.739 this implies that the findings of composite devolved agricultural staff were negatively skewed in that most response patterns were that it negatively affected enhancement of food security, while the kurtosis value for the same was .995. The Kurtosis indicates a platykurtic distribution, that is, flatter than a normal distribution with a wider peak. The probability for extreme values is less than for a normal distribution, and the values are wider spread around the mean.

4.5.5 Descriptive analysis of Devolved Funds

The study also sought to examine the relationship between devolved funds and enhancement of food security. The results are as shown in table 4.8 below. Incentives to farmers such as farmers' market incentives improve food security in the county had a mean of 4.1728. This meant that incentives to farmers such as farmers' market incentives improve food security in the county. The responses varied to a magnitude of .76585 and were negatively skewed (-.953). The values of the item were widely spread around the mean (1.672).

Additionally, management of funds and large increases in agricultural investment are needed both to raise incomes and increase the supply of food sustainably. The item had a mean of 4.1246, standard deviation of .65824, skewness on -.678 and kurtosis of 1.738.

It was noted that increase in food security funded projects increase agricultural productivity and the availability and accessibility of safe and nutritious food. The mean recorded was 4.1190 implying that an increase in food security funded projects increases agricultural productivity and the availability and accessibility of safe and nutritious food. The responses varied to a magnitude of .81708 and the item distribution was negatively skewed (-.914). The values were widely spread around the mean (1.273).

Proper skills, offering good remuneration wages and funding can help protect rural, low-income families from food insecurity in the county. The mean of the item was 4.0623 and the standard deviation of .83023 was recorded. The responses were represented with a negative skewness and the values of the item were not widely spread around the mean. In regards to whether, offering incentive vouchers enhance purchasing power of low-income households. The itemized mean was 3.9008, implying that incentive vouchers enhances purchasing power of low income households. The responses varied to a magnitude of 1.15248 and the distribution for the item was negatively skewed. The values of the item were not widely spread around the mean as the item kurtosis was .131.

Additionally, the respondents were asked whether allocation of funds should be prioritized for eligible nonprofits, public private partnerships, and food program service providers in need of a one-time infusion of assistance for projects that promote self-sufficiency and food security. The mean value of the item was 3.8867 implying that the item should be prioritized. The distribution was negatively skewed (-.563) and the values were widely spread around the mean (1.002).

Table 4.9: Descriptive Analysis of Devolved Funds

DESCRIPTIVE STATISTICS FOR DEVOLVED FUNDS						
N =353	**Min**	**Max**	**Mean**	**Std. Dev**	**Skewness**	**Kurtosis**
Allocation of funds should be prioritized for eligible nonprofits, PPPS, and food program service providers in need of a one-time infusion of assistance for projects that promote self-sufficiency and food security.	1.00	5.00	3.8867	.69386	-.563	1.002
Management of funds and large increases in agricultural investment are needed both to raise incomes and increase the supply of food sustainably	1.00	5.00	4.1246	.65824	-.678	1.738
Proper skills, offering good remuneration wages and funding can help protect rural, low-income families from food insecurity in the county.	1.00	5.00	4.0623	.83023	-.866	.949
Incentives to farmers such as farmers market incentives improve food security in the county	1.00	5.00	4.1728	.76585	-.953	1.672
Increase in food security funded projects increase agricultural productivity and the availability and accessibility of safe and nutritious food	1.00	5.00	4.1190	.81708	-.914	1.273
Offering incentive vouchers enhance purchasing power of low-income households	1.00	5.00	3.9008	1.15248	-.981	.131
Composite Devolved Funds	9.00	30.00	24.2663	3.17079	-.740	1.168

The skewness value for the devolved funds was -.740, indicating a negative distribution of values to the left. The kurtosis value for the same was 1.168 which indicating that the values are wider spread around the mean.

4.6 Factor Analysis of devolved system of governance versus food security

Factor analysis was done on all main factors to describe variability among observed and correlated variables in terms of a potentially lower number of unobserved variables. Principal components analysis was used to reduce the number of components in each of the devolved system of governance. The maximum likelihood estimation procedure was used to extract the factors from the variable data. Kaiser's rule was used to determine which factors were most eligible for interpretation because this rule requires that a given factor is capable of explaining at least the equivalent of one variable's variance. The relevant variables with the highest loading were retained. The variables retained were used to develop composite values which were used to develop regression model for analysis. This helped in achieving the research objectives and hypothesis. The result of the factor analysis is outlined below;

4.6.1 Sampling Adequacy

Joppe (2000) provides that the validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are. Kaiser (1974) introduced a Measure of Sampling Adequacy (MSA) of factor analytic data matrices. This is just a function of the squared elements of the 'image' matrix compared to the squares of the original correlations. The overall MSA as well as estimates for each item are found. The index is known as the Kaiser-Meyer-Olkin (KMO) index. The results from Kaiser-Mayer-Olkin measures of sampling adequacy were found to be 0.873 which is middling as per StataCorp (2013). The Bartlett's Test of Sphericity was found to be significant indicating that the sample was adequate for the research

Table 4.10: Kaiser-Mayer-Olkin measures of sampling adequacy

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.873
Bartlett's Test of Sphericity	Approx. Chi-Square	2.538E3
	Df	276
	Sig.	.000

