Electronic Revenue Collection and its Effect on Siaya County Government's Financial Performance

Percila Achien'g Onduru[1]; David Oima[2]

[2](Professor)
[1;2]School of Business Administration, and Department of Finance and Accounting,
Maseno University, Kisumu, Kenya

Abstract: Revenue collection among the devolved units has drawn interest from around the world. Some developing African nations, like Ghana, introduced devolved governments with the collection of their own revenue as part of their functions. East African nations, such as Rwanda, saw the establishment of local governments and own-source revenue collection as an urgent and necessary corrective action in response to their economic challenges. County Governments in Kenya were formed in 2013 with Article 209 of the Constitution of Kenya (2010) in respect of the collection of own-source revenue by the county governments. The County Government of Siaya utilized manual revenue collection systems until 2015 when the POS gadgets, ECR, and Mobile payment system were introduced in the 2015/2016 F/Y. County Fiscal Strategy Papers show that during the 2013/2014, 2014/2015, and 2015/2016 F/Y, the County Government recorded negative deviations of -34, -52% and -41% in Own Source Revenue, respectively. In 2017/2018, 2018/2019, 2019/2020, and 2020/2021, the County Government of Siaya also had negative deviations in Own Source Revenue of -53%, -42%, -56%, and -19% respectively. F/Y 2021/2022 recorded a positive deviation of 0.21%. An inadequate and inefficient electronic revenue collection system has been cited as the major contributor to the continued underperformance in the collection of revenue. Despite the county having a partially automated system of revenue collection, it must be noted that the revenue collected has remained significantly low over the past five years. This means that the systems may be inadequately utilized, thus the need to assess with a view to increasing the revenue collection and financial performance. The results of the research on the impact of the utilization of automated revenue collection on the financial performance were inconsistent. It is in this context that the objective of the research was to determine the impact of electronic revenue collection on the financial performance of the County Government of Siaya. To be specific, the research aimed at identifying the impact of the Point of Sale machine on the financial performance of the County Government of Siaya, the impact of the Electronic Cash Register system on the financial performance of the County Government of Siaya, and the impact of the Mobile Payment System on the financial performance of the County Government of Siaya. The study was backed by two theories, namely: Expediency Theory of Taxation and Technology Acceptance Model Theory. This study utilized the correlation research design and was directed at 98 staff serving the department of finance in County Government of Siaya. A sample of 79 respondents was selected using the formula of Taro Yamane. Primary data was employed in the study and this was collected through a questionnaire. The analysis of a pilot study of eight (8) respondents conducted in the Siaya County indicated that there was an alpha of 0.81, which exceeded the Cronbach alpha coefficient of 0.7; hence, the instruments were reliable. The 8 respondents were not included in the sample size; therefore, 71 respondents were utilized to conduct the study. Expert judgment was used to define validity. The data was analyzed with multiple regression and Pearson product-moment correlation in determining the relationship between the independent and dependent variable. The findings showed that the use of point of sale machines had the strongest positive impact on financial performance (β=.886, p=.000), followed by the use of electronic cash registers with a beta value of β=.197, p=.000 then the use of mobile payment systems (β=.093, p=.000). The findings further revealed that there existed a significant and strong positive correlation between the use of point of sale machines (r=.995, p=.000), implying that point of sale machines significantly affected financial performance. The electronic cash registers had (r=.899, p=.000), implying that electronic cash registers significantly affected financial performance. The mobile payment systems recorded (r=.861, p=.000) and financial performance, implying that mobile payment systems significantly affected financial performance. The research established that the implementation of electronic revenue collection positively and significantly affects the financial performance of the County Government of Siaya.

Keywords: *Revenue Collection, Financial Performance, County Government of Siaya, Point of Sale Machines, Electronic Cash Registers, Mobile Payment Systems, Electronic Systems Inefficiency.*

I. INTRODUCTION

➤ *Background of the Study*

This section focused on the background of the study and the problem statement. In addition, the aims of the research are discussed in his chapter as well as the research questions, study scope, justification, and conceptual framework of the project. The Government collects revenue mainly to fund services that are offered to the public. Ayana, Demissie, & Sore (2024) define government revenue as the funds received by the state from different sources. Revenues collected by the County Governments are termed as Own Source Revenues and are collected within the jurisdiction of each county (Onwonga, 2024).

In recent years, revenue collection among devolved governments has drawn more interest from around the world. Own-source revenue collection is a component of devolved functions in many nations, with an emphasis on the agreements made between the central government and local governments over spending, finances, and revenue collection. Some developing nations like Ghana, Lesotho, and Nigeria introduced devolution of functions to local governments with the collection of revenue as part of their functions. (Dick-Sagoe, 2020). It is worth noting that the majority of devolved governments in Africa depend on local taxes to fund their operations, but this is not enough to sustain the constantly expanding population of the continent. (Simiyu et al., 2014) noted that citizens' welfare has decreased in Africa as a result of most devolved governments' inability to keep up with service demand. This is a result of several socioeconomic problems and obstacles that they encounter.

Regionally, East African nations, such as Rwanda, saw the establishment of local governments and own-source revenue collection as an urgent and necessary corrective action in response to their economic challenges. (Kahindi, 2013). Improved collection of own source revenue among the devolved units has seen an improvement in the overall development of the whole country. Devolved governments' primary issue is allegedly poor revenue collection, as evidenced by their significant reliance on transfers from central governments. If devolved units in Kenya, and even Africa, are to successfully and suitably deliver the services needed, they must come up with innovative ways to raise more revenue (Kirer *et. al.,* 2024). According to Fernandhytia and Muslichah (2020), county governments establish revenue targets as benchmarks that provide precise goals for the collection of money from local taxes, fees, and other sources in an attempt to achieve OSR. By setting clear revenue targets, county administrations create a structure for targeted activity and methodical planning. Revenue targets have encouraged counties to implement effective collection strategies like modern technology (Abiola and Asiweh, 2022). Additionally, these goals promote creativity in revenue-generating tactics, inspiring counties to investigate the use of technology to increase productivity.

