

Influence of Information and Communication Technology on Revenue Collection in County Governments in Kenya: A Comparative Study of Migori and Homa Bay County Governments

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Abstract: The major administrative problem today for many governments is inability to collect the revenue required for the provision of public services; huge gaps exist between reported and projected revenues in most county governments in Kenya. The purpose of this study was to establish the influence of ICT on revenue collection in Migori and Homa Bay County governments in Kenya. The objectives of the study were: to determine the influence of ICT system for single business permits on revenue collection; evaluate the influence of ICT system for land rates on revenue collection; establish the influence of ICT system for property rates on revenue collection and establish the influence of ICT system for bus park on revenue collection in Migori and Homa Bay County Governments, Kenya. The study adopted a correlation study research design whose focus was comparative analysis. The target population was 864 consisting of 848 revenue clerks and 16 revenue officers who were employees from Migori and Homa Bay county governments. Sample size was 86 respondents where the revenue clerk's were selected using stratified random sampling technique and revenue officers were selected using purposive sampling technique for this study. The study used both primary and secondary data. Primary data was collected using a questionnaire. Secondary data was collected using document analysis guide. Quantitative data analysis was done using percentages and means. Inferential statistics involved determination of coefficient of multiple correlations and regression equations to establish the relationship between the variables. The findings showed that a strong and almost a perfect association existed between ICT systems adopted in County Governments and the revenue collection ($R = 0.959a$); the application of the information communication technology systems explain up to 91.9% variation in revenue collection efficiency in the county governments ($R^2 = 0.919$). The application of these systems improves revenue collection efficiency in the county governments. Findings reveal that all the ICT systems when utilized in Homa Bay County their contribution to revenue collection is statistically significant ($p < 0.005$); the results indicate that USBPR systems utilization in Homa Bay County causes 0.456 unit increase in revenue collection in the county followed by USPRR system at 0.271 unit increase in revenue collection. Without the utilization of ICT in this county Revenue collection will be negative at -0.067 units' deficit in revenue collection. Further a strong and positive association existed between ICT systems and revenue collection ($R = 0.679a$) and the application of ICT systems in Homa Bay county explains up to 46.1% variation in revenue collection efficiency in the county government ($R^2 = .461$); indicating that 53.9% of the variation in revenue collection could be caused by other factors not included in the study. The results for Migori County indicate that when ICT systems are utilized their contribution to revenue collection is statistically significant ($P < 0.005$); USBPR systems utilization causes 0.658 unit increase in revenue collection followed by USPRR system which has 0.378 unit increase contribution towards revenue collection. Without the utilization of ICT in Migori county Revenue collection will be negative at -0.054 units' deficit. The results show that a strong and positive association exist between ICT systems utilized and the Revenue collection ($R = 0.758a$) and the application of ICT systems explains up to 57.5% variation in revenue collection efficiency ($R^2 = .575$); indicating that 42.5% of the variation in revenue collection could be caused by other factors not included in the study.

Keywords: Information And Communication Technology (ICT), Migori county Revenue.

1. INTRODUCTION

1.1 Background to the Study:

The historical perspective to revenue generation is as old as civilizations have existed. In ancient Egypt, the fifth of all crops were given to Pharaoh. Ancient Greece imposed taxes to generate revenue to fund wars. The Roman Empire generated revenue by imposing taxes on colonies so as to increase the bounty of the empire. Julius Caesar imposed 1% sales tax and Augustus instituted to fund military expenditure. The first modern revenue generation is traced to the British Empire in the 14th Century when Tsar Peter taxed beads, boots, beehives, candles, hats, horses, chimneys and water to finance public expenditure in Europe. In China, taxes were levied 3000 years ago as the empire was being established (Aamir et al., 2011)

In the United States, Economists generally caution that government leverage in excess of about 60 percent of the economy is problematic, and a rising debt level is simply unsustainable for an extended period of time. A rising debt level is ultimately unsustainable because its growth exceeds that of the overall economy. Congressional Budget Office of the United States finds that reducing government budget deficits, thereby bending the curve on debt levels, is a net positive for economic growth. CBO finds a dichotomy, however, between the short-term and longer-term impacts of deficit reduction. For instance, CBO's short-term economic models are driven mainly by demand-side factors. According Cooper and Schindler, (2006) these are short-term models deficit reduction that lowers government spending leads to a temporary reduction in economic output due to the assumed reduction in consumption as a result of lower government transfers. These models assume government spending has a "fiscal multiplier" in excess of 1, meaning that its reduction leads to an outsized reduction in overall economic output. In every dollar the government spends must be taxed or borrowed from the private sector (House Budget Committee, 2013).

In Europe, revenue generation is from income tax, allowances, bands, rates, taxation on charitable, tax on bank interest, tax credits, land fill tax, climate change levy, aggregate levy, betting and gaming levies, capital gain taxes, inheritance tax, stamp duties, corporate tax, sea tax, bank levies, council or community tax and national insurance tax. In Europe, total UK government receipts are forecast to be £648.1 billion in 2014–15, or 37.7% of UK GDP. This is equivalent to roughly £12,400 for every adult in the UK, or £10,000 per person. Not all of this revenue comes from taxes: taxes as defined in the National Accounts are forecast to raise £606.0 billion in 2014–15 fiscal years, with the remainder provided by surpluses of public sector industries, rent from state-owned properties and so on (International Financial System, 2014). In India, revenue generation like other countries is mainly through their tax regime. Taxation Powers in India's federal structure of Central Government constitute; direct Taxes: (Income Tax, Corporation and Personal) Dividend Distribution Tax, Wealth Tax), indirect Taxes: Central Excise, Customs, service Tax, transaction Tax: Securities Transaction Tax, Value Added Tax. Other revenue generation in India comprise of Excise on alcoholic liquor, luxury tax, entry tax, electricity duty, entertainment tax, stamp duty, property tax, professional tax, agricultural income tax (International Monetary Fund Report, 2012).

Revenue generation in Rwanda is guided by the general provisions of law. The law demarcates taxation as a primary source of revenue generation to fund public expenditure. Rwanda has enacted tax laws to facilitate the collection of taxes and enhance compliance with tax laws. These laws include; Law on Direct Taxes on Income 16 of 2005 as amended, law on Value-added tax no. 37 of 2012, as amended, Law on Tax Procedures no. 25 of 2005, the Commissioner General's Rules and Ministerial orders. This is the foundation of revenue generation in Rwanda (PWC, 2015). Revenue generation in Tanzania is regulated by the country's tax guide. In this guide, the tax rate of 30% on corporations is levied on both resident and non resident corporations. Equally, 25% tax is levied on newly listed companies as revenue generation to fund public expenditure. Capital deductions on building and plants on a rate range of between 5% and 37.5 percent are part of revenue generation for the Tanzanian Administration (Tanzania Tax Guide, 2015).

In Uganda, revenue generation is critical just like in Rwanda and Tanzania. While Ugandans pay more taxes today than three decades ago, the tax to GDP ratio is still a paltry 13%, one of the lowest in Sub Saharan Africa. Meanwhile, highly-profitable companies, especially multi-national corporations who benefit from operating within Uganda's natural wealth and infrastructure, are finding ways to significantly and unfairly reduce their tax bill. There are several challenges that bedevil Uganda's tax and revenue generation efforts, and one such is a tax incentives regime that studies by international

financial institutions and local researchers have proven are not really useful in terms of determining investment decisions (Action Aid, 2013).

Taxation is the key source of revenue that the government of Kenya uses to provide public services to its citizenry. Over the last decade tax performance in Kenya has significantly improved in nominal terms averaging about 24% of the size of the economy. This has enabled the government to finance 60% of the budget. Due to its importance, tax policy debates and decision making becomes a critical issue to the public, to businesses and the economy at large owing to the varied impact that it will have on each of these entities. Therefore the design and performance of the tax system has implications for inequality and as such it is the role of the government to ensure that it pursues a fair tax system for equitable distribution of income and welfare of the citizens. The tax systems will hitherto passing the new Constitution of Kenya 2010 reflects a two tier system of government comprising the national and 47 county governments (Mutua, 2012).

Revenue is collected by the government upon its citizens for support or for the purpose of facilitating the Service Delivery in a country (Aamir et al., 2011). It is neither a voluntary payment by the tax payer nor like a donation. Rather it is an enforced payment to the government (Garner, 1999). County Governments therefore collect revenue for investment, Socio-Economic development and growth at the grassroots (Olatunji, 2009) and service delivery. Thus collection of adequate revenue by County Government is essential for economic development, growth, and improved service delivery at the County level (Clegg and Greg, 2010). So, sound revenue system for county governments is a vital pre-condition for the success in promoting efficiency in the service delivery and economic development at the counties (Ngotho and Kerongo, 2014). For most developing countries, revenue collection goes hand-in-hand with economic growth and the revenue is the lifeblood for governments to deliver essential services and to make long-term investments in public goods (Organization for Economic Co-operation and Development (OECD, 2008).

It is very evident that in the modern economy, optimizing revenue collection has gained increasing prominence. According to Ngotho and Kerongo (2014). More importantly, high revenue collection performance is vital in promoting efficiency in the service delivery and economic development at the counties. However, studies have shown that most county governments face serious challenges in their revenue collection (Balunywa, 2014), where county governments are not able to collect sufficient funds to cover their budget expectations. For years revenue collectors have not been channelling all the amount of money they collect to the County Treasury (Ngotho and Kerongo, 2014).

For instance, revenue collection staff may collude with the revenue payers to avoid paying the prescribed charges and instead bribe the collector to shield against paying the correct amount to the County. The net effect could be a bigger loss, which would deter county economic development (Mutakha, 2011), growth (Olatunji, 2009), and improved service delivery (Namoi, 2012). To eliminate or significantly reduce corruption, achieve the county financial objective and simplify payments (Abor, 2004), the electronic revenue collection systems has been put in place by the county. Electronic revenue collection systems are meant to facilitate elimination of losses of revenue through corruption (Balunywa, 2014) and simplify payments (Abor, 2004).

In today's knowledge based world, providing public services heavily depend on information and communication technologies. The internet has simply become the basic information communication and sharing area of the future (UNCTAD, 2008). While information technologies provide austerity at an important level, they also improve the quality of the public service. One of the important application area related to the use of information technologies in the public services is taxation. Electronic tax return, E-payment systems and tax automation systems generated in this area gain an increasing importance because of their ability to increase collections. Electronic tax management applications firstly started in the USA, and then spread in other developed and developing countries. Factors such as information and communication technologies which develop rapidly together with the process of globalization, gain strength and decrease costs and the increasing information sharing have extended the electronic tax management applications

Automated systems like E-payment that has been embraced by the county have been proven to be capable of introducing massive efficiencies to business processes that can result in increased revenue collections (Zhou and Madhikeni, 2013). Application of technological solutions towards the strategic goals for government is a key step towards transforming Migori county government into an entity that can keep abreast of the needs, requirements and expectations of today's modern world (Wulf and Sokol, 2005). E-payment is a payment by direct credit, Electronic Transfer of credit card details, or some other electronic means, as opposed to payment by cheque and cash (Amigos, 2004). E-payment is a payer's

transfer of a monetary claim on a party acceptable to the beneficiary, a financial exchange that takes place online between the buyer and the seller. The process of cashless transactions plays a big role in ensuring that the County Governments collect enough revenue to fund its projects.