4.6.2 Factor analysis on devolved system of governance

Four group-wise measures of devolved system of governance were used; public private partnerships, agricultural extension services, devolved agricultural staff and devolved funds. Principal component analysis was done on each measure with a requested retention of several components in each and the results interpreted in the table 4.11 below;

Table 4.11: Total Variance Explained

Total Variance Explained									
Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.851	32.337	32.337	4.851	32.337	32.337	2.443	16.289	16.289
2	1.426	9.505	41.842	1.426	9.505	41.842	2.414	16.092	32.382
3	1.364	9.090	50.933	1.364	9.090	50.933	2.020	13.469	45.851
4	1.051	7.008	57.941	1.051	7.008	57.941	1.813	12.089	57.941
5	.800	5.332	63.273						
6	.773	5.151	68.423						
7	.708	4.722	73.145						
8	.659	4.396	77.541						
9	.633	4.217	81.758						
10	.533	3.553	85.311						
11	.516	3.441	88.752						
12	.462	3.080	91.832						
13	.440	2.932	94.764						
14	.408	2.723	97.486						
15	.377	2.514	100.000						

Extraction Method: Principal Component Analysis

In Extraction Sums of Squared Loadings, the number of rows in this panel of the table corresponds to the number of factors retained while Rotation Sums of Squared Loadings values represent the distribution of the variance after the Varimax rotation. Varimax rotation tries to maximize the variance of each of the factors, so the total amount of variance accounted for is redistributed over the extracted factors. The cumulative percent column under Rotation Sums of Squared Loadings contains the cumulative percentage of variance accounted for by the current and all preceding factors. For example, the fourth row shows a value of 57.941. This means that the first four factors together account for 57.941% of the total variance. Further, the rotated component matrix is as shown below;

Table 4.12: Factor matrix on Devolved System of Governance

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
Collaboration and action between the public and private sectors could spur economic growth.	.778			
Framework of policies enhances food security in our county.				.708
Accountability helps to achieve more efficiency				.691
Supporting farmers provide critical ecosystem services in the County.			.824	
Monitoring systems provide necessary and timely information to decision makers			.595	
Forecasting helps the county to act early to minimize the impact of the food crisis.	.640			
Education level determines the quality and success of food security oriented services			.750	
Addressing the interdisplinary challenges requires a range of high level skills.		.726		
The county cannot succeed in the long run without skilled and well-qualified staff.		.705		
Competence among the devolved agricultural staff is an essential ingredient.		.698		
Targeting young researchers enhances food security.		.539		
Allocation of funds should be prioritized.	.704			
Incentives to farmers improves food security.	.618			
Increase in food security funded projects increase agricultural productivity.	.749			
Incentive vouchers enhances purchasing power				.579
Devolved agricultural system of governance		.871		
leads to sustainability				
There exists a positive relationship between adoption of	. 792			
devolved agricultural system of governance and				
enhancement of food security				
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 5 iterations.				
Cronbach reliability Alpha	.714	.740	.688	.712

In the rotated component analysis, the variables considered are the constructs of all the study variables; public private partnerships, agricultural extension services, devolved agricultural staff, devolved funds and food security. Constructs with higher factor loading were extracted in each type of product diversification. These variables had values above 0.50 whereas those below this mark were dropped. Varimax with Kaiser Normalization was used as it simplifies the factors where it normalizes factor loadings before rotating them, and then de-normalizing them after rotation. This helps to increase the reliability and validity of the scale. The selected components were used to develop composite values which were used for further correlation and regression analysis.

4.7 Data transformation

Data transformation was achieved through retention of factors in each independent variable rotation matrix to obtain composite values in each category. These factors were indexed as per the loading where factors with higher loading were selected in each group that is, public private partnerships, agricultural extension services, devolved staff and devolved funds. The idea of data transformation is essential in achieving higher factors reliability and achieving normality for further data analysis. Data transformation was also done to increase the sensitivity of the statistical tests. Before transformation, the data was highly skewed but after transformation, normality was achieved. To achieve this, the factors with a loading of more than 0.5 for each of the variables were considered for transformation, after which, correlation and multiple regressions were carried out with the transformed data.

4.8 Descriptive statistics for composite variables

From the rotated table, the variables (public private partnerships, agricultural extension services, devolved staff and devolved funds) were transformed. The idea of the data transformation was to convert the data so that it could assume the normality and use parametric tests. To achieve this, the factors with a loading of more than 0.5 for each of the variables were considered for transformation. Descriptive statistics for the rotated

composite variables was done with mean and standard deviation used to display the results as shown in the table 4.13 below;

Table 4.13: Descriptive statistics for the composite variables

N = 353	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Food security	4.00	15.00	12.3683	1.92481	-.556	.532
Public private Partnerships	12.00	25.00	19.3853	2.54148	-.371	-.132
Agricultural extension Services	9.00	35.00	27.6856	4.09132	-1.445	3.997
Devolved Staff	11.00	35.00	27.8414	3.86090	-.739	.995
Devolved Funds	9.00	30.00	24.2663	3.17079	-.740	1.168

Devolved staff had a mean of 27.8414 and a standard deviation of 3.86090. Overally the item was negatively skewed (-.739) and its values were not widely spread around the mean (.995). Additionally, public private partnerships had a mean of 19.3853 with a variation in responses of 2.54148. The item was negatively skewed (-.371) with values not widely spread around the mean (-.132). . Food security had a mean of 12.3683 and a standard deviation of 1.92481. The distribution of the item was negatively skewed (-.556) and the values of the item were not widely spread around the mean (.532). Finally, agricultural extension services had a mean of 27.6856 and a standard deviation of 4.09132. The item assumed a negatively skewed distribution (-1.445) and its values were widely spread around the mean.