In Kenya, Article 206 of the Constitution of Kenya (2010) establishes a consolidated fund through which all the revenues collected by the National Government are paid. Additionally, the Own Source Revenue (OSR) is provided for in Article 209 of the 2010 Kenyan Constitution, where it is depicted as revenues generated by County Governments through different streams like fees, charges, and levies. Different County Governments, upon their establishment in 2013, inherited the revenue collection systems from the former Local Authorities to help in the generation of the OSR. The counties have since made attempts to improve the systems in a bid to improve efficiency and enhance collection through the adoption of new technologies and enhancement of human capacity to collect and manage revenues. The collection of revenue in the counties, including the County Government of Siaya, has remained relatively low since 2013, with the majority, if not all, not meeting their projections (Owandho, 2020). Therefore, adopting measures to enhance revenue collection and reduce the deficit between the budgeted and actual OSR to improve service delivery remains highly important.

An electronic revenue collection system has been defined as a cashless process of collecting taxes paid or remitted. Paying or remitting revenue to the government without the need to visit the financial institutions and government offices also forms part of electronic revenue. Over the years, the government has made tremendous improvements in adopting efficient revenue collection through the use of technological innovations. County Governments have since adopted different electronic revenue collection systems, including the use of POS gadgets, ECR, and Mobile payment systems (Githinji,2014).

➤ *Financial Performance*

The financial performance of county governments refers to the way in which the county government enhances revenue collection and uses it in delivering services and carrying out development activities (Njahi, 2017). In addition, financial performance can be defined as how effectively an organization utilizes its assets to generate revenue. Financial performance also refers to the effectiveness of compliance with the needs of customers and the efficiency with which it uses the resources to meet the satisfaction levels of customers.

Financial performance of an organization or an entity is informed by indicators like liquidity, net income, and solvency (Nyaga, 2014). Liquidity refers to the availability of finances to allow bill payment, while net income is the quantity of revenue that is in surplus when compared to the expenses, and a comparison between assets and a combination of liabilities and assets determines the solvency of an entity. According to Kiilu and Ngugi (2014), financial performance revolves around the art of ensuring accurate data on every financial transaction in a firm with reference to proper budgeting of its strategic goals and projected

expenditure. Financial performance requires that an entity periodically generate its management accounts that can be used by the management to assess the progress of the entity against the planned budget and enable them to make informed future financial decisions.

Financial performance has been used to describe the financial status of local governments in the early days, including the local governments in the United States for a long period (Kamnikar & Deal, 2006). With a focus on local governments, the researchers defined financial performance as the capability of the government to continuously finance its services in a manner that is required by the citizens, thus meeting its obligations as the need arises.

Looking at the county governments, Lubale (2017) alludes that financial performance measures the utilization of financial transfers from the national government to facilitate revenue generation and payment of expenses following the budget approved by the county government. Wang'ombe and Kibati (2016) define financial performance as the county government's capacity to consistently fund services offered to the citizens while meeting its fiscal obligations, which extends to the implementation of projects. This means that the financial, budgetary, and economic data of a county government are important in determining the true value of financial performance. Generally, a county government records a poor financial performance when it cannot finance its budgeted service delivery and implement projects sustainably to improve the economic status of the citizens, despite receiving the necessary financial transfers from the national government, leading to poor revenue collection or generation.

Kisaka (2021), however, notes that the financial performances of county governments are greatly influenced by factors like political influence, interest groups, laws and policies, and communities, which significantly affect the release of funds and implementation of projects. These factors become noticeable when the county government cannot generate enough Own Source Revenue (OSR) to supplement the transferred funds in implementing budgeted projects.

➤ *County Government of Siaya*
The promulgation of the Constitution 2010 provided Kenyans with a new constitution following a two-decade quest for constitutional changes. This saw the establishment of forty-seven county governments, which became functional after the election of Governors and members of the county assemblies in 2013, as provided in Article 262 Section 2(2) of the Kenya Constitution, 2010. Article 174 of the Constitution spells out that the structure of the county government aims at promoting unity through diversification and equitable resource distribution in the nation. The bringing of resources and amenities to the public formed another reason for the devolved governments, with experts arguing that county governments are likely to address specific challenges facing the population at the grassroots level more appropriately than the National Government, using the local knowledge and resources.

An overview of the County Government of Siaya reveals various challenges ranging from transport, housing, education, and health problems due to a lack of adequate resources. Even though the improvement in service delivery and implementation of development projects has remained slow, public participation among the citizens during decision making has seen tremendous improvements.

Article 206 of the Constitution 2010 spells out procedures for establishing a consolidated fund through which all the revenues collected by or on behalf of the National Government are paid (Kenya Laws, 2013).

The unconditional transfer of funds from the National Treasury to the Siaya County is guaranteed by the same constitution with the amount sharable determined and shared among the counties using formulas approved by the members of the Senate and National Assemblies. Under the, Article 209, the County Government of Siaya is mandated with generation of Own Source Revenue (OSR), depicted as revenues generated by county through different streams like fees, charges and levies. With the transfers from the national treasury and own source revenue, the county acquires the means to address local needs thereby providing a basis for citizens of Siaya to assess their performance on service delivery and implementation of projects (Khaunya, Wawire & Chepng'eno, 2015). However, due to inadequate finances, the county failed to perform most of devolved functions as well as supporting their operations. For instance, of Siaya County has witnessed disruption of services in sectors like health which has been characterized with lack of drugs and delayed salaries. This is an indication of inadequate finances and poor financial performance, thus the need for reduction of financial deficits through enhanced revenue collection.

➤ *Revenue Collection in Siaya County*
The County Government of Siaya utilized manual revenue collection techniques until 2015 when the POS, ECR, and Mobile payment system were introduced for use in the 2015/2016 financial year. As of 2019, 30.4% of revenue collection systems in Siaya County had not been automated, and another 30.4% had low-level system automation. In addition, 17.4% had medium-level automation while another 17.4% adopted a hybrid system where both automated and manual systems were operated (Ligeyo, 2019).

Looking at the 2018/2019 financial year, the County treasury aimed at collecting Ksh 325 million in the form of OSR (Siaya County Fiscal Strategy Paper, 2018). However, the actual collection for the financial year stood at Ksh 189.7 million with a deficit of Ksh 135.3 million (Siaya County Fiscal Strategy Paper, 2019). The highest fiscal deficit of up to Ksh. 235,750,000 against the budgeted Ksh. 420,000,000 was recorded in the 2019/2020 Financial Year (Siaya County Fiscal Strategy Paper, 2020). According to the Siaya County Treasury, the COVID-19 pandemic and inefficient revenue collection system played major roles in the high deficit witnessed during the financial year (Economics, 2020). In the 2020/2021 financial year, the Own Source Revenue for the county stood at Ksh. 336,290,000 against the budgeted revenue of Ksh. 420,000,000, leaving a deficit of 83,710,000

(Siaya County Fiscal Strategy Paper, 2022). The projected OSR 2021/2022 Financial Years was surpassed by 930,000 after 446,380,000 was collected against the budgeted 445,450,000 (Siaya County Fiscal Strategy Paper, 2023).