When it comes to making electronic payments, there are a handful of options available to tax payers within Migori county, primarily: checks, Electronic Funds Transfer (EFT), Automated Teller Machine (ATM), cards (debit, credit and smart), Electronic Purses/Wallets, mobile money (Mobile Banking and Money Transfer), Telephone Banking, Personal Computer Banking (Home Banking), Digitized 'E-Cash' Systems, Electronic Cheque, Online/Internet Payments (IFMIS) and Digital Person to Person (P2P) Payments (Wahab, 2012). The content of P2P exchange is usually the form of digital financial instrument such as encrypted credit card numbers, electronic checks, or digital cash that is backed by a bank or an intermediary, or by a legal tender. According to Pariwat and Hataiseere (2004), for the achievement of effective and efficient retail payment systems, the following considerations that shape the choice of payment method for consumers and businesses should be taken into account; the convenience, reliability and security of the payment method, the service quality, involving such features as the speed with which payment are processed; the level and structure of fees charged by financial institutions; taste and demographic; and technological advances which have improved the speed, convenience and flexibility of different payment systems. Electronic payment is convenient, safe, and secure methods for payment of bills and other transactions by electronic means such as card, telephone, the Internet, Electronic Fund Transfer. Electronic payment gives consumers an alternative to paying bills and debts by cash, cheque and money order (Wahab, 2012). Migori county happens to be a unique county because it is the first one to put in place digital advertisement bill boards that boosts revenue collected, it also has a citizen service centres in the (8) sub counties that helps in training of employees on ICT (Migori County Report, 2016).

Migori county has made tremendous steps in automating not only its revenue collection but also digitizing various revenue earning platforms like the introduction of the digital bill boards around the county which has proven to be a proper income stream for the county. Automated tax systems at the county are also properly mapped and integrated to the county's integrated financial information management system (IFMIS). This is a key link between revenue collection, budgeting and utilization of the county funds towards financing the key functions of the devolved unit. The county also has an M-Pesa pay bill number which assists in revenue collection especially from small and medium enterprises who can easily remit levies through various mobile banking platforms. Studies by; Muema et al. (2014); Kinyanjui and Kahonge (2013); Wahab (2012); Rocheleau and Wu (2005) had not significantly addressed the effect of automated revenue collection systems on efficient revenue collection by Migori County Government. This is to say that past studies have not sufficiently addressed the factors of automated revenue collection systems and their influence on revenue collection in Migori and Homa Bay County Governments, a knowledge gap thus exist. It is in this light that this study sought to address, level of ICT on revenue collection in Migori and Homa Bay County Governments in an effort to recommend on ways to ensuring optimal revenue collection.

1.2 Statement of the Problem:

One major administrative problem today for many governments is their inability to collect the revenue. There are huge gaps between reported and projected revenues in most county governments. It is not clear the extent to which ICT is attributable to poor administrative capacity to assess the revenue base, enforce the payment of taxes, explicit and intentional tax evasion and resistance from taxpayers in county governments. Fundamental issues to be addressed in the context of county government fiscal reforms are to redesign the current revenue structure and to strengthen financial management to improve performance in the provision of public goods and services. The priorities outlined in the Medium Term Plan of Kenya Vision 2030 and in most County Government's Integrated Development Plan are usually guided by the development of sector priorities, policies, plans, monitoring and evaluation processes. When preparing the budget reports, County government entities are expected to focus on the County priorities contained in the Medium Term Plans. In the budget report FY2014/15, most County governments projections on public expenditure was on average Kshs.8.8 billion, with allocation from central government of Kshs.6.5 billion on average in comparison with generated revenue of Kshs. 751 million on average thereby creating a budget deficit of Kshs. 1.549 billion, this budget deficit is hard to fill regardless of revenue streams. This indicates that there is inadequate link between Revenue collections, Budget deficit financing and operational performance. Therefore the revenue collection efficiency can be linked to information communication technology and operational performance of county governments in Kenya. Migori and Homa Bay County

governments have been continuously criticized for paying workers late, failing to timely remit union and employee loan repayments to banks, frequent cash shortages at the county treasury to fund the most basic county needs like providing primary health care to the public through acquisition of medical supplies, a growing legion of disgruntled county suppliers and an evident overdependence on National government funding. Besides, there is always a huge gap between the projected annual revenue and the actual revenue declared by the county Governments. This study therefore seeks to assess influence of information communication technology on revenue collection efficiency in Migori and Homa Bay County Governments in Kenya.

1.3 Objectives of the Study:

1.3.1 General objective of the Study :

The general objective of the study was to assess the influence of Information communication technology on revenue collection in Migori and Homa Bay County Governments, Kenya.

1.3.2 Specific objectives of the study:

This study was guided by the following specific objectives;

- i. To determine the influence of information communication technology system for single business permits on revenue collection in Migori and Homa Bay County Governments, Kenya.
- ii. To evaluate the influence of information communication technology system for land rates on revenue collection in Migori and Homa Bay County Governments, Kenya.
- iii. To establish the influence of information communication technology system for property rates on revenue collection in Migori and Homa Bay County Governments, Kenya.
- iv. To establish the influence of information communication technology system for bus park on revenue collection in Migori and Homa Bay County Governments, Kenya.

1.4 Research questions:

This study was guided by the following specific research questions;

- i. What is the influence of information communication technology system for single business permits on revenue collection in Migori and Homa Bay County Governments, Kenya?
- ii. What is influence of information communication technology system for land rates on revenue collection in Migori and Homa Bay County Governments, Kenya?
- iii. To what extent does information communication technology system for property rates influence revenue collection in Migori and Homa Bay County Governments, Kenya?
- iv. What is the influence of information communication technology system for bus park on revenue collection in Migori and Homa Bay County Governments, Kenya?

1.5 Significance of the study:

The study findings and recommendation will be beneficial to County Governments, National Government, and the citizens of both governments. The Migori and Homabay County governments would benefit by gaining information on how to ensure effective e-payment that would enrich the revenue collection by the government hence achieve the objectives of the counties and propel socio-economic development through effective revenue collection performance. The potential success story of Migori and Homa bay Counties would also motivate other peer Counties to emulate this trend.

The findings of the study will enable the National Government to recognize the role of County Governments in creating effective strategies to enhance revenue generation. The National government and its agencies might gain by obtaining information to enable them put in place policies to support the achievement and sustainability of devolved funds for socio-economic benefit through effective revenue collection mechanisms.

To the academia, the findings from the study will contribute to the body of scholarly knowledge in ICT as a tool to optimize revenue collection. The study is a window opener for more research in the area of effective ICT enabled systems that would enhance high revenue collection performance.

1.6 Scope of the Study:

The study will focus on Migori County and Homa-Bay County with specific reference to ICT systems adopted to improve on revenue collection and any area outside ICT systems and Revenues collection in county governments was not part of this study.

1.7 Limitations of the Study:

The study was limited to revenue collection systems and county governments operations. The period of study was limited to 10 months for secondary data collected from the books of accounts of Migori and Homa Bay counties. Primary data was collected from the respondents in county governments of Migori and Homa Bay. This study was limited to a comparative study of the variables under investigation.

1.8 Operational definition of Terms:

Innovation is the application of better solutions that meet new requirements, in articulated needs, or existing market needs. This is accomplished through more effective products, processes, services, technologies, or ideas that are readily available to markets, governments and society ((Boston Consulting Group, 2009).

Credit card is any card that may be used repeatedly to borrow money or buy products and services on credit card that may be used repeatedly to borrow money or buy products and services on credit. Credit cards are issued by financial institutions, retail stores, and other businesses. A credit card offers the card holder revolving credit that can be paid monthly with as little as the required minimum payment. (Francesca and Claeys, 2010).

Debit Card is a card which allows customers to access their funds immediately and electronically. Unlike a credit card, a debit card does not have any loan facility (Francesca and Claeys, 2010).

Point of Sale (POS) Terminal is a retail payment device which; reads a customer's bank's name and account number when a bank card or credit card is swiped (passed through a magnetic stripe reader). It contacts the bank and (if funds are available) transfers or withdraws the customer approved amount and prints a receipt (Business Dictionary, 2011).

Real Time Gross Settlement (RTGS) is a system for settlement of large-value transactions between banks and other financial institutions (Boston Consulting Group, 2009).

Communication – digital communication using computers is popular and is being adopted worldwide as opposed to analogue communication using the telephony system. Computers have also enhanced communication through email communication, electronic data interchange, electronic funds transfer and Internet.

Revenue- refers to amount of cash collected using a given information communication technology system.

2. LITERATURE REVIEW

2.1 Introduction:

Information and communications technology (ICT) is the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions. ICT is often considered as an extended synonym for information technology (IT), its scope is broader. ICT describes the convergence of several technologies and the use of common transmission lines carrying very diverse data and communication types and formats. In the late-1990s to late-2000s; the advent of the Millennium Development Goals combined with the rise and spread of the Internet in industrialized countries led to a rapid increase in investments in ICT infrastructure and projects in developing countries. The most typical application was the telecentre, used to bring information on development issues such as health, education, and agricultural extension, into poor communities. Later, telecentres were used to deliver government services. Information Communication Technology and Economic Development reveal new insights regarding the complex process of globalization. It shows how the generation and circulation of intellectual capital in the US and India in ICT have led to greater productivity in the US

while facilitating the economic development of India. Most industrialized nations now see the vast intellectual capital-based services that India provides at extremely competitive rates as key to their own national competitiveness in the global arena.

2.2 Information Communication Technology in County Governments:

This section focuses on the various systems adopted by the county governments as strategic tools for revenue collection. The ICT systems discussed include: system for single business permits revenue, system for land rates, system for property rates and the bus park rates revenue collection systems.

2.2.1 Information Communication Technology System for Single Business Permits:

As the government endeavours to promote economic development, it must work at creating an enabling environment for business, and support the growth and development of SMEs which comprise 99.6 percent of the country's business establishments and contribute 70 percent of employment.

2.2.2 Information Communication Technology System for Property Rates:

In Kenya, real property taxes are recognized as the most important locally generated revenue source and contribute substantially to the locally generated income. Property taxes provide an average of 20% of the total recurrent revenue for local authorities and represent 1% of total government revenue and at least 0.23% of the Gross Domestic Product according to (Kelly, 2001). Property taxes are the major source of revenue that allows governments to provide community services such as fire and police protection.

2.2.3 Information Communication Technology System for Land Rates:

Land rate is charged by county governments for the services rendered. Such services are provision of accessibility, provision of mobility, provision of education facilities, provision of security, provision of fresh and clean water, provision of street light, provision of sewerage facilities. This mandate of service provision was initially is vested on local government authorities by the Local Authority Act (Cap 265) Laws of Kenya. Land rates accrue from land as a result of land valuation by either the government or any Licensed Registered Land Valuer. Rating systems differ depending on whether the rate is applied on land only or on land and improvements. The Government of Kenya, The Rating Act (Cap 267), 1972 and the Valuation for Rating Act (Cap 268), 1972 and as modified in the recent years provides for three types of rates: area rate based on the size and use of the land; unimproved site value rate based upon the capital value of the bare land and the site value and improvement rate which is based on the land and improvements separately.

2.2.4 Information Communication Technology System for Bus Park Rates:

The adoption of ICT, households and businesses increase their geographic reach and potential for network contact through an interplay between physical and virtual activities (Janelle and Gillespie, 2004; Shaw, 2004). According to Couclelis (2000) is the fragmentation in time and space of formerly holistic activities and their recombination in new ways. Trackability is major attribute provided by ICT to persons, vehicles and goods. It refers to real-time dynamic mapping of activity paths and routes. Accordingly, it opens ways to real-time detection and management of flows through transport and communication networks, and spans a broad range of applications to increase efficiency of flow. Such ICT innovations are implemented in the transport system, and accordingly have a much smaller scope than the above-mentioned extensibility and often have a more local impact, on key sections of links and nodes of transport networks. The most powerful attribute that ICT provides to persons and organizations is intelligence (Kenney and Curry, 2001). This refers to the capability to collect, process, distribute, steer and monitor value chain processes in distributed places. In manufacturing and services, this leads to various types of reorganization of value chains for efficiency reasons that are related with time, cost-effectiveness or product quality.