4.9 Correlation analysis of food security versus devolved system of governance

Correlation analysis of variable under study was conducted to establish where there was any significant relation between dependent and independent variables under study. Correlation is a powerful tool to measure presence of a relationship between two or more variables. It tries to establish whether there is positive or negative relationship between variable and using statistical correlation coefficient determine the strength of this relationship. This was then tested for significance at 1%. The result of the analysis is tabulated in table 4.14. There was a medium relationship between public private partnership and food security (r = 0.478, p-value < .01). Agricultural extension services had a medium relationship with food security (r = 0.413, *p*-value < .01). Devolved staff had a strong relationship with food security (r = 0.572, *p*-value < .01). Finally, devolved funds had a strong relationship with food security (r = 0.624, *p*-value < .01) as tabulated below:

Table 4.14: Correlations between food security and devolved system of governance

N = 353		Food security	Public	Agric	Staff	Funds
Food security	Pearson Correlation	1				
	Sig. (2-tailed)					
Public private partnerships	Pearson Correlation	.478**	1			
	Sig. (2-tailed)	.000				
Agricultural extension services	Pearson Correlation	.413**	.542**	1		
	Sig. (2-tailed)	.000	.000			
Devolved Staff	Pearson Correlation	.572**	.521**	.620**	1	
	Sig. (2-tailed)	.000	.000	.000		
Devolved Funds	Pearson Correlation	.624**	.415**	.422**	.600**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

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

4.10 Multiple regression analysis

Multiple regression analysis is a powerful technique used for predicting the unknown value of a variable from the known value of two or more variables - also called the predictors. In this case, multiple regression analysis helped predict food security from public private partnerships, agricultural extension services, devolved staff and devolved funds.

4.10.1 Model summary

The results from multiple regression analysis are as displayed below;

Table 4.15: Model summary

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.690[a]	.476	.470	1.40152	1.783

a. Predictors: (Constant), funds, Public, Agric, staff
b. Dependent Variable: food security

From the table above, the value of R-square is 0.476 which indicates that the model explains 47.6% of food security from the predictor variables (public private partnerships, agricultural extension services, devolved staff and devolved funds). The Durbin-Watson's d tests the null hypothesis that the residuals are not linearly auto-correlated. The value of Durbin-Watson was at 1.783 which indicates no autocorrelation among the variables.

4.10.2 Analysis of variance

Analysis of variance was employed to measure the differences in means between food security and its predictor variables. The results are shown in the table 4.16 below;

Table 4.16: ANOVA

ANOVA[b]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	620.561	4	155.140	78.981	.000[a]
	Residual	683.564	348	1.964		
	Total	1304.125	352			

a. Predictors: (Constant), funds, Public, Agric, staff
b. Dependent Variable: food security

The F-ratio was 78.981 at 1 degree of freedom which is the variable factor. This represented the effect size of the regression model and the model is significant at 99% confidence level (p=0.000) indicating that food security can be predicted from the aforementioned independent variables.

4.10.3 Coefficient analysis

Coefficient analysis from multiple regression analysis is as shown below;

Table 4.17: Coefficient analysis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.418	.700		.596	.551					
	Public	.145	.037	.192	3.946	.000	.478	.207	.153	.639	1.564
	Agric	-.003	.025	-.007	-.135	.893	.413	-.007	-.005	.549	1.821
	Staff	.115	.029	.231	4.037	.000	.572	.212	.157	.459	2.179
	Funds	.248	.030	.409	8.327	.000	.624	.408	.323	.625	1.599

a. Dependent Variable: food security

As aforementioned, the model was found to be statistically significant. Further, the regression model can be outlined as follows;

$$\text{Food security} = (.418) + X_1(.192) + X_2(-.007) + X_3(.231) + X_4(.409) + .700$$

On public private partnerships, the beta coefficient was .192 implying that devolved Public Private Partnerships explained 19.2% change in food security. Collaboration and action between the public and private sectors could spur inclusive and sustainable economic growth and also delegated authority has helped to improve food security in the county and will have an increasingly important role to play in ensuring global food security. Uasin Gishu County has a framework of policies and procedures that guide public private partnerships to help in enhancement of food security in the county.