Furthermore, according to the data from the County Treasury, the county is expected to receive Ksh. 6,966,507,513 in the form of an equitable share during the 2022/2023 fiscal year. It is also projected that the Own Source Revenue for the county would increase to KSh. 701,000,000 in 2022/2023. Up to the 2021/2022 financial year, only 1,836,885,768 had been collected by Siaya County as OSR (Siaya County Fiscal Strategy Paper, 2024).

The low OSR collection means that the county relies heavily on the exchequer transfers from the National Government and grants from development partners. A continued trend of fiscal deficit in OSR would translate to reduced capital investments and savings, with a significant reduction in the quality of services being the result. Several county satellite projects have also remained incomplete due to inadequate finances for development. According to the Siaya County Fiscal Strategy Paper, the Treasury acknowledges that there is a need for undertaking revenue reforms in terms of employing efficient revenue collection systems to reduce the huge deficit in the OSR.

The revenue collection in Siaya County has remained relatively low. The County Government of Siaya projected to collect over Ksh. 1.8 billion in Own Source Revenue between 2013 and 2018. However, the county treasury collected a total of Ksh. 870 million with over Ksh. 930 million recorded as a deficit for the financial year. The county recorded a very high deficit during the 2017/2018 financial year, with only Ksh. 127,729,540 million collected out of the projected Ksh. 270 million OSR (Siaya County Fiscal Strategy Paper, 2019). This can be attributed to political influence, interest groups, inadequate laws and policies, and communities (Kisaka, 2021). However, leakages in the collection system have significantly prevented the County from realizing its full potential, with reference to the budgeted and actual OSR (Owandho, 2020). In this regard, incorporation of technology like the utilization of Point of Sale (POS) gadgets and Electronic Cash Registers (ECR) in the revenue collection system has remained important in sealing leakages in the system in a bid to reduce deficits in budgeted own source revenue for the County Currently, various Departments in the County Government have scaled up the use of automated system by adopting mobile payment system as an electronic payment systems. The Mobile payment system is mainly utilized by institutions delivering services characterized by a very high number of people and frequency of payments, like hospitals in the County. It is worth noting that the revenue collection in some of the streams in the county has been fully automated, while others remain low or at a medium level.

Enhanced revenue collection is an important measures of financial performance in both national and county governments. Kiambi (2022) defines service delivery as any interaction at government offices to enable people, firms, and customers to obtain or provide information as the administrations carry out their functions while handling the affairs of the citizens or organizations. The government must render its services to citizens in a friendly, effective, reliable, and predictable manner that meets the standards of citizen satisfaction. The county governments have vital responsibilities in delivering a wide variety of services to individual citizens and private enterprises by putting in place the required infrastructure through budgeted development projects. Customer-citizen satisfaction, the extent to which services delivered by business or government meet the expectations of the customers or citizens (Omar, 2018), is a key indicator of financial performance in both private and public organizations.

Mbufu (2013) argues that revenues are essentially returns to the government that are paid or gathered with the intention of enhancing the welfare of the citizens. The county governments can provide the infrastructure necessary for economic growth and offer social services to the public by collecting revenue. Torome (2013) found that local governments performed better when they mobilized or collected more income, this was according to his investigation on the association between revenue collection and local authorities' performance in Kenya.

Cote (2015) and Chepchirchir (2019), Ahmed et al. (2021) and other researchers have investigated the effects of various indicators of electronic revenue collection including point of sale machine, electronic cash registers, and mobile payments, on financial performance.

Prior studies on the effect of point-of-sale machines on financial performance show mixed and inconclusive results. Cote (2015) and Chepchirchir (2019) found a positive effect of point of sale machines on organizational performance when they used the descriptive research design with descriptive and inferential statistics analyses. However, revealed inconclusive results on the effect of the point of sale machine on merchants and bank employees using a descriptive research design and descriptive and inferential statistics analysis technique.

By using a descriptive research methodology and both descriptive and inferential statistical analysis, the examined literature demonstrated that point-of-sale machines had a positive impact on financial performance. The reviewed literature revealed inconclusive results of the influence of POS machines on organizational performance, applied descriptive research and descriptive and inferential statistics methods of analysis. All the studies focus on developing counties in Africa, but none focus on Kenya and the county governments, specifically on the County Government of Siaya. As a result, the purpose of this study was to establish the effect of electronic revenue collection on the financial performance of the County Government of Siaya.

Previous research on how mobile payment systems affect financial performance has produced contradictory findings. Scharwat (2014); Apeti & Edoh (2023); Jumanne & Mrindoko (2023), and Mtebe & Sausi (2021) found positive effect of mobile payment system on financial performance

using correlation, descriptive and cross-sectional research designs. Scharwat (2014); Apeti & Edoh (2023); Mtebe & Sausi analysed the data using descriptive and inferential statistical analyses while Jumanne & Mrindoko (2023) used multiple regression analysis. Contrarily, Alamgir (2019) found a negative effect of perceived risk in mobile payment system on trust and customer satisfaction using an exploratory research design and structural equation modelling for analysis. The reviewed literature adopted different research methods and analysis techniques to arrive at the mixed results. All the studies used primary data with some of them revealing strong positive relationship between mobile payment system and revenue collection as well as financial performance while others showed negative effect on adoption of mobile payment system. None, though, concentrate on the Siaya County Government. Thus, the purpose of this study was to establish the effect of electronic revenue collection on financial performance of County Government of Siaya.

Previous research on how electronic cash registers affect financial performance posted mixed findings. Muhammed & Tesafa (2015); and Casey & Castro (2015) showed positive effect of electronic cash register on financial performance. The studies adopted the case study and descriptive survey research designs respectively with both using the descriptive statistics analysis technique. On the contrary Wanjiru, (2014) found a negative effect of electronic cash register on revenue collection using descriptive design. The researcher adopted the correlation and regression techniques to analyse the data. Bekele (2020) found negative results on cash register machine compliance to revenue collection through regression and percentage analysis and a descriptive research design.

The reviewed literature adopted either case study or descriptive survey research designs with descriptive statistics and correlation and regression analysis techniques and showed contradicting findings. Investigations with positive effect of electronic cash register on revenue collection and financial performance were carried out with a view of various countries across the world including Kenya. None of the studies investigated the impact of electronic cash registers on tax collection in Kenya's counties, particularly the County Government of Siaya. Therefore, this study sought to establish the effect of electronic revenue collection on financial performance of County Government of Siaya.