2.3 Revenue Collection in County Governments:

The County System of government was established by the Constitution of Kenya 2010, article 176. Many counties cover vast geographical areas and revenue management therefore becomes a major challenge. The symptoms of poor revenue collection are stalled projects, poor service provision, reliance on few and known revenue streams, late payment of suppliers, reliance on central government, slow growth of the counties, persistent worker strikes, stakeholders dissatisfaction, poor county infrastructure and inaccurate budgets. Only nine of the 47 counties surpassed the Sh718M

national average revenue for use in meeting their budgetary needs for 2015. Overall revenue collection Nairobi county leads in revenue collection by 11.6 billion, Mombasa at 2.5 billion, Nakuru at 2.2 billion, Kiambu at 2.1 billion, Narok at 1.6 and Machakos at 1.5 billion Kenya shillings. Despite this huge amount collected not all county governments are in a position to achieve their revenue targets. The complexity of revenue collection process involves assessment of taxes, charges and fees, billing of taxes and charges and the related issues on deposit of revenues (Institute of Economic Affairs report, 2015).

The study by Rocheleau and Wu (2005) found governments can affect usage rates of e-payment by providing incentives to employ online transactions and or penalties for making payment by manual methods but did not show the effectiveness of the e-payments in risk management. A study by Moulder (2005) showed that most county governments had plans to offer online payment of utility bills, fees and fines. Norris & Moon (2005) point there is interest by governments to use e-payment systems. Taxes are compulsory payments to government without expecting direct benefit or return by the tax payer. Taxes collected by the government are used to provide common benefits to all mostly inform of public welfare services. Taxes do not guarantee any direct benefit for the person who pays the tax. The government collects tax revenue by way of direct and indirect taxes, direct taxes includes; corporate tax; personal income tax capital gain tax and wealth tax. Indirect taxes include custom duty, central excise duty, VAT and service tax (Blind, 2005). Non automated systems are manual systems of revenue collection which are centrally from one place. Before the introduction of automated systems of revenue collection, local authorities used manual systems of collections by using manual receipts. Problems such as high costs for collection, fraud, underpayment and leakages in revenue were worse by massively expanding the current taxable base without the use of adequate computerized solutions (Fjeldstad & Heggstad, 2012). None automated systems of revenue are attributable to problems of tracking and identifying fraud or rogue revenue collectors are only compounded by the usage of manual or centralized systems due to the resources and overheads needed to monitor and control such problems. Manual collection of payments at several service points lead to delayed customer service with built in risk of manual cash management minimal payment channels. Disparate payment applications and lack of integration to the back office applications bring about delayed and possibly erroneous analysis and reporting (Prichard, 2010).

The use of ICTs for self-assessment addresses the challenge of the integrity of employees and promotes voluntary compliance. Training is essential because it provides clients with the skills necessary in raising their attitude of voluntarily complying with taxation systems. In the Tanzanian revenue authority, employees organize seminars to educate stakeholders about the benefits of voluntary tax compliance. However, many respondents admitted that they never received training from tax officers. This is partly due to inadequate members of staff. The mobile technologies can be useful in providing trainings (Lubua, 2014). Kayaga (2010) study showed that new technology alone is not sufficient if the government does not recognize the need for skilled tax officials. The scholar further avers that, effective tax administration requires qualified tax personnel with requisite skills to maintain these systems and operate them to their fullest potential. Simiyu's (2010) study indicated established that, tax officers accepted bribes when offered to reduce tax liability and demand for bribes when they visited, a situation that hugely affected revenue collection in Nairobi County, Kenya. Gikandi and Bloor (2010) study found that some factors tended to inhibit the adoption of e-commerce in Kenya. These include; lack of resources, constant change in technology, time available to develop systems, the lack of spread of accessibility and use of Internet by the general population, especially in the rural areas. Organizational, governmental and developmental issues were also identified as constraints to the adoption of e-commerce in the banking sector in Kenya. The study observed that e-banking introduced new risks requiring new risk management strategies, including Internet security, customer and legal related issues. The study concluded by emphasizing the role of Kenya Government in achieving a secure environment for e-banking activities by; putting in place clear laws, rules and regulations and providing relevant technical training to the regulatory authority to empower them to enforce the laws effectively.

The study by Rocheleau and Wu (2005) found that some of the most challenging e-government applications involve allowing citizens and other customers to conduct financially related transactions electronically with governments on a 24-hour, 7-day a week basis. Generally, usage rates are low, demonstrating that there is a gap between the potential and reality of this form of e-government. Statistical tests showed that convenience fees have a negative effect on usage rates. The governments can affect usage rates by providing incentives to employ online transactions and penalties for making payment by manual methods. Governments may also improve their usage rates by making their websites and applications accessible and easy-to-use as well as by extensively marketing these applications.

A study by Moulder (2005) showed that most county governments had plans to offer online payment of utility bills, fees and fines. Norris & Moon (2005) point out that the percent of governments adopting e-payments financial transactions should have jumped by 32 per cent between 2000 and 2002 but the actual increase was only 6.5 percent. There are significant obstacles to offering online services which included; lack of IT staff and financial resources; issues of security and convenience. This finding could reflect their interest in developing online transaction systems. The study by Kaburia (2004) found out that lack of suitable e-Payment alternatives was a critical challenge to the growth of e-commerce in Kenya. An e-Payment model suitable for individuals in Kenya was proposed. Perlman (2001) established that the use of third party vendors has allowed counties without large ICT resources to implement an online ticket-paying system. This shows that small and moderately-sized cities can experience success through use of vendors and cooperative efforts of pooling resource.

Muema et al. (2014) study was vocal in agitating for e-payment in Nairobi County and the parking industry using mobile parking management system but the study was cognizant of the barriers which could be overcome. The study did not give the specific mechanisms of overcoming these barriers, which the current study will do. The study by Kinyanjui and Kahonge (2013) revealed that the use of e-payment by mobile phone based technology in mobile parking increased parking fees collection. It recommended for development of an application to control traffic flow, allocation and availability of parking space within the streets of Nairobi but failed to handle the penalty payment mechanism, an issue the present study will handle carefully. Otieno et al. (2013) study found that IS enhanced both efficiency and effectiveness in revenue collection but did not touch on e-payment system as means of increasing revenue collection and eliminating corruption. The study by Wahab (2012) established that the adoption and use of the e-payment system was found to be low mainly due to the inadequate availability of resources Gikandi and Bloor (2010) study found that lack of resources tended to inhibit the adoption of e-commerce in Kenya.

Wasao (2014), describes electronic tax system as an online platform whereby the taxpayer is able to access through internet all the services offered by a financial authority such as the registration for a personal identification number, filing of returns and application for compliance certificate, a perfect example of such system is the Electronic taxation system that was rolled out in 2013 by the Kenya Revenue Authority. Kenya Revenue Authority for instance as one of the financial authorities in the world conducts this Electronic tax system through the Business Process Improvement (BPI) and increases scope of electronic interaction with taxpayers to boost staff productivity and taxpayer service. Citizens have, for decades, been using cash and check to pay taxes and registration fees and to reimburse states for services. Meanwhile, ACH transactions have primarily been used for payment of state taxes and fees, especially large payment amounts made by corporations and other major employers. Credit and debit cards, while being a payment option for some government agencies, are still not as prevalently accepted as other payment media. Electronic payments for government taxes and fees whether in the form of ACH, credit card, or debit Card offer many benefits to government agencies and citizens. These include: reduced processing costs associated with cash and check payments; reduced transaction processing time and costs; Improved payment verification and auditing through real-time authorization and verification; reduced accounts receivables and payment delinquencies, and fewer need for debt collection activities; Improved fund availability by reducing check float and enhancing cash flow; Added convenience for citizens. These payment channels are: The Automatic Clearing House ACH network is a processing and delivery system that provides for the distribution and settlement of electronic credits and debits among financial institutions. It is a batch processing, store-and-forward system with transactions received by the financial institutions during the day being stored and processed later in a batch mode. ACH transactions are a common form of electronic funds transfer used to make both recurring and nonrecurring payments. Depository institutions originated 6.8 billion ACH transactions during 2000 for themselves and their customers, twice as many as were initiated during 1995 (CPSS 2003). ACH has typically been used for payroll direct deposits, government benefit payments, corporate payments to contractors and vendors, mortgage and loan payments, insurance premium payments, corporate cash concentration transactions, and payments to and from the state or federal government. Pricing for ACH transactions is typically negotiated between the originator and the originating financial institution. While the costs of ACH payments compare favorably with credit and debit cards and checks, ACH does not afford citizens and consumers the same protection from fraud as are afforded credit card users (OECD, 2011).

Seelmann, Lerche, Kiefer and Lucante (2011) did a study on Benefits of a computerized integrated system for taxation in Tanzania; they argued that Taxation is often the most important source of state revenue. However, many developing countries lack effective tax administration structures and processes. Technological innovations have not filtered through

to the daily working reality of tax officials. They concluded that Computerization of tax and revenue authorities can contribute to reaching the goal of good (financial) governance. It improves accountability and transparency of the revenue authorities. Nevertheless, while reforming and modernizing the tax system is an essential part of improving domestic resource mobilization, such a reform will be sustainable only in conjunction with more profound changes in the administrative and political structure of a state. This study concentrated on modernizing tax collection systems but fell short in pointing out the elements that makes a modern revenue collection system. The proposed present study shall bridge this gap by pointing out how specific determinants of a modern and efficient revenue collection system like e-payment tax systems optimize revenue collection.

Sagas, Nelimalyani and Kimaiyo (2015), did an assessment of the impact of electronic tax register on revenue collection by Kenya Revenue Authority western region, Kenya. Findings from their study indicated that indicated that 75% of the respondents were of the opinion that ETR machines have helped to curb cases of tax evasion 86% of the respondents were of the opinion that ETRs have helped increase revenue collection due to their efficient nature. This study however, is limiting since it only focused on the electronic tax register which is just a single example amongst other various electronic tax systems. It failed to view other possible variables that collectively contribute to optimal revenue collection. This proposed study will give a holistic approach to the application of ICT on revenue collection.

Wawire (2000) did a study on the tax buoyancy and income-elasticity of Kenya's tax system. Tax revenues from various sources were regressed on their tax bases. The study concluded that the tax system had failed to raise necessary revenues. However, the shortcomings of the study were that it never considered other important determinants of tax revenue, for instance the unusual circumstances that could have affected tax. It also never disregarded tax revenue data by source hence it was difficult to say which tax bases contributed more to the exchequer. Finally, it never considered the time series properties of the data used. Muriithi and Moyi (2003) did a study on the productivity of Kenya's tax structure in the context of the tax reforms focusing on pre and post reform period. In the study, they assessed the buoyancy and elasticity of individual taxes and the overall tax system. Their findings suggest that tax reforms had a positive impact on the overall tax structure and on the individual tax handles, even though the impact of the reforms was not always uniform. The reforms had a bigger impact on direct taxes than on indirect taxes, suggesting that revenue leakage is still a major problem for indirect taxes. Their study however, was on general tax reforms in the country and was not specific. This proposed study will specifically look at ICT as an element on revenue collection through the tax systems in counties.