On the other hand the county enjoys accountability through collaborative mechanisms in which public organizations and private entities share resources, knowledge, and risks helps to achieve more efficiency in the production and delivery of products and services. Finally the county have adopted consultation in decision making between public private partnerships and the county in which a business and the government invest in a project together to provide a public service can increase the scale of assistance to people. All this practises have been a pillar in the enhancement of food security in the County. This study is in tandem with the findings of the World Bank Group (IEG, 2014), which argued that Public private partnerships is a way to optimize cost recovery by mobilizing private sector resources to cover the capital expenditure costs up front or at least most of it and make the public sector pay during delivery of the services. By doing so, Public private partnerships provide performance incentives. The main advantage that Public private partnerships may offer over traditional public procurement is potential efficiency gains and better use of resources at the construction and maintenance phases. This study further agrees with the findings of Brinkerhoff and Brinkerhoff (2011) that a public private partnership enhances efficiency and effectiveness through a reliance on comparative advantages, a rational division of labour, and resource mobilization. It also provides a multi- actor, integrated resources and solutions required by the scope and

nature of the problems being addressed. To move from a no - win situation among multiple actors to a compromise and potential win-win situation.

It opens decision making processes to promote a broader operationalization of a public good and maximize representation and democratic processes. This study disagrees with the findings of Hodge and Greve (2007) that public private partnerships raises questions about the value for money rationale, and documents governance and regulatory failures which in turn does not translate in to enhancement of food security. In practice, many public private partnerships may not achieve their intended public benefits, either due to poor implementation or skewed incentives or they may achieve unintended consequences.

Financing of public private partnerships debt and equity ratio is more expensive and where County governments are capable of achieving better terms, and experience with management contracts has apparently been disappointing with expected efficiency gains (Gantsho, 2010). Many County governments are either lacking administrative capacity or hesitating to fully involve at public private partnerships and establish the conditions for success, or cannot deal properly with the process of evaluating and awarding contracts (OECD, 2011; OECD, 2005). There is also the possibility that consumers experience possibly higher prices and connectivity fees in exchange of other benefits such as efficiency gains (OECD, 2005).

The results of multiple linear regressions showed that devolved agricultural extension services had (β = -.007, $p>0.01$). This implies that devolved agricultural extension services have no significant effect on food security and it explained negative 0.7% change in the enhancement of food security was accepted and the study concluded that Devolved agricultural extension services do not contribute to enhancement of food security in Uasin Gishu County.

Forecasting using food security and nutrition indicators and careful monitoring of food prices, rainfall levels, and crop production losses guides policymakers in the county to act early to minimize the impact of the food crisis. Intelligence gathering through devolved extension services enables devolved staff and county government make informed decisions that boosts food security in the county. Unified database provides a platform for data analytics for better decision thus improving food security.

Control systems such as promotion of climate- friendly agricultural production systems and land-use policies at a scale to help mitigate climate change and supporting farmers in developing diversified and resilient eco- agriculture systems provide critical ecosystem services in the county does not at all times translates into the enhancement of food security in the County. The current study is in agreement with the findings of Rivera *et al*. (2001) that agricultural extension services works in a wider knowledge system that embraces different components of which research and agricultural education.

The Extension services mainly involve the passing of agricultural information to the farmer. These messages are what constitute information which the farmer absorbs and tries to implement in their farming practices. The end result is the enhancement of food security within the County. This study further agrees with the findings of (Gundu, 2005) who postulate that an effective extension information service is one that meets the farmers' needs and the content of the information is specific, simple, and useful.

Devolved agricultural staff had a beta coefficient of .231 implying that devolved agricultural staff explained 23.1% change in a food security in Uasin Gishu County. Building capacity for food security indeed enables the county to sustainably meet its food and nutrition security challenges. The level of education among the devolved agricultural staff determines the quality and success of food-security-oriented services. Competence among the devolved agricultural staff in the county government and public private partnerships has been an essential ingredient in enhancement of food security in Uasin Gishu County.

The targeting of young researchers from the devolved agricultural staff through capacity strengthening opportunities is a priority of the enhancing food security in the county. The county government has invested in skilled and well qualified staff as the County realized that the County cannot succeed in the long run without skilled and well-qualified staff and institutions to provide right incentives for, motivate, and manage these efforts. This in turn has influenced positively food security in the County. This study agrees with the findings of (Rivera & Qamar, 2003), that having agricultural extension officers is indispensable. They provide agricultural education, knowledge on the right use of agricultural inputs like seeds and fertilizers, treatment of livestock diseases, education on farm management and access to seeds and fertilizers from the County government for free which in turn leads to enhancement of food security.

Devolved funds had a beta coefficient of .409 implying that devolved funds explained 40.9% change in a food security in Uasin Gishu County. The County government had increased food security funded projects that resulted into increase in agricultural productivity and the availability and accessibility of safe and nutritious food. The County government has provided incentives to farmers such as farmers market incentives which translated to improved food security in the county. The food security funded projects had increased agricultural productivity and the availability and accessibility of safe and nutritious food.

Allocation of funds had been prioritized for eligible nonprofits, public private partnerships, and food program service providers in need of a one-time infusion of assistance for projects that promote self-sufficiency and food security. Offering incentive vouchers has enhanced the purchasing power of low - income households among the households of Uasin Gishu County. These are some of the reason that informs why devolved funds enhance food security. This study disagrees with the findings postulated by Thiessen (2001) that fiscal decentralization or devolution of funds can reinforce regional inequalities as well as it does not enhance food security. On the other hand the findings of this study are in tandem with the findings of Ezcurra & Pascal (2008) who suggested that there is a negative correlation between devolution of funds

and the level of food security, since devolution of funds from central government to County government generates a more balanced distribution of resources across regions. Such kind of argument has also been supported by Oates (2009) that devolution of funds contributes to food security.