Previous research on how electronic revenue collecting affects financial performance has produced inconsistent findings. Wahome (2018); Ozili (2018); Yu, Huang, Kong, & Zhu (2023) and Awwad (2021) applied the descriptive design and found strong positive results of electronic revenue collection on organizational financial performance. Contrarily, Kiarie (2020) used the descriptive research design and found a negative effect of electronic revenue collection on financial performance. The evaluated literature on the impact of electronic methods of revenue collection on financial performance mostly addressed local governments, with some also addressing county governments, in Kenya and other regional countries.

The studies that revealed positive impact of electronic revenue collection on organization financial performance applied descriptive and correlation research designs with regression and correlation analyses. On the contrary, studies with negative relationship between electronic revenue collection and financial performance utilized the descriptive research design and analysed results using regression analysis. Thus, the study sought to establish the effect of electronic revenue collection on financial performance of County Government of Siaya. Therefore, the goal of the study was to establish the effect of electronic revenue collection on financial performance of County Government of Siaya.

➢ *Statement of the Problem*

An efficient and reliable revenue collection system is an important tool for optimal revenue collection for both governments and organizations. With the maximised revenue, a county government can easily meet its recurrent expenditures and fund its development projects for efficient service provision to the citizens. As at 2022, the Kenyan County Governments performed poorly in revenue collection with the report by Commission on Revenue Allocation indicating that counties had a potential of collecting up to Ksh. 216 billion against the Ksh. 31billion collected annually. A comprehensive report done by the Commission on Revenue Allocation on the OSR potential by counties indicated that Siaya has a potential of collecting up to Ksh.1.2 Billion annually (CRA-Kenya Report, 2022). Nonetheless, the county has seen an average deficit of almost 35% of OSR targets during the previous nine years, indicating an underperformance of significant levels. According to the County Fiscal Strategy Papers, during the 2013/2014, 2014/2015 and 2015/2016 financial years, the County Government recorded negative deviations of -34, -52% and -41% in Own Source Revenue respectively. In addition, during the 2017/2018, 2018/2019, 2019/2020, and 2020/2021 financial years, the County Government of Siaya had negative deviations in Own Source Revenue of -53%, -42%, -56%, and -19% respectively with a slight positive deviation in 2021/2022 financial year. Inadequate and inefficient electronic revenue collection system has been cited as the major contributor to the continued underperformance in collection of revenue. Despite the county having a partially automated system of revenue collection, it must be noted that the revenue collected has remained significantly low over the past five years. This means that the systems may be inadequately utilized thus the need to assess with a view of increasing the revenue collection and financial performance.

Research findings on use of automated revenue collection on financial performance showed inconsistent results. Against this backdrop, the purpose of the study was to establish the effect of electronic revenue collection on financial performance of County Government of Siaya. Specifically, the study was to determine the effect of Point of Sale machine on financial performance of County Government of Siaya, establish the effect of Electronic Cash Register system on financial performance of County Government of Siaya and asses the effect of Mobile Payment System on financial performance of County Government of Siaya. Therefore, the goal of the study was to determine the

effect of electronic revenue collection on financial performance of County Government of Siaya.

➢ General Objective of the Study

The general objective of this study was to establish the effect of electronic revenue collection on financial performance of County Government of Siaya.

➢ Specific Objectives

The study sought to:

- Specifically, the Study sought to:

✓ Determine the effect of Point of Sale (POS) machine on financial performance of County Government of Siaya.
✓ Establish the effect of Electronic Cash Register (ECR) system on financial performance of County Government of Siaya.
✓ Assess the effect of Mobile Payment System on financial performance of County Government of Siaya.

➢ Research Hypotheses

- H_{O1}: Point of Sale (POS) machine has no significant effect on financial performance of County Government of Siaya.
- H_{O2}: Electronic Cash Register (ECR) system has no significant effect on financial performance of County Government of Siaya.
- H_{O3}: Mobile Payment System has no significant effect on financial performance of County Government of Siaya.

➢ Scope of the Study

The study revolved around the concept of electronic revenue collection in county governments in Kenya and their financial performance as in the study objectives. Both dependent and independent factors served as the foundation for this investigation. The Electronic Revenue Collection formed the independent variable is which is indicated by Point of Sale Machine, Electronic Cash Register System, and Mobile Payment System. The financial performance, which is demonstrated by improved revenue collection formed the dependent variable. The scope of the study revolved around subject, time and location. The study focused on determining the influence of electronic revenue collection on financial performance of Siaya County from 2018 to 2022. The respondents provided the primary data for the research, which were then analysed.

➢ Justification of the Study

In many countries, the priority of the government is to perform highly as required by the citizens. The performance however depends on the availability of funds to enable the functionality of all areas of service delivery. As at 2022, the Kenyan County Governments performed poorly in revenue collection with the report by Commission on Revenue Allocation indicating that counties had a potential of collecting up to Ksh216 billion against the Ksh. 31billion collected annually. Similarly, a comprehensive report on the own source revenue potential indicated that Siaya has a potential of collecting up to 1.2 Billion annually.