2.4 Empirical Literature:

2.4.1 Information Communication Technology Systems for Single Business Permits and Revenues Collection:

Recently Government of Kenya (GoK) and county governments in Kenya have made moves to simplify business licenses accompanied with the efforts to amend the Companies Act, the enactment of the Investment Promotion ACT and the adjustments on the Sectional Paper No. 2 of 2005 on 'Development of Micro and Small Enterprises for Wealth and Employment Creation for Poverty Reduction' introduces new opportunities for indigenous Kenyan entrepreneurs. However, access to and awareness of such legislations as well as other legal business require and information has remained largely confined to elitist business leaders and this has recurred in the county governments today. Rural entrepreneurs in provinces, districts and other towns may not have access to such investment information, which they could take advantage of.

The Investment Promotion Act (2004) is the main Government of Kenya legislation with a purpose of promoting and facilitating both local and foreign investments. The Act particularly states the licenses and other related requirements that a local or a foreign investor in Kenya should have. Most of the local investment businesses in Kenya fall under the Micro and Small Enterprise (MSE) business sector. The sector employs about 74.2% of the Kenyan workforce and contributes to about 18.4% of the country's Gross Domestic Product (GDP). The government of Kenya therefore considers this sector as an important sector in the development process, and is in the process of putting in place some programmes to develop this sector. The Economic Recovery Strategy Paper for Wealth and Employment Creation (ERS) 2003-2007 identifies SMEs and in particular juba kali expansion as one of those activities that will assist in economic recovery and growth. The publication of Sectional paper no. 2 of 2005 on 'Development of Micro and Small Enterprises for Wealth and Employment Creation for Poverty Reduction' is one of the most important current government efforts to develop the MSE sector. The Act sets policies for developing the MSEs. Some of these policies include, among others: continued legal and

regulatory reforms in the sector, harmonization of trade licensing and regulatory services, and decentralization of business registration to the district levels today called county governments, quickening the process of business registration, and reforming the tax regime to improve its transparency and efficiency, strengthening tax collection and harmonizing the tax system for the business units to generate revenue for the provision of public services.

Automation of revenue collection system involves investing in modern technologies like ICT in order to upgrade the revenue system to achieve integration and information sharing in so as to enhance efficiency and effectiveness of the system. All Sectors of the County should put in place an effective and efficient revenue collection system in monitoring framework that ensures adequate supervision of the budgeted programs and project activities to enhance accountability and absorption of resources (Amin, 2013). Automation of revenue collection systems and structures is instrumental in improving and simplifying administration of taxation through utilizing modern technologies for example ICT. With a modern system of revenue collection, county Government can mobilize additional revenue by increasing collection efficiency as well as by expanding its revenue base. With increased reach and fiscal depth, the many challenges facing government can be addressed in some measures by simply having access to more financial resources. As such, the primary aim of computerized revenue collection must be to increase cash receipts in order to effectively sustain the utility and generate an acceptable return on investment related to the system. Leakages that occur because of untimely collection, fraud and under-collection could be reduced by streamlining and automating the revenue collection process. Penalties may be automatically applied to late payments. Daily reporting of cash receipts and due payments to be collected should be automatically generated by the system (Kamolo, 2014).

The challenges of automating revenue collection faced by the county government include resistance from the employees in the county. When attempting to change a business culture managers frequently must deal with employee resistance. Most employees are comfortable with the way they operate and do not want change (Shaver, 2006). The management must continually reinforce the new behaviors and seek to keep employees from reverting to the old ways of doing business for example without accountability (Spencer & Casey, 2007). The other potential problem with implementing organizational change is the training requirements that come with it. Simonson (2005) notes that when you want to change the behavior of an entire company, you have to invest in considerable amounts of training for everyone. This can be expensive and can significantly reduce productivity. The management of the organization should consider many factors when making a decision to introduce any form of change. When a business is performing poorly it may be obvious that changes are needed (Shields, 1999). Choosing the proper route can be a difficult process. If upper management chooses the wrong way to go about change, it can hurt the company significantly. The managers may not be able to tell if the new system is a bad fit or if the employees are just going through a transitional phase (Simonson, 2005). The management needs to develop a plan that acts as a guide to the new change, process and procedures they intend to put in place to implement the change. Organizational change requires a comprehensive plan (Simonson, 2005). Most organizations make the mistake of implementing change without seeing it all the way through. The management requires developing a step-by-step plan for the organizational change and then enforcing it. These processes are similar to implementation of revenue collection systems in county governments.

From the past studies, it's evident that most of these studies have laid more focus on the back end solution of revenue collection none have focused on the single business permits system end solution on revenue collection. In the early days of automation a resident computer system was referred to as automated system. The level of automation today captures the entire business process and is made to reduce human intervention, raising the bar of interference from corrupt officials. Transactional monitoring is very advanced, with instant reporting to various departments, this makes it difficult for officials to making changes of reports to favor a required output. This study therefore seeks to fill this gap through determining the influence of automation single business permits system on revenue collection in Migori and Homa Bay County.

2.4.2 Information Communication Technology systems for Land Rates and Revenue Collection:

Land rates accrue from land as a result of land valuation by either the government or any Licensed Registered Land Value. Land rate is charged by local government authorities for the services rendered. Such services are provision of accessibility, provision of mobility, provision of education facilities, provision of security, provision of fresh and clean water, provision of street light, provision of sewerage facilities, etc. This mandate of service provision is vested on local

government authorities by the Local Authority Act (Cap 265) Laws of Kenya. The current county governments took over the burden from the local authorities.

In Kenya, the Rating Act allows local authorities today called county governments to tax either land or land and improvements like buildings. Although the first application of "Rating" in Mombasa in 1921 was based on land and improvements (the annual rental value of occupied premises), all property Rates in Kenya are currently levied only on land but improvements (buildings and structures) are not taxed. Rating has been described as the assessment of property tax payable by applying a monetary charge in the form of a rate to the value or values appearing in a Valuation Roll. Rating systems differ depending on whether the rate is applied on land only or on land and improvements. The Government of Kenya, The Rating Act (Cap 267), 1972 and the Valuation for Rating Act (Cap 268), 1972 provided for three types of rates and area rate based on the size and use of the land unimproved site value rate based upon the capital value of the bare land and the site value; and improvement rate which is based on the land and improvements separately. The Rating Act, of 1972, provided extreme flexibility in defining the tax base. Rating authorities used an area rating, an agricultural rental value rate, a site value rate or a site value rate in combination with an improvement rate. For area rating, The Rating Act (Section 5) again provides flexibility to use one of five different options, including the use of a flat rate or a graduated rate upon the area of land, differentiated flat or graduated rates according to land use or any other method of rating upon land or buildings that the rating authority may resolve (Olima and McCluskey, 1999).

2.4.3 Information Communication Technology Systems for Property Rates and Revenues Collection:

In Kenya, real property taxes are recognized as the most important locally generated revenue source and contribute substantially to the locally generated income. Property taxes provide an average of 20% of the total recurrent revenue for local authorities and represent 1% of total government revenue and at least 0.23% of the Gross Domestic Product according to (Kelly, 2001). Property taxes are the major source of revenue that allows local governments to provide community services such as fire and police protection. Geospatial Information System (GIS) has proved application in many fields in human life that is medicine, social science, science and engineering. But a good number of sectors and like many governments have not fully embraced the use of this technology in Kenya. Nearly all the information needed to operate Local Authorities is geo-referenced as zoning properties, roads, schools, parks, utilities. Tax mapping is a method of identifying real property units, establishing property boundaries, determining actual use and discovering undeclared properties. Real property generally encompasses land, land improvements resulting from human efforts including buildings and machinery sited on land and various property rights over the preceding. Tax mapping operations aims to establish a complete inventory of all real property in an area like a county and to provide a permanent link between real property and office record. Tax mapping also provides opportunities to account for total land area of the municipality. It provides a way for the discovery and listing of unaccounted land parcel. Tax maps maintained as part of a GIS are more easily updated, organized, and shared across departments in a county government. GIS is a very important tool that enhance implementation of policies in a more efficient and effective manner and has many applications to county governments. According to Dillinger (1988) municipalities that conducted tax-mapping operations had shown that their revenues remained stagnant because problems associated with collection administration and enforcement was not addressed. This study will focus on the influence of Information Communication Technology Systems and Property Rates Revenues Collection in Migori and Homa Bay County Governments.

2.4.4 Information Communication Technology Systems for Bus Park Rates and Revenue Collection:

In the late 1960s, the government withdrew the core revenue-generation source for Local Authorities, the Graduated Personal Tax; but it also assumed the authorities core service delivery functions, including the delivery of education and health care (Menon et al., 2008). Since then, Local Authorities only generated revenues through the limited sources, more or less; this formed the basis for the new constitution on devolution allowed county governments to generate revenues from. Despite their extensive service delivery burdens since the county governments are struggling to meet the demands of provision of public goods. Mostly county governments are unable to generate enough revenue to cover their respective budgets, resulting in accumulated debts. But the analysis of past studies showed that urbanisation was critical for strong own revenue generation, with Land Rates, Small Business Permits (SBP) and Motor Vehicle Parking Fees being dominant sources. For the exclusively urban Nairobi and Mombasa city counties, for example, property rates accounted for an average 29% of revenues, compared to 0% for Narok and Wajir counties. Thus, while Nairobi county's own revenues amounted to Kenya shillings 6.4 billion, those for Narok and Wajir counties amounted to Kshs 991 million and

Kshs 20 million respectively. The foregoing underscore the importance of county governments identifying an optimal set of own revenue sources, given their respective citizens' willingness and ability to pay, and the counties' respective capacities to collect such revenues efficiently without deterring growth and welfare. Therefore Migori and Homa Bay Counties are not an exception to this scenario.

E-payment has been designed to help individual customers and companies as well as the banks itself in eliminating or reducing some of the problems inherent in the settlement and payment process. Customers can pay their bills without having to actually move to the bank's premises (Wahab, 2012). They may also have access to their account information and even transfer money to other accounts in the comfort of their homes. According to Pariwat & Hataiseere (2004), for the achievement of effective and efficient retail payment systems, the following considerations that shape the choice of payment method for consumers and businesses should be taken into account; the convenience, reliability and security of the payment method, the service quality, involving such features as the speed with which payment are processed; the level and structure of fees charged by financial institutions; taste and demographic; and technological advances which have improve the speed, convenience and flexibility of different payment systems. E-payment is convenient, safe, and secures methods for payment of bills and other transactions by electronic means such as card, telephone, the Internet, Electronic Fund Transfer. Electronic payment gives consumers an alternative to paying bills and debts by cash, cheque and money order (Wahab, 2012)

Thus, the implementation of e-payment is paramount in ensuring optimal revenue collection. Various ICT based revenue collection applications are available for use in the modern world today. These are simply referred to as Electronic Payment (E- payment) system (Ndunda, Ngahu & Wanyoike, 2015), integrated into revenue collection. The E-payment system is accessible online through Point of Sale (PoS) terminal devices and physical agents (such mobile phones, debit cards, agents, mobile money). The E-payment is intended to help the companies using it to eliminating or reducing and minimizing corruption (some of the problems inherent in the settlement and payment process), by allowing customers to pay their bills without having to actually move to the firm premises. The customers have access to their account information and even transfer money to other accounts in the comfort of their homes (Wahab, 2012).

The e-payment system in Nairobi County is used for parking fees, single business permit, rent and land rates (Mueke, 2015). Revenue collection is very important for every county government as it enables the government to acquire assets which are not liable to debt and which the government uses to develop its economy. However, revenue collection in the developing economies in counties has not always been as effective as it should be (Ngotho & Kerongo, 2014). To eliminate or significantly reduce corruption, the e-payment project provides an alternative means of payment of county revenue. This study focuses on information communication technology on bus park rates and revenue collection in Migori and Homa Bay county governments.