4.11 Hypotheses Testing

The study was guided by four hypotheses which are discussed systematically below; Hypothesis 1 ($H_0$1) predicted that devolved Public Private Partnerships in Uasin Gishu County have not contributed to enhancement of food security. The results in table 4.17 indicate that devolved Public Private Partnerships has a significant effect on food security at $p < 0.01$. Thus we fail to accept the null hypothesis and accept alternative hypothesis and conclude that devolved Public Private Partnerships in Uasin Gishu County have contributed to enhancement of food security.

Hypothesis 2 ($H_0$2) predicted that devolved agricultural extension services in Uasin Gishu County has no effect on enhancement of food security. The results in table 4.17 indicate that devolved agricultural extension services has no significant effect on food security ($p>0.01$) implying that the null hypothesis is accepted and the alternative hypothesis that devolved agricultural extension services in Uasin Gishu County has a significant effect on enhancement of food security is rejected. Hypothesis 3 ($H_0$3) predicted that devolved agricultural staff in Uasin Gishu County has no significant effect on enhancement of food security. Table 4.17 indicates that devolved agricultural staff has a significant effect on food security ($p<0.01$) implying that the null hypothesis is rejected that devolved agricultural staff in Uasin Gishu County has no significant effect on enhancement of food security. Hypothesis 4 ($H_0$4) predicted that devolved funds allocation in Uasin Gishu County has no effect on enhancement of food security. The results in table 4.17 indicate that devolved funds allocation has a significant effect on food security ($p< 0.01$) implying that the null hypothesis that devolved funds in Uasin Gishu County has no effect on enhancement of food security is rejected.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains a summary of the findings as per the research objectives together with a conclusion and the necessary recommendations on the study.

5.2 Summary of Findings

5.2.1 Devolved Public Private Partnership and Enhancement of Food Security

Public private partnerships have a significant effect on food security. Collaboration and action between the public and private sectors spurs inclusive and sustainable economic growth and also delegated authority helps to improve food security in the county and will have an increasingly important role to play in ensuring global food security. Uasin Gishu County has a framework of policies and procedures that guide public private partnerships to help in enhancement of food security in our county. On the other hand the county enjoys accountability through collaborative mechanisms in which public organizations and private entities share resources, knowledge, and risks has helped to achieve more efficiency in the production and delivery of products and services. Finally the county have adopted consultation in decision making between public private partnerships and the county in which a business and the government invest in a project together to provide a public service can increase the scale of assistance to people. All this practises have been a pillar in the enhancement of food security in the County.

5.2.2 Devolved Agricultural Extension Services and Enhancement of Food Security

Devolved agricultural extension services do not contribute to enhancement of food security in Uasin Gishu County. Forecasting using food security and nutrition indicators and careful monitoring of food prices, rainfall levels, and crop production losses does

not always guide policymakers in the county to act early to minimize the impact of the food crisis.

Intelligence gathering through devolved extension services falls short of enabling devolved staff and county government make informed decisions that boosts food security in the county. Unified database does not provide a platform for data analytics for better decision thus being a hindrance in enhancing food security. Control systems such as promotion of climate- friendly agricultural production systems and land-use policies at a scale to help mitigate climate change and supporting farmers in developing diversified and resilient eco- agriculture systems provide critical ecosystem services in the county does not at all times translates into the enhancement of food security in the County. The Extension services mainly involve the passing of agricultural information to the farmer. These messages are what constitute information which the farmer absorbs and tries to implement in their farming practices. The end result is that it does not enhance food security within the County.

5.2.3 Devolved Agricultural Staff and Enhancement of Food Security

Building capacity for food security indeed enables the county to sustainably meet its food and nutrition security challenges. The level of education among the devolved agricultural staff determines the quality and success of food-security-oriented services. Competence among the devolved agricultural staff in the county government and public private partnerships has been an essential ingredient in enhancement of food security in Uasin Gishu County.

The targeting of young researchers from the devolved agricultural staff through capacity strengthening opportunities is a priority of the enhancing food security in the county. The county government has invested in skilled and well qualified staff as the County realized that the County cannot succeed in the long run without skilled and well-qualified staff and institutions to provide right incentives for, motivate, and manage these efforts. This in turn has influenced positively food security in the County. They

provide agricultural education, knowledge on the right use of agricultural inputs like seeds and fertilizers, treatment of livestock diseases, education on farm management and access to seeds and fertilizers from the County government for free which in turn leads to enhancement of food security.

5.2.4 Devolved Funds and Enhancement of Food Security

The County government has provided incentives to farmers such as farmers market incentives which translates to improved food security in the county. The food security funded projects had increased agricultural productivity and the availability and accessibility of safe and nutritious food. Allocation of funds had been prioritized for eligible non-profits, public private partnerships, and food program service providers in need of a one-time infusion of assistance for projects that promote self-sufficiency and food security. Offering incentive vouchers has enhanced the purchasing power of low - income households among the households of Uasin Gishu County.