Adoption of automated revenue collection system is forms part of the recommendations for increased revenue collection. The County Government of Siaya has recorded insignificant increment in revenue collection despite having a partially automated revenue collection over the past five years. It is therefore important to carry out this research assess the effect of electronic revenue collection system with focus on POS, ECR and mobile payment systems currently being utilized by the county government. The results of the study would provide the revenue administrators an earliest opportunity to realign the system towards increasing the revenue collected by the County Government.
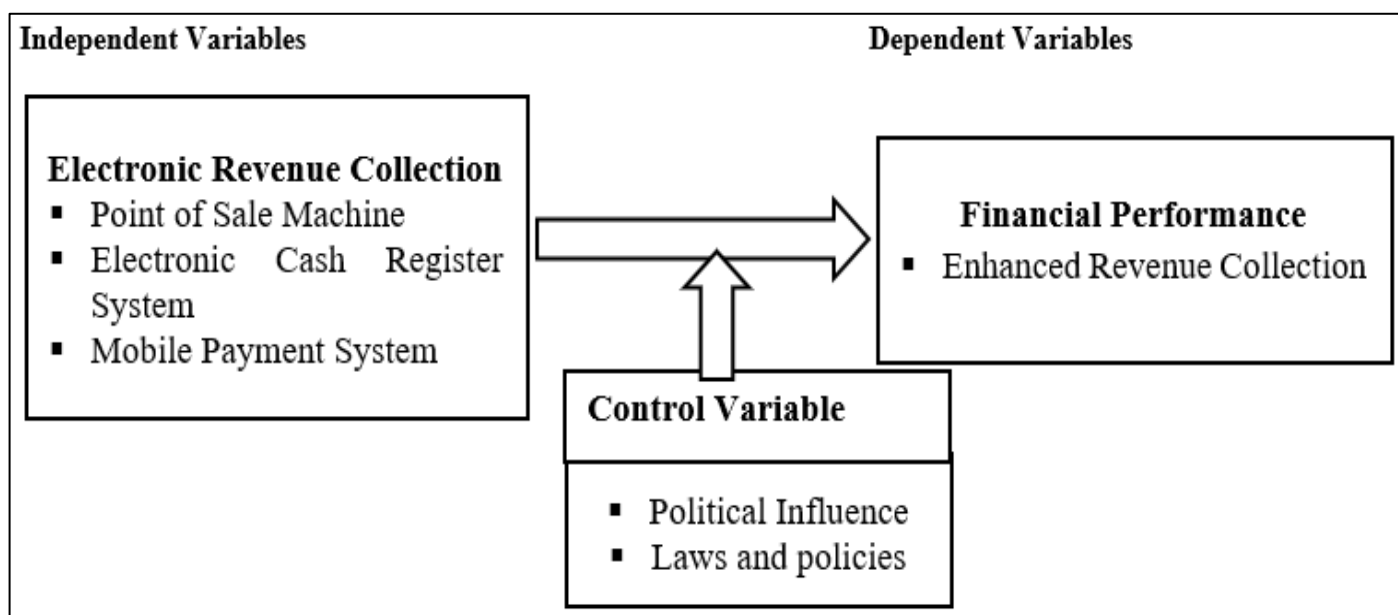
➢ Conceptual Framework

Fig 1 Relationship Between Electronic Revenue Collection and Financial Performance Controlling Variable.
Source: Adapted from Dahlby (2009)

From the figure 1-1 above, the electronic revenue collection forms the independent variable and dependent variable is the financial performance. The indicators for electronic revenue collection include Point of Sale Machine, Electronic Cash Register System, and Mobile Payment System while the dimensions for financial performance are the improved revenue collection and efficient service delivery.

II. LITERATURE REVIEW

The dependent and independent variables are reviewed theoretically and conceptually in this chapter. In addition to critically analysing the literature, the chapter covers the empirical literature on earlier investigations in this field of study.

➢ *Theoretical Review*

• *The Expediency Theory of Taxation*

The Expediency Theory of Taxation is largely associated with Bhartia (2009). The theory proposes that the social and economic goals of the government should be disregarded because a tax with inefficient levy and collection procedure becomes useless. It is however important to note that there is pressure emanating from different groups in the economic, political and social divide, with each group always trying to shield and champion for its own interests. According to Bhartia (2009), the government often succumbs to the pressure from the groups and forced to change the established tax structure in a bid to accommodate their interests. Furthermore, the managerial set up of the government may lack the capacity to efficiently collect revenue at allowable costs of collection thus rendering the whole revenue collection and management not viable.

Taxation is one of the most powerful policy tools that county governments have and should be utilized efficiently to bridge the societal economic and social gaps like regional disparities, unemployment, cyclical fluctuations, income inequalities as well as education inequalities. This theory is relevant for this study since expediency mainly revolves around the influence of administrative set up in revenue collection. Use of efficient electronic systems in revenue collection forms part of the administrative set up and may have great influence in revenue collection in the County Governments.

• *Technology Acceptance Model (TAM) Theory*

The TAM forms the basis of this study and it forms a theory information system that represents the way users adopt and utilize technology. As maintained by the technology acceptance model, the user's thinking, behavioral patterns, and how their perception on the use of the system are influenced directly or indirectly by one's practical adoption of a technological system. Acceptance of technology is associated with a positive insight of its effectiveness and usage (Bagozzi and Warshaw, 1989). The perceived usefulness was defined by the researchers as the degree to which a person feels that adopting a new system has the potential of boosting their performance whereas easy usage is

the degree to which it would ease their mental effort. The TAM has evolved to TAM2 to explain more about usage intentions and perceived usefulness and that includes; instrumental cognitive processes, experience, and including social influence (Venkatesh & Davis, 2000). It further shows how a person's approach to use of the information system determines their behavioral patterns and intentions. Venkatesh and Davis (2000), assert that other than the individuals' attitude, the influence on performance also dictates their use of a system.

The relevance of this model to the study is derived for the fact that it helps in understanding key factors that establish the acceptance and use of new technologies like advanced electronic revenue collection systems by users in the Siaya County Government. Addressing the factors prior or during the adoption of the technology is likely to make the system useful with positive results.

➢ *Empirical Review*

• *Electronic Revenue Collection*

Several researchers provide different definitions and understandings of electronic revenue collection systems. For instance, Okiro (2015) defined an electronic revenue collection system as the process of transferring funds from home without the need to visit the bank for transactions. Gupta, Keen, Shah, & Verdier (2017) assert that electronic revenue collection is the utilization of electronic and communication networks for the delivery of improved products and services to clients. The use of an electronic revenue collection system can only be ascertained by the incorporation of electronic media in the reception of cash instead of hard currency (Fatonah et.al, 2018). It has been observed that currently, the electronic systems have overtaken the manual methods of financial transactions. It can be noted that various departments in government ministries have adopted the utilization of ICT in the delivery of services, as it highly simplifies the operation process and enhances the effectiveness and efficiency of service delivery. An electronic revenue collection, therefore, enables a convenient, fast, and transparent collection system as well as effective management of the finances.

According to Mornica et al. (2017), an electronic revenue collection system refers to an online platform where taxpayers can access through internet-connected devices to get services that are provided by the revenue authority, including the generation of personal identification numbers, filing returns, and the generation of compliance certificates. Through the introduction of virtual or digital currency, electronic revenue collection plays a bigger role in attaining a cashless environment and revenue collection system automation to enable government agencies to effectively utilize technology in delivering public services. The cashless transaction processes have seen the county governments' record increase in revenue collected for funding development projects. Electronic revenue collection systems like Point of Sale, Electronic Cash Register, Mobile Payment System, and Electronic Baking Systems have been designed to help the government, the public, and financial institutions reduce or

eliminate obstacles that are common in the revenue collection or payment process. In addition, Oparanya (2019) recommended that the county governments should consider adopting such digital revenue collection systems to help in sealing loopholes that have always led to losses in revenue.