The County Governments get their revenue from taxation, permit fees, cess, license fees, parking fees and other sources (Odd-Helge, 2006). When the County Governments fail to optimally collect requisite revenues, the public will negatively be affected by being denied vital services, a challenge that would drastically affect the devolution process (Fjeldstad & Heggstad, 2012). On the contrary, a sound revenue system for devolved governments sets the pace for the success of fiscal decentralization (Bird, 2010), since it is the avenue for administrative accountability by empowering communities. According to Muema *et al.* (2014), modern e-payment services, such as smart parking service, provide convenience in revenue collection through use of devices such as mobile devices in the parking industry, highly improve revenue collection performance and gain a competitive edge (British Parking Association [BPA], 2012; Wang & Wenbo, 2013).

However, there is a rising challenge as far as adoption of e-payment adoption by County Governments in Kenya is concerned on the bus parking terminus and respective revenue collection points. For instance, in the Nairobi County Government, the e-payment was introduced to enhance its revenue collection and to check theft of county revenue by corrupt officials. Although the e-payment revenue from business licenses have grown 60 percent in Nairobi (Mueke, 2015), the system is yet to bear fruit because some officials are sabotaging it. It is not clear on the extent to which information communication technology particularly bus parking rates system influence level of revenue collection in Migori and Homa Bay County governments in Kenya.

2.5 Theoretical Literature:

This study is directed by the following theories: The Expediency Theory of Taxation, Optimal Theory of Taxation, and Technology Acceptance Model (TAM) Theory, Unified Theory of Acceptance and Use of Technology (UTAUT) and Revenue Diversification Theory (RDT).

2.5.1 The Expediency Theory of Taxation:

The expediency theory states that every tax proposal must pass the test of practicability. In other words, it must be the only consideration when the authorities are choosing a tax proposal. Economic and social objectives of the state should be treated as irrelevant. This proposition has a truth in it, since it is useless to have a tax which cannot be levied and collected efficiently. There are pressures from economic, social and political groups. Every group tries to protect and promote its own interests and authorities are often forced to reshape tax structure to accommodate these pressures (Bhartia, 2009). In addition, the administrative set up may not be efficient to collect the tax at a reasonable cost of collection. Taxation provides a powerful set of policy tools to the authorities and should be effectively used for remedying economic and social ills of the society such as income inequalities, regional disparities, unemployment, cyclical fluctuations and so on (Bhartia, 2009). The expediency is relevant to the current study in that, it seeks to explain how practicability of tax proposals could influence revenue collections by County Governments.

2.5.2 Optimal Theory of Taxation:

The theory of optimal taxation can be seen as a recipe for minimizing the costs of taxation. The costs already noted are the efficiency costs of a distorted tax system. But the more direct costs of administration and compliance play little or no role in the analyses, and the theories of tax evasion that will be discussed below alert us to some of the important aspects of these costs (Fowler, 2002). So far, the potential gains from using the insights of the tax evasion literature in the study of optimal taxation have not been fully exploited, although for some aspects of taxation the evasion perspective is obviously highly relevant. This is true, at least to some extent, with respect to the degree of progressivity of the personal income tax, and even more so with respect to the interface between personal and company taxation and the degree of differentiation of the indirect tax system. The literature on tax evasion should be seen as a way to bring issues of tax administration into the focus of the theoretical literature on tax design (Ghura, 2006). The standard theory of optimal taxation posits that a tax system should be chosen to maximize a social welfare function subject to a set of constraints. The social welfare function is based on the utilities of individuals in the societies. In its most general analyses; this literature uses a social welfare function that is a nonlinear function of individual utilities. Nonlinearity allows for a social planner who prefers, for example, more equal distributions of utility (Graham, 2000). To reduce the problem facing the revenue collection, it is often assumed that everyone in society has the same preferences over, say, consumption and leisure. Sometimes this homogeneity assumption is taken one step further by assuming the economy is populated by completely identical individuals. It is important to choose the tax system that maximizes the representative consumer's welfare, knowing that the consumer will respond to whatever incentives the tax system provides (Hazel 2005).

2.5.3 Technology Acceptance Model (TAM) Theory:

The Technology Acceptance Model (TAM) for revenue collection system is an information systems theory that models how users come to accept and use a technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably: Perceived usefulness (PU). This was defined by Fred Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance". Perceived ease-of-use (PEOU) - Davis defined this as "the degree to which a person believes that using a particular system would be free from effort" (Davis 1989).

Venkatesh and Davis (2000) extended the original TAM model to explain perceived usefulness and usage intentions in terms of social influence which is subjective norms, voluntariness, image and cognitive instrumental processes like job relevance, output quality, result demonstrability, perceived ease of use. The Technology Acceptance Model (TAM) has been widely criticized, despite its frequent use, leading the original proposers to attempt to redefine it several times. Criticisms of TAM as a "theory" include its questionable heuristic value, limited explanatory and predictive power, triviality, and lack of any practical value, as for revenue system, its practical means. Taxation is an integral part of countries development policies, interwoven with numerous other areas, from good governance and formalizing the

economy, to spurring growth through, for example, promoting activities such as export activities system for revenue collections. (Chuttur 2009). Furthermore, the independent attempts by several researchers to expand TAM in order to adopt it to the constantly changing ICT and systems environments has led to a state of theoretical chaos and confusion" (Benbasat & Barki 2007). In general TAM focuses on the individual 'user' of a system, with the concept of 'perceived usefulness', with extension to bring in more and more factors to explain how a user 'perceives' 'usefulness', and ignores the essentially social processes of information system development and implementation, without question where more technology is actually better, and the social consequences of information system use. Both TAM and TAM2 account for only 40% of a technological system's use. Therefore in county governments the application of communication technology on revenue collection is inevitable despite its related constraints.

2.5.4 Unified Theory of Acceptance and Use of Technology (UTAUT):

Unified theory of acceptance and use of technology (UTAUT) is a technology acceptance model formulated by Venkatesh and others in "User acceptance of information technology: Toward a unified view". The UTAUT aims to explain user intentions to use a system, Revenue collection system and subsequent usage behaviour. The UTAUT theory is used to the context of exemplary acceptance and use of technology for revenue collection system in the county government. The theory holds on four key constructs: performance expectancy with the counties and sub-counties. Secondly; effort expectancy, by the auditing sector, thirdly; social influence by citizen and finally the facilitating conditions like the system tools, terms within the counties and sub-counties. The first three constructs are direct determinants of usage intention and behaviour and the fourth construct is a direct determinant of use behaviour. The UTAUT theory's usefulness on Revenue collection system is of particular interest to taxation as it may provide county government with performance expectancy. Certainty and consistency of tax treatment, the avoidance of double taxation, and efficient tax administration are all important consideration for business. Low levels of domestic resource mobilization are believed to be caused by low levels of income, demographic factors and the structure of financial markets, which are generally difficult to influence in the short to medium term. These principles in this theory are important to the performance of county governments.

2.5.5 Revenue Diversification Theory (RDT):

The study adopted a revenue diversification strategy that stems from the financial Modern Portfolio Theory, were applied as the second potential revenue strategy for county governments. According to Bernelot (2013), the revenue diversification theory focuses on whether a more diversified, well-balanced revenue portfolio increases financial stability for county by reducing revenue volatility. There is a positive effect of the strategies adopted in raising revenues on finances. Commercial and market-oriented revenue strategies have been found to have a positive effect on revenue collection performance. Bernelot (2013) suggest that revenue is derived from various sources and there must exist an equal balance between multiple incomes sources in the revenue portfolio of non-profit organizations usually lead to increased financial stability.

2.6 Conceptual framework:

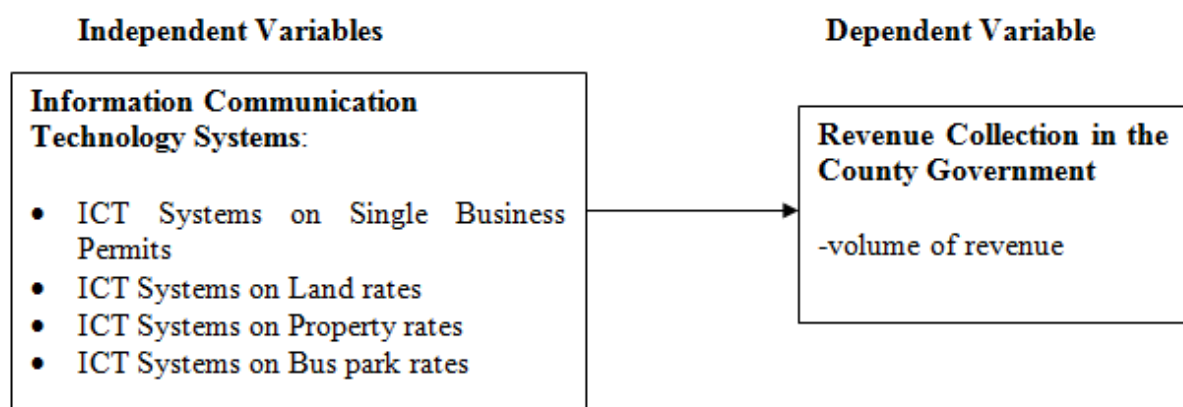


Figure 2.1 Conceptual framework depicting the relationship between Information Communication Technology Systems and revenue collection

The conceptual framework above depict that information communication technology systems for single business permits, land rates, property rates and bus park rates are explanatory variables influencing the outcome of the level of revenue collection by the county governments. The relationship of these variable is in one direction, meaning that only utilization of explanatory variables (ICT systems) have the chance to influence revenue collection in the county governments.

3. RESEARCH METHODOLOGY

This chapter explains the various research methods that shall be used to generate data in this study. This section discusses the research design, target population, sample and sampling procedure, instrumentation, data collection procedures and data analysis.

3.1 Research Design:

The study adopted a correlation study research design. According to Jackson 2009, a research design allows the researcher to describe the relationships that exist between two or more variables. Also, comparative studies allow the researcher to make predictions from one variable to another in more than one setting.

3.2 Study Area:

The study was conducted in Migori County and Homa Bay County Governments, which are located in the Southern part of the former Nyanza province. The area has a network of transport systems, business hubs, gold mines and fishing ports around Lake Victoria that serves as the key economic activities within the region.

3.3 Target Population:

The study target population was 864 consisting of 848 revenue clerks and 16 revenue officers from Migori and Homa Bay county governments who are employees from the devolved functions in the county governments (table 3.1). Burns and Grove (2003) describe a target population as the entire aggregation of respondents that meet the designated set of criteria. Thus, the target population defines those units for which the findings of the survey are meant to generalize.

Table 3.1 Target Population

County	Sub- County	Revenue Clerks	Revenue Officers	Total Respondents
Migori County	Rongo	76	1	77
	Kuria West	45	1	46
	Kuria East	38	1	39
	Awendo	80	1	81
	Uriri	34	1	35
	Suna East	44	1	45
	Suna West	48	1	49
	Nyatike	35	1	36
	Sub-Total	400	8	408
Homa Bay County	Rachuonyo	43	1	44
	Kasipul Kabondo	40	1	41
	Kabondo Kasipul	54	1	55
	Rangwe	38	1	39
	Homa Bay Town	94	1	95
	Ndhiwa	80	1	81
	Suba South	50	1	51
	Suba North	48	1	49
	Sub-Total	448	8	456
Grand Total		848	16	864

Source: Migori County Office, 2016; Homa bay County office, 2016

3.4 Sample Size and Sampling Techniques:

The study sample size was 86 respondents forming 10% of the target population. This is in agreement with Mugenda and Mugenda (2003) that at least 10% of the target population is enough and representative as a sample of the population. The revenue officers were selected using purposive sampling technique. Revenue clerks were selected proportionately from the sampling strata's of the sub-counties in Migori and Homa Bay county governments. Table 3.2 below indicates the number of respondents from each sub-county.