5.3 Conclusion

From the foregoing discussions, the following conclusions were drawn from the study. Devolved Public private partnership contributes to enhancement of food security. As County governments' embraces collaboration and action between the public and private sectors it spurs inclusive and sustainable economic growth. The framework of policies and procedures that have been put in place by County governments has guided public private partnerships and hence the enhancement of food security in the county. The collaborative mechanisms put in place within the County government' has enhanced accountability in which public organizations and private entities share resources, knowledge, and risks has helped to achieve more efficiency in the production and delivery of products and services. Finally the adoption of consultation in decision making between public private partnerships and the county in which a business and the government invest in a project together to provide a public service has increased the scale of assistance to people.

Forecasting using food security and nutrition indicators and careful monitoring of food prices, rainfall levels, and crop production losses guides policymakers in the county to act early does not minimize the impact of the food crisis.

Intelligence gathering through devolved extension services do not at all times enable devolved staff and county government make informed decisions that boosts food security in the county. Unified database does not provide a platform for data analytics for better decision thus not improving food security. Control systems such as promotion of climate friendly agricultural production systems and land use policies at a scale to help mitigate climate change and supporting farmers in developing diversified and resilient eco agriculture systems does not provide critical ecosystem services in the county .

Building capacity for food security enables the county to sustainably meet its food and nutrition security challenges. Competence among the devolved agricultural staff in the county government and public private partnerships is an essential ingredient in enhancement of food security in Uasin Gishu County. Targeting of young researchers from the devolved agricultural staff through capacity strengthening opportunities is a priority in enhancing food security in the county. The County government had increased food security funded projects that resulted into increase in agricultural productivity and the availability and accessibility of safe and nutritious food. Provision of incentives to farmers improves food security in the county. Food security funded projects increases agricultural productivity and the availability and accessibility of safe and nutritious food. Prioritization of allocation of funds for eligible nonprofits, public private partnerships, and food program service providers promotes self-sufficiency and food security. Offering incentive vouchers enhances the purchasing power of low-income households among the households of a County.

5.4 Recommendations

Based on the findings and conclusions of the study, the researcher came up with the following recommendations;

5.4.1 Theoretical implications

One of the major implications of this study is that devolved public private partnerships, agricultural extension services, devolved staff and devolved funds can be used as predictor variables of food security. The study contributes to the literature review on devolved agricultural system of governance and enhancement of food security, development of conceptual framework and measurement of variables.

5.4.2 Policy Recommendations

5.4.2.1 Public Private Partnership

County governments should embrace collaboration and action between the public and private sectors as it spurs inclusive and sustainable economic growth. Collaborative mechanisms should be put in place within the County government' to enhance accountability in which public organizations and private entities as they share resources, knowledge, and risks to help to achieve more efficiency in the production and delivery of products and services. County governments should adopt consultation in decision making between public private partnerships and the county in which a business and the government invest in a project together to provide a public service since it leads to increased scale of assistance to people.

5.4.2.2 Devolved Extension Services

County governments should take precaution while investing in intelligence gathering through devolved extension services as it does not always enable devolved staff and county government make informed decisions. Rather than maintaining a unified

database the county government should be inventive enough in opting for other databases that provides a platform for data analytics for better decision thus improving food security. Control systems should be given a priority as the county government should only opt for control systems such as promotion of climate- friendly agricultural production systems and land-use policies at a scale that helps mitigate climate change and support farmers in developing diversified and resilient eco- agriculture systems.

5.4.2.3 Devolved Agricultural Staff

The County government should build capacity for food security as it indeed enables the county to sustainably meet its food and nutrition security challenges. Education level of the devolved agricultural staff should be emphasized as the level of education among the devolved agricultural staff determines the quality and success of food-security-oriented services. Competence level should at all times given priority among the devolved agricultural staff in the county government as it is an essential ingredient in enhancement of food security in Uasin Gishu County.

5.4.2.4 Devolved Funds

The County government should provide incentives to farmers such as farmers market incentives which translates to improved food security in the county. Food security funded projects should be invested in as they increase agricultural productivity and the availability and accessibility of safe and nutritious food. Allocation of funds should at all times be prioritized for eligible nonprofits, public private partnerships, and food program service providers in need of a one-time infusion of assistance for projects that promote self-sufficiency and food security.

Offering incentive vouchers should be enhanced as it enhances the purchasing power of low - income households among the households of Uasin Gishu County.

5.4.3 Recommendations for further Research

The study suggests that a further research should be conducted to evaluate the effects of devolved agricultural system on food security using predictors of food security rather than public private partnerships, agricultural extension services, devolved staff and devolved funds.

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APPENDICES

Appendix I: Informed Consent

Dear Respondent,

RE: REQUEST FOR YOUR PARTICIPATION

I am a student at Jomo Kenyatta University of Science and Technology and I am conducting a research entitled **relationship between adoption of devolved agricultural system of governance and enhancement of food security in Uasin Gishu County, Kenya.** The research is part of the fulfillment of my postgraduate course. This is to give you information in the hope that you will participate in the study for the research which is for academic purpose only. Participation in this study is entirely voluntary. The information you provide is confidential and your name will not be exposed anywhere. The Information you provide will be treated only as a source of background research, alongside books and other research carried earlier. There are no known or anticipated risks to you as a participant in this study. If you have any questions regarding this study or would like additional information please ask me before, during, or after the exercise.

Thank you for your assistance.