- *Concept of Point-of-Sale Machine*

The Point of Sale (POS) machine can be defined as a software that is utilized for sales transactions, with the main objective being the production of sales reports containing data on sales for both customer and management consumption or use. The POS utilized for revenue collection simply consists of payment reporting, receipt generation, and transaction security standard systems. With this system, an individual tasked with revenue collection is assigned a POS machine and mandated with the generation and issuance of a receipt for every cash received from a taxpayer. Upon the issuance of the receipt, the details of the transaction are relayed to the control center, where analysis and tallying for each machine is carried out, and reports are generated for comparison purposes.

The contributions of POS machines in Own Source Revenue collection have been investigated. Reliability, ease of use, speed of transactions, accuracy, fraud minimization, and amount of revenue collected are important factors determining the level of contribution of the POS machine in revenue collection (Silago & Mkumbo, 2021). It is important to have a POS machine that is highly reliable, fast, accurate, and simple, with reduced fraud levels and large revenue collection. The personnel tasked with its operation must accept the technology and possess the required skills for the machine operation.

In county governments, the POS machines are used to collect revenues from small-scale traders in markets and mobile traders or hawkers, where a large number of transactions are handled at a given time. The contributions of the machines in reducing fraud and increasing accountability among revenue collectors are significantly high, as the cash returns are tallied against reports on receipts issued by machines operated by each individual. However, a cashless system with POS machines during revenue collection remains a challenge as the operators still handle hard cash, which is deposited in banks at the close of the day.

- *Electronic Cash Register System*

An electronic cash register can be defined as a system made of a CIS and Sales Data Controller (SDC), also known as the Electronic Signature Device (ESD). While the CIS helps in the efficient management of payments made by the machine, the SDC signs and stores the payment information, then transmits the receipt data to system servers for further storage and analysis. The Electronic Cash Register can function as a standalone or networked with other systems. The networked ECR systems allow for the monitoring of payments or sales at different levels. Advancements in technology have provided different ranges of ECR systems, with the ones using medium technology being able to maintain details of every transaction digitally or on till rolls.

Sophisticated ECR systems can perform statistical functions and carry out checks and balances in the payments or sales.

Effective management of data in the ECR remains important for it to become useful in sales by the organization or revenue collection by a government agency. The data in the systems must be readily available in a legible format, within a reasonable time when required for analysis or auditing. In addition, the data should be independently verifiable, and reproduction should be made possible in the event of a system upgrade or the introduction of a new payment system. The ECR systems have been utilized by county governments to facilitate revenue collection in various revenue streams, especially in hospitals, where details of payments can be accessed at different sections in networked ECR systems. While the system enhances efficient service delivery, it significantly helps in sealing loopholes witnessed in manual revenue collection systems as it records and stores all details of collected revenue in the facilities for verification, analysis, and auditing.

- *Mobile Payment System*

A mobile payment refers to the transfer of funds or payment to a business, person, or government agency for bills, goods, services, or taxes through a mobile device for execution and confirmation of the payment. The mobile payment system comprises tools in the mobile device that are used for the transfer of funds and may include a SIM toolkit or mobile browser, or application. The use of mobile payment systems has become widespread and is one of the most used mobile financial services in Kenya and Africa at large, as it complements other products like mobile banking. The system can be classified based on the parties involved in the transaction, like person-to-person or person-to-business, or person-to-government. In this regard, the person-to-person transaction can be termed as a transfer, while the person to business or government forms a payment transaction. In addition, the payment can be remote or proximity payment, like submitting remittance online or making payments at the point of sale, respectively. Remote mobile payment remains popular and efficient as payments are made over a given telecommunication network that is widely spread throughout the country or overseas.

In the government agencies and county governments, the use of the mobile payment system in remittance of taxes and subsequent collection of revenue continues to gain momentum. Apart from the convenience created by the ability of individuals to make payments remotely, the system remains reliable and verifiable as text messages sent to both ends serve as receipts for payments and track records for payments received. Since payments are made directly to the registered mobile money accounts via pay bill or till numbers, the process remains entirely cashless, thus sealing gaps available for pilferage of revenue collection. Furthermore, the telecommunication networks through which payments are made have proven to be highly secure, making the system highly efficient for revenue collection. Generally, a mobile payment system forms one of the most efficient types of electronic revenue collection methods that can be adopted by county governments.

- *Political Influence, Laws, and Policies*

Taxpayers' political influence adversely affects the revenue-generation efforts by the governments, both national and county. The direct implication of these factors results from tax avoidance and tax evasion by the public, while reduced compliance with voluntary taxes, because of eroded tax morale among citizens, forms the indirect effects of political influence, laws, and policies on revenue collection. Subsequently, this leads to reduced tax collection as well as the financial performance of the public entities (Abbas et al., 2017). Conflicting results have been found on the influence of politics on revenue collection and financial performance. Yogo & Njib (2018) revealed that for trade and indirect taxes, countries having fiscal policies have experienced a net negative effect of political competition on their tax collection.

Mueni, Wawire, and Onono (2021) discovered that higher levels of democratic accountability and political bureaucracy are correlated with higher tax receipts. Increased democratic accountability and quality of political bureaucracy resulted in enhanced tax revenue. Institutions with higher efficiency revealed increased tax collections during social strife periods, indicating the existence of inspection and displacement effects. Furthermore, internally inflicted political wrangles in institutions have resulted in a reduction in collected tax revenues. Amedanou (2021) showed that institutions with democratic political regimes had a significant increase in tax revenue while autocratic regimes recorded reduced tax collection.

The scope of principles and purposes of taxation has seen an expansion due to regulations in the field. It is worth noting that there exists a direct relationship between the principles of taxation and the rule of law principle. According to a study by Günel & Didinmez (2022), regulations negatively affect the collection of taxes, fees. However, this result contradicts the theoretical expectations, as the countries' economic conditions, like the level of economic development, have a key role in tax revenue collection. Kioko (2022) argued that corporate governance practices play critical roles in KRA's endeavors towards improving its revenue collection. The researcher recommended that sound policies should be established by policymakers to guide government institutions like KRA on practices of corporate governance.