Table 3.2 sample Size

County	Sub- County	Revenue Clerks	Revenue Officers	Total Respondents	Sample Size
Migori County	Rongo	76	1	77	8
	Kuria West	45	1	46	4
	Kuria East	38	1	39	4
	Awendo	80	1	81	8
	Uriri	34	1	35	3
	Suna East	44	1	45	4
	Suna West	48	1	49	5
	Nyatike	35	1	36	4
	Sub-Total		400	8	408
Homa Bay County	Rachuonyo	43	1	44	4
	Kasipul Kabondo	40	1	41	4
	Kabondo Kasipul	54	1	55	6
	Rangwe	38	1	39	4
	Homa Bay Town	94	1	95	10
	Ndhiwa	80	1	81	8
	Suba South	50	1	51	5
	Suba North	48	1	49	5
	Sub-Total		448	8	456
Grand Total		848	16	864	86

Source: Migori County Office, 2016; Homa bay County office, 2016

3.5 Research Instruments:

The study used both primary and secondary data. Primary data was collected using both structured and semi - structured questionnaires which were distributed to all senior county revenue officers and revenue clerks to solicit their views concerning the influence of ICT on revenue collection. Document analysis guide was used to collect data from Annual published reports on devolution and county government and other relevant literature including journals, audit reports by the controller of budget and auditor general and records available provided secondary data.

3.5.1 Data Collection Procedure:

The researcher obtained a letter of approval from Jaramogi Oginga Odinga University post Graduate school and a research ethical permit. Primary data was collected through the administration of questionnaires to respondents. Two research assistants were engaged to mainly make follow-up of the administered questionnaires. The entry point to the county was mainly through both the human resource and finance departments. Document analysis guide was used to collect secondary data from Annual published reports on devolution and county government and other relevant literature including journals, audit reports by the controller of budget and auditor general.

3.5.2 Validity and Reliability of the Research Instruments:

3.5.2.1 Validity of the Research Instruments:

Mugged and Buganda, (1999) defines validity as the extent to which a research instrument measures what it is designed to measure. According to Gall, Borg & Gall, (1996) validity of an instrument is improved through expert judgments. The instruments were validated through discussions with the two supervisors. The focus was on face, construct and content validity. To ensure content validity, the researcher ensured that questionnaire were distributed to a representative sample

of the population of subject matter of interest by ensuring that the elements constitute adequate coverage of the problem. In attempting to evaluate construct validity, the researcher considered both the theory and the measuring instrument being used by looking into how ICT and its influence on revenue collection as operationally defined corresponded to an empirically grounded theory.

3.5.2.2 Reliability of the Research Instruments:

Reliability is the ability of the research instrument to measure and produce the same result each time it is used under the same conditions with the same subjects. Reliability was tested by use of twenty four questionnaires which was piloted with randomly selected county employees drawn from Kisumu County government. This was meant to avoid response bias in case they are to complete the same questionnaire twice. The rule of the thumb suggests that 5% to 10% of the target sample should constitute the pilot test. The pilot test sample was within the recommendation. The twenty four questionnaires were coded and input into Statistical Package for Social Sciences [SPSS] version 22 for running the Cronbach reliability test. The results of the reliability test were compared with the standard Cronbach alpha coefficient of 0.7. The determined value was 0.86 which is greater than 0.7 indicating that the research instrument was reliable.

3.6 Data Processing and Analysis:

Quantitative data analysis was done using descriptive statistics and inferential statistics. Descriptive statistics involved the use of percentages and means, while inferential statistics involved determination of coefficient of multiple correlations and regression equations to establish the relationship between the use of information communication technology and the revenue collection in Migori and Homa Bay County governments.

$$RC = f(USBPR, USLR, USPR, USBPR) \dots\dots\dots (3.1)$$

$$RC = \beta_0 + \beta_1 USBPR + \beta_2 USLR + \beta_3 USPR + \beta_4 USBPR + \mu \dots\dots\dots (3.2)$$

Where;

RC- Level of Revenue Collection

USBPR- Utilization of System for Single Business Permits in Revenue collection

USLR- Utilization of System for Land Rates in Revenue collection

USPR – Utilization of System for Property rates in Revenue collection

USBPR- Utilization of System for Bus Park in Revenue collection

$\beta_0, \beta_1, \beta_2, \beta_3,$ and β_4 - are regression equation coefficients

μ - Error (disturbance term)

4. RESULTS AND DISCUSSION

4.0 Response Rate:

The study response rate of the respondents in this study was not 100%; out of the 86 questionnaires given to the respondents to react to the research issues in this study only 82 questionnaires were returned and complete. Therefore 82 out of 86 questionnaires it indicated that the response rate was 95.3%. This percentage was representative as expressed by other researchers (Murphy, 2010)

4.1 General Information of the Respondents:

The study established the information of the respondents relating to gender and level of education in the counties under this study.

4.1.1 Gender of the Respondents:

The study established the gender of the respondents in this study. The information was recorded as in table 4.1 below

Table 4.1 Gender of the Respondents

County	Gender	Frequency	Percentage
Migori	Male	25	30.5%
	Female	13	15.9%
	Total	38	46.3%
Homa Bay	Male	21	25.6%
	Female	23	28%
	Total	44	53.7%
Grand Total		82	100%

The results in table 4.1 indicate that in Migori County male gender formed 30.5% of the total respondents in this study while in Homa Bay County the male gender was 25.6%. For the female gender in Homa Bay County they formed 28% while in Migori County they formed 15.9% of the total respondents in this study. These results indicate gender imbalance in the county governments.

4.1.2 Level of Education of the Respondents:

The study established the level of education of the respondents. The information was presented in the table 4.2 below

Table 4.2 Level of Education of the Respondents

Level of Education	Migori County		Homa Bay County		Aggregate Freq.	Aggregate %
	Freq.	%	Freq.	%		
O-Level	9	10.97%	15	18.3%	24	29.27%
Certificate	11	13.4%	14	17.1%	25	30.5%
Diploma	8	9.8%	8	9.8%	16	19.6%
Degree	6	7.3%	3	3.7%	9	11%
Post graduate	4	4.87%	4	4.87%	8	9.74%
Total	38	46.3%	44	53.7%	82	100%

The results presented in table 4.2 indicate that 30.5% (25) of the total respondents in this study have certificate level of education of which the majority were from Homa Bay county at 17.1%; secondary level of education formed 29.27% (24) of the total respondents of which 18.3% were from Homa bay county. The diploma level of education formed 19.6% of the total respondents and both counties had same proportion of respondents at 9.8%. The degree level of education formed 11% of the total respondents in this study of which Migori County had 7.3% of the respondents who reacted to the research instrument in this study. For postgraduate level of education, the counties had same percentage proportion at 4.87% of the total respondents.

4.2 Utilization of Information Communication Technology on Revenue Collection:

The study established the application of the information communication technology by the county governments in revenue collection. The response rate from the field was presented as in table 4.3 below

Table 4.3 Utilization of Information Communication Technology on Revenue Collection

Application of ICT systems on Revenue Collection	Migori County		Homa Bay County		Aggregate Freq.	Aggregate %
	Yes Response		Yes Response			
	Freq.	%	Freq.	%		
ICT System for Single Business Permits Revenue	31	37.8%	29	35.3%	60	73.1%
ICT System for Land rates Revenue	25	30.4%	19	23.2%	44	53.6%
ICT System for Property Rates Revenue	27	32.9%	21	25.6%	48	58.5%
ICT System for Bus Park Revenue	34	41.5%	18	21.95%	52	63.45%

Table 4.3 results show the level of utilization of information communication technology systems in the counties relating to revenue collection. The information indicate that the system for single business permits on revenue collection

utilization in Migori county is high as indicated by 37.8% of the total respondents when compared with Homa bay county which is rated at 35.3% by the respondents in this study. These results indicate that Migori County government is a head in terms of use of systems for single business permits for revenue collection. Aggregately 73.1% of the total respondents in the two counties concurred on the utilization of this system on revenue collection.

The system for land rates revenue was rated by the respondents at 30.4% for Migori County and 23.6% for Homa Bay County on revenue collection; for this system again Migori County is rated better in terms of its use on revenue collection. Aggregately 53.6% of the respondents expressed that the systems for land rates revenue was utilized for revenue collection.

The system for property rates revenue was rated at 32.9% for Migori County while in Homa Bay County it was rated at 25.6% on its use for revenue collection in the county. This system was rated by the respondents at 58.5% aggregately for its utilization in revenue collection.

The system for bus park revenue was rated by 41.5% of the respondents for its utilization in Migori County while in Homa Bay County it was rated at 21.95%. Aggregately for two counties the system was rated by 63.45% of the total respondents as that system utilized for revenue collection in the county governments of Migori and Homa Bay.

4.3 Information Communication Systems and Volume of Revenue Collection:

The study established the influence of the information communication technology system components on the volume of revenue collected by the county governments of Migori and Homa Bay. The respondents rated the information on a five point Likert scale on how the systems adopted has influenced the volume of revenue collected by the county government (5.0 greater extent, 4.0 great extent, moderate extent, 2.0 less extent and 1.0 no extent). The information collected from the field was presented in table 4.4 below

Table 4.4 Information Communication Systems and Revenue Collection

ICT System Component	Greater Extent (5)	Great Extent (4)	Moderate Extent (3)	Less Extent (2)	No Extent (1)	f_i	Mean weight
USBPR	12	34	20	11	5	82	3.451
USPRR	12	26	24	15	5	82	3.305
USLRR	5	11	38	19	9	82	2.805
USSBPR	30	26	13	10	3	82	3.854

The results in table 4.4 indicate that system for single business permits (SSBPR) influence revenue collection to moderate extent with 3.854 strength, the system for bus park revenue influenced revenue collection to moderate extent at 3.451 strength. The system for property rates revenue was third as it was rated at 3.305 strength in influencing revenue collection in the county governments. The system for land rates revenue was ranked least in influencing revenue collection at less extent with a mean weight of 2.805 strength. This result indicate that the utilization of land rates system it increases revenue collection to less extent in the county governments.

The study established comparatively the influence of these ICT systems on Revenue collection in Migori and Homa bay Counties on their influence on the Volume of revenue collection. The results are presented as in table 4.5 below

Table 4.5 Comparison of Information Communication Systems and Volume of Revenue Collection

ICT System Components in County Governments		Greater Extent (5)	Great Extent (4)	Moderate Extent (3)	Less Extent (2)	No Extent (1)	f_i	Mean weight
Migori County	USBPR	4	20	11	1	2	38	3.605
	USPRR	8	7	11	10	2	38	3.237
	USLRR	2	5	20	9	2	38	2.895
	USSBPR	23	6	4	3	2	38	4.184
Homa Bay County	USBPR	4	7	9	14	10	44	2.568
	USPRR	4	19	13	5	3	44	3.455
	USLRR	3	6	18	10	7	44	2.727
	USSBPR	17	16	7	3	1	44	4.023

Table 4.5 shows that system for bus park revenue has a higher mean strength of 3.605 magnitude strength in influencing revenue collection in Migori County compared with Homa Bay County at 2.568 magnitude in relation to the extent of this system influences revenue collection when both counties are compared. For the property rates revenue system (SPRR), Migori county mean weight is at 3.237 magnitude while Homa bay is at 3.455 magnitude strength showing that for Homa Bay county the system use will help collect more revenue as indicated by the respondents in this study. For the land rates revenue system, Migori County rated at 2.895 magnitude strength in relation to revenue collection while Homa Bay County is rated at 2.727 magnitude strength in influencing county revenue collection. Finally the system for single business permits revenue, Migori County has 4.184 strength when compared with Homa bay which has 4.023 strength. Aggregately Migori County has a higher magnitude of 3.480 strength on the application of ICT systems in improving revenue collection compared with Homa Bay's aggregate of 3.193 magnitude of the systems on revenue collection.