Yours faithfully,

Edward Boor

Appendix II: Questionnaire

Questionnaire for the Study

RELATIONSHIP BETWEEN ADOPTION OF THE DEVOLVED SYSTEM OF GOVERNANCE IN AGRICULTURE AND ENHANCEMENT OF FOOD SECURITY IN UASIN GISHU COUNTY

County	
District/Sub County	
Village/Centre	
Enumerators Name	
Date	

INTRODUCTION

Good morning / afternoon Sir/Madam. My name is..... Am currently conducting a study on the relationship between adoption of the devolved system of governance in agriculture and enhancement of food security in Uasin Gishu.

Your views are very important and we would appreciate if you could spend some time to help us with our evaluation. I would like to assure you that whatever we will discuss today here will be kept confidential and will only be used for reporting.

Can we begin?

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

1. **Gender**

	TICK
1. Female	
2. Male	

2. **How old are you?** ☐

3. **Marital status**

	TICK
1. Married	
2. Single	
3. Divorced	
4. Separated	
5. Widowed	

4. **What is your highest level of education completed?**

	TICK
1. Never went to school	
2. Nursery school	
3. Primary school	
4. Secondary level	
5. Vocational training	
6. Diploma level	
7. University degree	
8. Master's degree	

LIVELIHOOD

5. **What is your source of livelihood? (Tick all that are applicable)**

1. Livestock keeping	
2. Farming	
3. Business (Large enterprises)	
4. Small scale trade	
5. Formal employment	
6. Charcoal/Firewood production	
7. IGA / Cooperatives	
8. Daily labour	
9. Others (Specify)	

Role of the county government in promoting agriculture and food security

6. **Do you receive any services from the county government to help develop agricultural activities in this county?**

	Tick
1. Yes	**Go to Q7**
2. No	**Go to Q8**
3. I do not know	

7. **What kind of services do you receive from the county government to help develop agricultural activities in this county?**

	TICK
1. Capacity building	
2. Funding	
3. Incentives such as seeds, fertilizers etc	
4. Market for produce	
5. Transport of agricultural produce	
6. Information on agricultural issues	
7. Organizing agricultural shows	
8. Personnel – Agricultural Extension Officers	
9. Others (Specify)	

8. **Why don't you receive any service from the county government to help develop agricultural activities in this county?**

	TICK
1. The county does not have any capacity in agricultural activities	
2. I live far from the county government	
3. The agricultural services from the county require money which I do not have	
4. The county does not have adequate staffing to assist the community	
5. I do not know where to get help	
6. Others (Specify)	

9. **Do you receive any services from elsewhere to help develop agricultural activities/food security in this county?**

	TICK
1. Yes	**Go to Q10**
2. No	
3. I do not know	

10. **What kind of services do you receive to help develop agricultural activities/food security?**

	TICK
1. Capacity building	
2. Funding	
3. Incentives such as seeds, fertilizers etc	
4. Market for produce	
5. Transport of agricultural produce	
6. Information on agricultural issues	
7. Organizing agricultural shows	
8. Personnel – Agricultural Extension Officers	
9. Others (Specify)	

11. From whom do you receive the services listed in Q10 above?

1. Village Food Security Task Force	
2. The community	
3. Village elders or Administration	
4. Community Food Security Task Force	
5. Non-governmental organizations	
6. District Food Security Task Force	
7. District Council or Administration	
8. Central/National government	
9. Individuals	

Food security

12. What is the main source of food in this community?

		Tick
a. Crop produce		
	1. Maize	
	2. Sorghum	
	3. Beans	
	4. Rice	
	5. Irish potatoes	
	6. Sweet potatoes	
	7. Millet	
	8. Cassava	
	9. Arrow roots	
	10. Yams	
	11. Other (specify)	
b. Livestock produce	1. Milk	
	2. Meat	
c. Fish products	1. Fish	
d. Others (Specify)		
e. I do not know		

13. Do you think the county has adequate food for its population?

	Tick
1. Yes	
2. No	**Go to Q14**
3. I do not know	

14. What are the causes of food shortage in this county?

	Tick
1. Drought	
2. High cost of food production	
3. Political instability	
4. High global food prices	
5. High poverty rate amongst residents	
6. I do not know	
7. Other (Specify)	

Challenges facing agriculture and food security

15. Does the agricultural sector face any challenges in this county?

	Tick
1. Yes	**Go to Q16**
2. No	
3. I do not know	

16. What challenges does the agricultural sector face in this county?

1. Lack of markets for farm produce	
2. Lack of loans to develop the agricultural sector	
3. Inadequate knowledge amongst farmers on agriculture	
4. Poor infrastructure – roads	
5. Poor weather patterns	
6. Political instability	
7. Fluctuating prices of agricultural produce	
8. Human conflict	
9. Other (specify)	

Recommendations

17. What do you think can be done to help develop agriculture and food security in this county?

	TICK
1. Provide training on agriculture to farmers	
2. Provide farm inputs to farmers	
3. Provide loans	
4. Provide farm implements for agricultural activities	
5. Provide market for agricultural products	
6. Develop roads	
7. Promote peace in the county	
8. Provide storage facility/warehouse for agricultural products	
9. Develop the county government	
10. Others (Specify)	

SECTION B: Relationship between Adoption of Devolved Agricultural System of Governance and Enhancement of Food Security

PART I: Public Private Partnerships

This part aims to assess the relationship between devolved PPPs and enhancement of food security in Uasin Gishu County.