- *Effect of Point-of-Sale Machine on Financial Performance*

Silago & Mkumbo (2021) assessed the functions of POS machines in the collection of revenue and financial performance with a focus on Sumbawanga Municipal Council, Tanzania. The study was conducted using a descriptive research approach, with stakeholders and revenue personnel serving as the target audience. A systematic random sampling technique was used to form a sample of 99 participants, and the data were collected from them using interviews and questionnaires. The descriptive and inferential statistics through SPSS were used to analyse quantitative data. According to the study findings, the use of POS machines led to increased accuracy and reliability of revenue collection records as well as improved financial performance.

Hassan et al. (2022) researched how financial performance is affected by the challenges facing the utilization of POS in relation to the perception of banks' employees and merchants in Sudan. Information on the views of the merchants to inform their perspective on challenges facing POS was obtained via questionnaires, while the data on the perception of the banks' employees was obtained using quantitative techniques. It was noted that 141 of the 150 questionnaires that were delivered in Khartoum were answered by merchants, and 100 employees from the Bank's IT and marketing departments were involved in discussions for the targeted group. The study findings showed that the banks recorded reduced financial performance due to negative customer perception, legal and regulatory restrictions, and operational challenges such as poor network reliability of POS machines. According to the banks' employees' perception, lack of 'know-how' and incentive plans to encourage adoption of POS machines were the major hindrances to the use of POS machines, leading to low financial performance of the selected institutions. In conclusion, it was advised in the study that more capital be directed towards the development of IT infrastructure and improvement of the network, as well as the need to re-examine regulations controlling various related stakeholders involved in the POS.

Inefficiencies facing POS and the ripple effect on the financial performance of Nigeria's Lagos State local government in relation to socio-economic characteristics of users and non-users have been examined (Adeoti, 2013). The study sample was formed by 650 respondents who were randomly sampled across twenty local governments in the Nigeria's Lagos State. The Friedman and Kendall ranking order test was used to analyse the data. According to the findings of the study, network failure, limited number of POS, frequent power outages, and security of communication were the most challenging factors to efficient utilization of the POS, which led to the reduced performance of the local governments. The study recommended the improvement of the security of transactions to reduce the number of unregulated transactions.

The reviewed literature showed mixed results. The studies that revealed positive effects of point of sale machines on organizational performance applied the descriptive research design with descriptive and inferential statistics analyses. The studies that showed inconclusive results on the effect of point-of-sale machines on financial performance had unspecified research designs and techniques of analysis. All the research works were carried out in other African countries, with none focusing on Kenya or county governments, particularly the County Government of Siaya. Therefore, this study seeks to determine the effect of the point of sale machine on the financial performance of the County Government of Siaya.

- *Effect of Mobile Payment System on Financial Performance*

Jepkoech (2021), in her research to determine the optimal determinants of revenue collection in Nandi County Government, studied the effect of revenue automation on the

efficiency of revenue collection in the local government. The effect of operational determinants like automation on the efficiency of revenue collection was analysed, and results revealed that there existed a positive and significant correlation between automation and revenue collection efficiency. In conclusion, the researcher noted that the use of mobile technology, including mobile money, formed part of automation in revenue collection, and the computerization of all processes in revenue collection would eliminate errors while reducing revenue collection costs.

Nyaga (2016) investigated how innovations in the procedures for revenue collection affected the financial performance of selected Kenyan devolved governments. The researcher intended to specifically determine the effect of training, payments through mobile money, the revenue databank system, as well as online tax remittances on the financial performance of the devolved governments that were selected for the study. The selection of respondents in the research was done through simple random sampling, and the sample population used consisted of a total of 124 respondents. Using semi-structured questionnaires, the primary data were obtained and analysed using the SPSS version 20 software. Moreover, the linear regression analysis was carried out, and the correlation coefficients between the variables were determined. There was a significant positive correlation between online tax remittances, mobile money payments, and the revenue database system, and the financial performance of the county governments that were incorporated in the study. This implies that county governments adopting electronic revenue collection and management systems like online tax remittances, mobile money payment, and revenue database systems are likely to record enhanced financial performances.

Chepkoech, Gichana, & Agong (2022), while focusing on Nairobi City County, researched to establish the relationship between the mobile payment system and e-services tax collection. A cross-sectional research design guided the study and utilized a sample population of ninety-eight middle-level management staff and one hundred and forty-three low-level management staff drawn from both Nairobi City County Government and the Kenya Revenue Authority, who were presented with a semi-structured questionnaire for data collection. After conducting correlation and multiple regression analysis on the data, the results showed that E-services, E-banking, and mobile payments enhanced revenue collections in Nairobi City County Government. The study also revealed that mobile payment had a significant effect ($\beta = 0.670$; $p < 0.05$) on sustainable revenue collection in the county. In addition, e-banking payment systems recorded a significant effect ($\beta = 0.731$; $p < 0.05$) on sustainable revenue collection. According to the researchers, the use of mobile payment, e-banking payment systems, and e-services like e-wallets is important in curbing fraud and other revenue leakages that exist in manual payments.

On the contrary, the study by Hossain (2019) revealed negative results on the effects of the mobile payment system on financial performance after adopting an exploratory research design and structural equation modelling method of analysis. The researcher used primary data and a sample size of 264 respondents. The reviewed literature showed mixed results on the effect of the mobile payment system on financial performance. Some of the studies found a strong positive effect of the mobile payment system on financial performance, while others revealed a negative influence of mobile payment on financial performance. A number of the studies focused on county governments, but none were carried out in the County Government of Siaya. Thus, the purpose of this study was to evaluate how the mobile payment system affected the Siaya County Government's financial performance.

- *Effect of Electronic Cash Register on Financial Performance*

The study by Lucian (2022) investigated the impact of the use of EFD on the collection of taxes in Iringa Municipality, Tanzania. The research incorporated the Electronic Cash Register in the types of EFDs selected for the study. The researcher investigated changes in revenue collection in the municipality over 20 years. The case study design was adopted, and descriptive statistics were used to analyse the primary and secondary data collected. The results revealed that even though there was growth in collected revenue over the years, the rate of growth increased upon the introduction of the EFDs from 59.8 in 2010 to 76.08% in 2020. The researcher argued that the introduction of the electronic systems enhanced accuracy and efficiency in the revenue collection process, thus an increase in revenue and subsequent financial performance.