This results concurs with Abor (2004) study that revealed that to achieve the county financial objective and simplify payments the electronic revenue collection systems must be put in place by the county; further these results are in agreement with Balunywa (2014) that electronic revenue collection systems are meant to facilitate elimination of losses of revenue through corruption and simplify payments. Gupta (2007) was of the view that countries need to rely substantially on domestic revenue mobilization. Domestic revenue mobilizations of developing countries have been dependent primarily on various forms of taxation. Gberegbe (2007) states that they need to expand the tax base and strengthening revenue administration. Moreover, the revenue collection administrations are often inefficient and large amounts of revenues collected are inappropriately managed. As a result, many African towns and cities face a governance crisis and poor service delivery capability. Consequently, the restructuring of governmental functions and finances between the national and county government levels have entered the core of the development debate; this called for the adoption of various ICT systems to improve on revenue collection.

4.4 Correlation Analysis Results for ICT systems application and Revenue Collection

The study results for correlation analysis of the variables is presented in table 4.6 below

Table 4.6 Correlation Analysis Results

Model		RC	USBPR	USLRR	USPRR	USBPR
Pearson Correlation	RC	1.000				
	USBPR	.507	1.000			
	USLRR	.499	.528	1.000		
	USPRR	.445	.514	.475	1.000	
	USBPR	.450	.616	.597	.479	1.000

(Sig. 0.000; n =82)

Where SSBPR system for single business permits Revenue, SLRR system for Land rates Revenue; SPRR system for Property Rates Revenue and SBPR system for Bus Park Revenue.

The results in table 4.6 show that the explanatory variables are correlated and all their correlation coefficients are showing a weak positive correlation since the values are not greater than 0.8 which is near 1.0 correlation coefficient. This correlations show weak multicollinearity effect on the variables in this study. Therefore severity of this is independent variables interaction is ignored in this study.

4.5 Diagnostic Tests:

The study further established the following diagnostic tests: collinearity and normality tests.

4.5.1 Collinearity Tests:

The effect of Multicollinearity was subjected to further analysis to assess its severity using the tolerance and Variance Inflation Factor (VIF).

Table 4.7 Collinearity Tests

Collinearity Statistics			
1	Model Variables	Tolerance	VIF
	(Constant)		
	USBPR	.083	8.994
	USLRR	.124	8.082
	USPRR	.152	6.569
	USBPR	.138	7.222

The results in table 4.7 on collinearity diagnostics indicated explanatory variables multicollinearity effect was not severe as their values were less than 10.0, this was in agreement with other scholars like Murphy (2010).

4.5.2 Normality Tests:

The variables were subjected to normality tests. The results were presented as in table 4.8 below

Table 4.8 Normality Tests

	N	Skewness		Kurtosis		Jarque–Bera Statistic
		Statistic	Std. Error	Statistic	Std. Error	
USBPR	82	-.550	.266	-.773	.526	52.770
USLRR	82	-.259	.266	-.629	.526	45.928
USPRR	82	-1.008	.266	-.064	.526	45.920
USBPR	82	-1.392	.266	1.800	.526	105.124
RC	82	-.681	.266	-.875	.526	57.629
Valid N	82					

The normality test was based on Jarque–Bera Statistic tests. If the computed value of the Jarque–Bera Statistic is sufficiently low it indicates that explanatory variables residuals are not normally distributed but if the values are reasonably high the normality assumption is accepted that the residuals of explanatory variables are normally distributed. Therefore the results in table 4.8 indicate that Jarque–Bera Statistics are sufficiently high and within the range suggesting normal distribution; this concurs with Gujarati (2006) who suggested that when Jarque–Bera Statistics are between 40 – 110 it indicates normal distribution.

4.6 Regression Analysis:

The regression results for explanatory variables and revenue collection is presented in table 4.9 below

Table 4.9 Coefficients for USBPR, USLRR, USPRR, USBPR and Revenue Collection

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.176	.113		-1.565	.122
	USBPR	.069	.068	.114	1.014	.004
	USLRR	.220	.060	.337	3.647	.000
	USPRR	.476	.058	.688	8.272	.000
	USBPR	.516	.062	.762	-1.856	.003

a. Dependent Variable: Revenue Collection

When the Unstandardized coefficients are substituted in the regression equation the model changes to:

$$RC = -0.176 + 0.069USBPR + 0.220 USLRR + 0.476USPRR + 0.516 USBPR \dots \dots \dots (4.1)$$

The results reveal that without any system for revenue collection net revenue collection is negative; this result indicate that information communication technology systems are a necessity for county governments to improve on revenue collection. Application of system for single business permits causes an increase in revenue collection by 0.069 units and

the effect is statistically significant ($P = 0.004 < 0.005$); while the application of system for land rates revenue causes an increase in revenue collection by 0.220 and application of system for property rates revenue causes an increase in revenue collection by 0.476 units change these two systems also have statistically significant contribution to revenue collection in County governments (p values < 0.005). The use of system for bus park revenue collection contributes to revenue collection in county governments. The results reveal that system for bus park revenue effect on revenue collection is statistically significant to county revenue collection ($p = 0.003 < 0.005$); the standardized beta ($B = 0.762$) show that use of this system contributes up to 76.2% increase in revenue collection in the County Governments.

Table 4.10 Model Summary for Independent Variables and Dependent Variable

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.959 ^a	.919	.915	.217	.919	217.905	4	77	.000

a. Predictors: (Constant), System for Bus Park Revenue, System for Property Rates Revenue, System for Land Rates Revenue, System for Single Business Permits Revenue

The results in table 4.10 show that a strong and almost a perfect association exist between explanatory variables (ICT systems adopted in County Governments) and the revenue collection as a dependent variable ($R = 0.959^a$); also the application of the information communication technology systems explain up to 91.9% variation in revenue collection efficiency in the county governments ($R^2 = 0.919$). The results further show that the model adopted in this study can be relied upon on improving revenue collection in the counties up to 91.5% (adjusted $R^2 = 0.915$). Therefore it is prudent to use these ICT systems as indicated in the model to better revenue collection in the county governments in Kenya. The bigger R^2 indicates smaller standard error between the variables in this study. Larger sample sizes tend to help decrease standard error; this reflects that larger samples produce more precise estimates of regression. The tolerance close to 1.0 means there is little multicollinearity whereas a value close to zero (0) suggests that multicollinearity is a threat. In this study explanatory variables had no multicollinearity effect as their tolerance values and VIF values were within the range of no multicollinearity threat.

Table 4.11 ANOVA^a Results for Independent variables and Dependent Variable

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	41.112	4	10.278	217.905	.000 ^b
	Residual	3.632	77	.047		
	Total	44.744	81			

a. Dependent Variable: Revenue Collection

b. Predictors: (Constant), System for Bus Park Revenue, System for Property Rates Revenue, System for Land Rates Revenue, System for Single Business Permits Revenue

The revenue collection model, the results in table 4.11 show that $F(4,77) = 217.905$ which is significant at $p = 0.000$, is a likely indication that the revenue collection model fits well the research data and it explains well the deviations in the revenue collection upon the adoption of various information communication technology systems in the county governments.

4.7.1 Coefficients for ICT systems and Revenue Collection in Migori County:

Table 4.12 Coefficients for USBPR, USLRR, USPRR, USBPR and Revenue Collection

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.054	.073		-1.134	.108
	USBPR	.079	.025	.259	2.017	.000
	USLRR	.042	.048	.435	1.658	.000
	USPRR	.378	.051	.884	6.541	.000
	USBPR	.658	.042	.621	1.731	.000

a. Dependent Variable: Revenue Collection

Table 4.12 indicate that all the ICT systems when utilized in Migori County their contribution to revenue collection is statistically significant ($P < 0.005$). When the unstandardized beta coefficients are substituted in the model equation changes to:

$$RC = -0.054 + 0.079USBPR + 0.042 USLRR + 0.378USPRR + 0.658 USBPR \dots \dots \dots (4.2)$$

The results indicate that USBPR systems utilization in Migori county causes 0.658 unit increase in revenue collection in the county followed by USPRR system at 0.378 unit increase in revenue collection. Without the utilization of ICT in Migori county Revenue collection will be negative at -0.054 units' deficit in revenue collection.

Table 4.13 Model Summary for Independent Variables and Dependent Variable

Model	R	R Square	Adjusted Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.758 ^a	.575	.515	.214	.575	319.405	4	33	.000

a. Predictors: (Constant), System for Bus Park Revenue, System for Property Rates Revenue, System for Land Rates Revenue, System for Single Business Permits Revenue

The results in table 4.13 show that a strong and positive association exist between explanatory variables and the dependent variable ($R = 0.758^a$) and the application of ICT systems in Migori county explains up to 57.5% variation in revenue collection efficiency in the county government ($R^2 = .575$); indicating that 42.5% of the variation in revenue collection could be caused by other factors not included in the study.

4.7.2 Coefficients for ICT Systems and Revenue Collection in Homa Bay County:

Table 4.14 Coefficients for USBPR, USLRR, USPRR, USBPR and Revenue Collection

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.067	.044		-1.386	.073
	USBPR	.058	.018	.591	2.017	.000
	USLRR	.035	.038	.352	1.954	.000
	USPRR	.271	.040	.64	4.340	.001
	USBPR	.456	.034	.721	1.221	.002

b. Dependent Variable: Revenue Collection

Table 4.14 indicate that all the ICT systems when utilized in Homa Bay County their contribution to revenue collection is statistically significant (all their values are $p < 0.005$). Therefore when the unstandardized beta coefficients are substituted in the model the equation changes to:

$$RC = -0.067 + 0.058USBPR + 0.035 USLRR + 0.271USPRR + 0.458 USBPR \dots \dots \dots (4.3)$$

The results indicate that USBPR systems utilization in Homa Bay County causes 0.456 unit increase in revenue collection in the county followed by USPRR system at 0.271 unit increase in revenue collection. Without the utilization of ICT in this county Revenue collection will be negative at -0.067 units' deficit in revenue collection.

Table 4.15 Model Summary for Independent Variables and Dependent Variable

Model	R	R Square	Adjusted Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.679 ^a	.461	.454	.206	.461	219.28	4	39	.000

b. Predictors: (Constant), System for Bus Park Revenue, System for Property Rates Revenue, System for Land Rates Revenue, System for Single Business Permits Revenue

The results in table 4.15 show that a strong and positive association exist between explanatory variables and the dependent variable ($R = 0.679^a$) and the application of ICT systems in Homa Bay county explains up to 46.1% variation

in revenue collection efficiency in the county government ($R^2 = .461$); indicating that 53.9% of the variation in revenue collection could be caused by other factors not included in the study.

4.8 Actual and Projected Revenue with Utilization of ICT in the County Governments:

The study established the total target revenue collected matched with the actual revenue collected for the period with the utilization of ICT systems in the county governments of Migori and Homa Bay.