Please indicate how much you agree or disagree with each of the following statements on a scale of 1 to 5. The scale is indicated as follows;

1 - Strongly Disagree (SD).

2 – Disagree (D);

3 – Neutral (N);

4 – Agree (A);

5 - Strongly Agree (SA);

S/No	STATEMENT	SD	D	N	A	SA
1	I believe that a delegated authority has helped to improve food security in the county and will have an increasingly important role to play in ensuring global food security					
2	Collaboration and action between the public and private sectors could spur inclusive and sustainable economic growth					
3	Our county has a framework of policies and procedures that guide PPPs to help in enhancement of food security in our county					

4	Accountability through collaborative mechanisms in which public organizations and private entities share resources, knowledge, and risks helps to achieve more efficiency in the production and delivery of products and services					
5	Consultation in decision making between PPPs and the county in which a business and the government invest in a project together to provide a public service can increase the scale of assistance to people.					

PART II: Agricultural Extension Services

This part aims to examine the relationship between the devolved agricultural extension services and enhancement of food security. Please indicate how much you agree or disagree with each of the following statements on a scale of 1 to 5. The scale is indicated as follows;

1 - Strongly Disagree (SD).

2 – Disagree (D);

3 – Neutral (N);

4 – Agree (A);

5 - Strongly Agree (SA);

S/No	STATEMENT	SD	D	N	A	SA
1	Intelligence gathering through devolved extension services enables devolved staff and county government make informed decisions that boosts food security in the county					
2	Unified database provides a platform for data analytics for better decision thus improving food security					
3	Control systems such as promotion of climate- friendly agricultural production systems and land-use policies at a scale to help mitigate climate change.					
4	Supporting farmers in developing diversified and resilient eco- agriculture systems provide critical ecosystem services in the county					
5	Monitoring systems provide necessary and timely information to decision makers for building sound policies and programs in the county.					
6	Forecasting using food security and nutrition indicators and careful monitoring of food prices, rainfall levels, and crop production losses guides policymakers in the county to act early to minimize the impact of the food crisis					

PART III: Staff

This part aims to establish the relationship between devolved agricultural staff and enhancement of food security. Please indicate how much you agree or disagree with each of the following statements on a scale of 1 to 5. The scale is indicated as follows;

1 - Strongly Disagree (SD).

2 – Disagree (D);

3 – Neutral (N);

4 – Agree (A);

5 - Strongly Agree (SA);

S/No	STATEMENT	SD	D	N	A	SA
1	The size of devolved agricultural staff in the county is key factor in sustainability of food security					
2	Level of education among the devolved agricultural staff determines the quality and success of food-security-oriented services					
3	Addressing the interdisciplinary challenges posed by food security requires a range of high-level skills					
4	The county cannot succeed in the long run without skilled and well-qualified staff and institutions to provide right incentives for, motivate, and manage these efforts					

5	Competence among the devolved agricultural staff in the county government and PPPs is an essential ingredient.					
6	Building capacity for food security enables the county to sustainably meet its food and nutrition security challenges					
7	Targeting young researchers from the devolved agricultural staff through capacity strengthening opportunities is a priority of the enhancing Food Security in the county					

PART IV: Funds

This part aims to establish the relationship between funds and enhancement of food security. Please indicate how much you agree or disagree with each of the following statements on a scale of 1 to 5. The scale is indicated as follows;

1 - Strongly Disagree (SD).

2 – Disagree (D);

3 – Neutral (N);

4 – Agree (A);

5 - Strongly Agree (SA);

S/No	STATEMENT	SD	D	N	A	SA
1	Allocation of funds should be prioritized for eligible nonprofits, PPPS, and food program service providers in need of a one-time infusion of assistance for projects that promote self-sufficiency and food security					
2	Management of funds and large increases in agricultural investment are needed both to raise incomes and increase the supply of food sustainably					
3	Proper skills, offering good remuneration wages and funding can help protect rural, low-income families from food insecurity in the county.					
4	Incentives to farmers such as farmers market incentives improve food security in the county					
5	Increase in food security funded projects increase agricultural productivity and the availability and accessibility of safe and nutritious food					
6	Offering incentive vouchers enhance purchasing power of low-income households among the					

PART V: Food Security

This part aims to establish the relationship between adoption of devolved agricultural system of governance and enhancement of food security in Uasin Gishu County. Please indicate how much you agree or disagree with each of the following statements on a scale of 1 to 5. The scale is indicated as follows;

1 - Strongly Disagree (SD).

2 – Disagree (D);

3 – Neutral (N);

4 – Agree (A);

5 - Strongly Agree (SA);

S/No	STATEMENT	SD	D	N	A	SA
1	Adoption of devolved agricultural system of governance leads to sustainability which is the integral part of food security planning					
2	I believe that there exists a positive relationship between adoption of devolved agricultural system of governance and enhancement of food security and as a result helps in identification of root factors such as diets, water use, and infrastructure that ultimately contribute to food insecurity.					

3	Adoption of devolved agricultural system of governance leads to sustainable agricultural practices and food systems, including both production and consumption					

THANK YOU VERY MUCH FOR YOUR TIME!!!