Table 4.16 Actual and Projected Revenue with Utilization of ICT in Migori County

Month	Jan	Feb	March	April	May	June	July	Aug.	Sept.	Oct.
Actual revenue in Millions	6,241	7,211	8,247	8,532	9,021	11,670	11,920	15,193	14,947	8,901
Projected revenue in Millions	6,350	7,760	8,950	8,000	8,980	10,140	10,800	11,580	12,970	13,020

Source: Migori County (2016)

Table 4.16 above indicates that actual revenue trend increased from January to August but in September and October the actual revenue collection decreased. This indicates that there is a potential in revenue collection in the County Government when the revenue collection systems are utilized. Immediately the ICT system was installed in Migori County there exists an increased trend in revenue collection. The line graph below show the trend of actual and projected revenues.

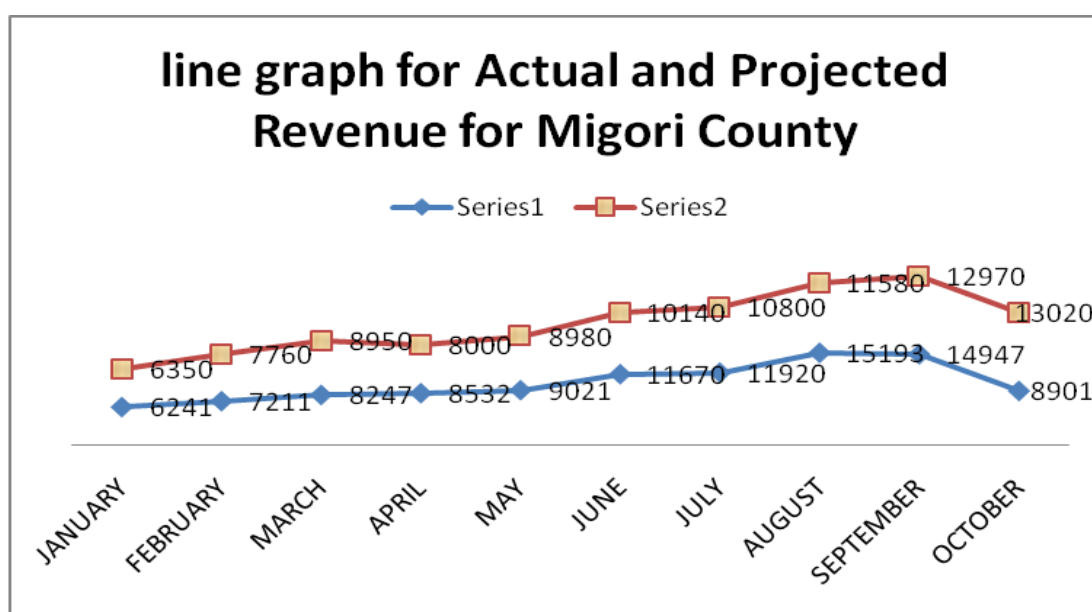


Figure 4.1 Line graph for Actual and projected Revenue for Migori County

Key:

Series 1- Actual Revenue

Series 2 – Projected Revenue

Table 4.17 Actual and Projected Revenue with Utilization of ICT in Homa Bay County

Month	Jan	Feb	March	April	May	June	July	Aug.	Sept.	Oct.
Actual revenue in Millions	86.4	72	63	47.2	56.4	79.8	113	152	98	78.8
Projected revenue in Millions	149	156	158	158	165	210	272	289	263	276

Source: Homa Bay County (2016)

Table 4.17 indicates the actual revenue collected and projected revenue for Homa Bay County. The level of utilization of ICT systems in Homa Bay is not advanced as compared to the utilization of ICT systems which are advanced. The line graph below depicts the relationship between actual and projected revenue collection in Homa Bay County.

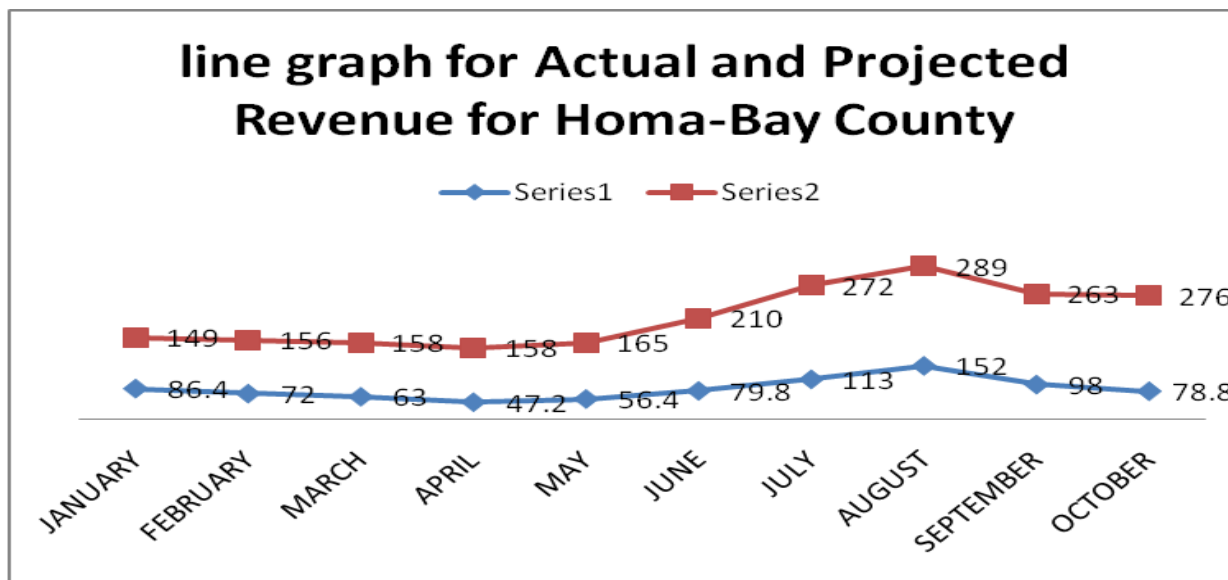


Fig.4.2 Line graph for Actual and Projected Revenues for Homa Bay County

Key:

Series 1- Actual Revenue

Series 2 – Projected Revenue

Therefore when actual and projected revenues in the two counties Migori and Homa Bay compared; in Homa Bay County a greater disparity is observed throughout the months of analysis between actual and projected revenues for the period starting January to October. Therefore utilization of ICT systems influences Revenue collection in county governments in Kenya.

5. SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings:

The study established that in Migori County dominated on male gender at 30.5% of the total respondents in while the female gender dominated in Homa Bay County at 28% of the total respondents in this study. These results indicate gender imbalance in the county governments. In terms of the education level the study established that 30.5% (25) aggregate of the total respondents in this study had certificate level of education of which the majority were from Homa Bay county at 17.1%; secondary level of education was second which on aggregate formed 29.27% (24) of the total respondents of which 18.3% were again from Homa bay county. The diploma level of education formed 19.6% of the total respondents and both counties had same proportion of respondents at 9.8%. The degree level of education formed 11% of the total respondents in this study of which Migori County had 7.3% of the total respondents. For postgraduate level of education, the counties had same percentage proportion at 4.87% of the total respondents. Therefore education disparity was observed in secondary and certificate levels of education in the county governments.

5.1.1 Influence of Information Communication Technology for single business permits systems on the revenue collection:

The first objective was to establish the influence of single business permits systems on the revenue collection. The findings relating to this single business permits system were: the study established the level of utilization of information communication technology systems in the counties relating to revenue collection. The system for single business permits on revenue collection utilization in Migori County was rated high as indicated by 37.8% of the total respondents when

compared with Homa Bay County which was rated at 35.3% by the respondents in this study. These results indicate that Migori County government is a head in terms of use of systems for single business permits for revenue collection. Aggregately 73.1% of the total respondents in the two counties concurred on the utilization of this system on revenue collection. Application of ICT system for single business permits causes an increase in revenue collection by 0.069 and the influence is statistically significant ($P = 0.004 < 0.05$); on a five point Likert scale on how the systems influenced the volume of revenue collected by the county government; the results showed that system for single business permits (SSBPR) influence revenue collection to moderate extent with 3.854 strength.

5.1.2 Influence of Information Communication Technology system for land rates on the revenue collection:

The second objective focused on influence of information communication technology system for land rates on revenue collection in Migori and Homa Bay County Governments. The findings show that the system for land rates revenue was rated by the respondents at 30.4% for Migori County and 23.6% for Homa Bay County on revenue collection; for this system again Migori County is rated better in terms of its use on revenue collection. Aggregately 53.6% of the respondents expressed that the systems for land rates revenue was utilized for revenue collection. The application of system for land rates revenue causes an increase in revenue collection by 0.220 and this influence on revenue collection is statistically significant.

5.1.3 Influence of Information Communication Technology system for property rates on the revenue collection:

The third objective was to establish the influence of information communication technology system for property rates on revenue collection in Migori and Homa Bay County Governments, Kenya. The findings showed that application of system for property rates revenue causes an increase in revenue collection by 0.476 units change and it has a statistically significant contribution to revenue collection in County governments (p values < 0.005).

5.1.4 Influence of Information Communication Technology system for Bus Park rates on the revenue collection:

The fourth objective the influence of information communication technology system for Bus Park rates on revenue collection in Migori and Homa Bay County Governments, Kenya. The findings indicate that the results reveal that system for bus park revenue effect on revenue collection is statistically significant to county revenue collection ($p = 0.003 < 0.005$); the standardized beta ($B = 0.762$) show that use of this system contributes up to 76.2% increase in revenue collection in the County Governments

5.1.5 Information Communication Technology Systems and Revenue Collection:

The regression results that a strong and almost a perfect association exist between explanatory variables (ICT systems adopted in County Governments) and the revenue collection as a dependent variable ($R = 0.959^a$); also the application of the information communication technology systems explain up to 91.9% variation in revenue collection efficiency in the county governments ($R^2 = 0.919$). The results further show that the model adopted in this study can be relied upon on improving revenue collection in the counties up to 91.5% (adjusted $R^2 = 0.915$). Therefore it is prudent to use these ICT systems as indicated in the model to better revenue collection in the county governments in Kenya. The revenue collection model, the results show that $F(4,77) = 217.905$ which is significant at $p = 0.000$, is an indication that the revenue collection model fits well the research data and it explains well the deviations in the revenue collection upon the adoption of various information communication technology systems in the county governments.

5.2 Conclusion:

The findings on the influence of single business permit systems on the revenue collection; the study concludes that ICT systems for single business permits positively influence revenue collection in the county governments. Therefore their use is of importance to government in terms revenue collection efficiency.

The findings on objective two show that the application of ICT system for land rates revenue causes an increase in revenue collection and this influence is statistically significant. The study concludes that the system positively influences revenue collection in the County Governments.

The findings on objective three showed that application of system for property rates causes an increase in revenue collection. Therefore ICT system for property rates has a statistically significant contribution to revenue collection in County governments. Its use should be emphasised.

The findings of the fourth objective indicate that ICT system for bus park rates has positive effect on revenue collection; this system contributes to an increase in revenue collection in the County Governments

From the findings it can be concluded that a strong and almost a perfect association exist between ICT systems adopted in County Governments and the revenue collection. The application of these systems improves revenue collection efficiency in the county governments. Therefore it is prudent for all county governments to use these ICT systems as indicated in the model to better revenue collection in the county governments in Kenya.

5.3 Recommendations of the Study:

Based on the findings and conclusion on the information communication systems adopted by county governments the study recommends that adoption of system for bus park revenue collection, property rates revenue, and land rates system to improve on revenue collection efficiency in county governments in Kenya. The study recommends that Homa Bay County should invest in ICT systems and utilize them to increase their revenue collection efficiency. There is need for increased use of ICT systems for Revenue collection in all the Government sectors that are tasked with revenue collection in order to improve on the volume collected.

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