The study by Lyimo and Makilully (2022) also determined the impact of EFD on revenue collection and financial performance in Tanzania, with a specific focus on the Tanzania Revenue Authority. During this study, the researchers applied a descriptive survey design with a simple random sampling, allowing them to select a sample of 80 respondents from 100 staff members from the Tanzania Revenue Authority. The data obtained was analysed through IBM SPSS Version 25. Upon analysis of the results, the study concluded that the efficiency of EFDs and revenue collection were significantly and positively associated. Subsequently, the increasing revenue collection enhanced the financial performance of the Tanzania Revenue Authority. In other words, the efficiency and effectiveness of the EFDs improved revenue collection, which translates to improved financial performance.

The above literature revealed positive and negative findings. Studies of Lucian (2022) and Lyimo & Makilully (2022) found a positive effect of electronic cash register on financial performance after adopting the case study and descriptive survey research designs, respectively. The researchers used the descriptive statistics analysis technique. Lyimo & Makilully (2022) used a sample size of 100 respondents, while Lucian (2022) used an unspecified sample size. On the contrary, the study by Mwangi (2019) found a negative effect of electronic cash register on financial performance and employed a descriptive design with correlation and regression analyses techniques. The

researcher used primary data and a sample size of 59 respondents.

The reviewed literature showed mixed results. The studies with a positive effect of electronic cash register on organizational performance used case study and descriptive survey research designs. The studies with a negative effect of electronic cash register on organizational performance used descriptive research designs. The studies that revealed a positive effect of electronic cash register on organizational performance were carried out in Tanzania, while the one with a negative effect of electronic cash register on organizational performance focused on private firms in Nairobi, Kenya. Therefore, this study seeks to establish the effect of the electronic cash register system on the financial performance of the County Government of Siaya.

- *Effect of Electronic Revenue Collection and Financial Performance*

To determine the correlation between electronic revenue collection and the financial performance of county governments, the federal government, or other government bodies, several scholars have conducted studies. Akoth (2019) conducted research to determine how revenue collection affects financial performance in county governments in Kisumu County. Assessing the effects of revenue collection on financial performance was one of the objectives of the study. During the research, the staff members Directorate of Revenue were the study's target population.

The main data were acquired by self-designed questionnaires, while the audited financial reports for the period between 2014 and 2018 helped in collecting the secondary data. The study revealed that there exists a positive and significant relationship between revenue collection and financial performance, meaning that increased units of revenue collection increased the financial performance to significant levels. Okiro (2015) argued that the revenue performance improved with the integration of an electronic system of remittance. This followed the outcomes of the research aimed at determining how electronic payment systems affect tax collection, with a focus on the City and County. During the study, the researcher collected data from secondary sources and utilized the descriptive research design and the target population formed by selecting eighteen departments of the City County that were functional in the period between 2013 and 2018. After analysing the data, the findings showed that the introduction of e-payment systems led to increased revenue collection performance in the county. The study further reveals a significant relationship between budget compliance levels and revenue collection performance, with increased budget compliance (from p-value = .000 to p-value = .041) upon the introduction of e-payment systems. It therefore means that having an e-payment system improves the efficiency of revenue collection and subsequent budget compliance by the county, hence increasing financial performance.

Madegwa, Makokha, & Namusonge (2018) also researched to examine the influence of automation of revenue collection on the performance of Trans Nzoia County Government. The researchers targeted a population of seven top-level managers, forty revenue clerks, and fifteen accountants, from which a sample of sixty-two respondents was used. Upon collection of data using semi-structured and self-administered questionnaires, descriptive and regression analyses were applied. It was determined that the online payment process, as a method of system automation, played a major role in improving the performance of the county to significant levels. Finally, the researchers recommended that there was a need for improvement of automation to enhance efficiency in revenue collection processes. The efficient revenue collection process positively correlates with financial performance in the county governments at large. Therefore, automation of revenue collection processes leads to enhanced financial performance of the county governments in terms of improved service delivery and implementation of budgeted projects at the ward levels.

From the above studies, it is evident that there are conflicting results on the relationship between electronic revenue collection and financial performance. On the contrary, the study by Muturi and Kiarie (2015) had negative results on the effect of electronic revenue collection on financial performance. The researchers applied the descriptive research design with regression and correlation analyses. They used primary data sources with the census as their sampling technique. Previous studies investigating the relationship between financial performance and electronic revenue collection have shown contradictory results, that is, positive and negative. Those studies that found a positive effect of electronic revenue collection on financial performance applied both descriptive and correlation methods with regression and correlation analysis. The studies that revealed the negative effect of electronic revenue collection on performance used descriptive research design with correlation and regression analysis. Most of the studies focused on county governments, but none were carried out in the County Government of Siaya.

III. RESEARCH METHODOLOGY

➢ *Introduction*

Chapter three highlights the procedures that were used by the researcher to accomplish the study. The major areas constituting the methodology include the research design, collection of data, procedures for data analysis, and methods of presentation of the findings.

➢ *Research Design*

Research design refers to the structuring of data collection and analysis to achieve the research objectives through empirical evidence that has been carefully determined (Chandran, 2004). This study adopted the correlational research design. This research design of study was used as it is suitable for relating two or even more variables. It also helps in the prediction of results that are primarily anchored on contributing variables that are attached to the individual variables. A study that has defined or set quantitative variables that are related to the problem can

effectively use a correlation research design to achieve its objectives.

➤ Study Area

The study specifically focused on the Siaya as County Government. Siaya County comprises diversified socio-economic activities ranging from trade, farming, mining, to fishing activities at the shores of Lake Victoria, thus a relatively large revenue base, hence a suitable choice for this study. Regionally, the County borders Kisumu, Vihiga, Busia, and Kakamega counties and has five sub-counties, including Ugenya, Alego-Usonga, Gem, Bondo, and Rarieda.

Siaya County has an area of 2,529.8km^2 and a population of 993,183 persons (Kenya National Bureau of Statistics, 2019).

➤ Target Population

Researchers refer to the target population as the entire group of people, animals, or objects that a researcher intends to generalize the results of the study upon and that poses observable similar features (Mugenda and Mugenda, 2003). 98 employees working under the Finance, a subset of accounting in the County Government of Siaya, formed target population of this study.

Table 1 Target Population and Sample Frame

No.	Designation	Population	Sample
1	Revenue Director	1	1
2	Ass. Revenue Director	1	1
3	Revenue Administrator	1	1
4	Revenue Accountant	1	1
5	Revenue Officers	2	1
6	Revenue Supervisors	20	15
7	Revenue Clerks	72	59
Total		**98**	**79**

➤ Sampling Methods and Sample Size

A sample refers to subsets or smaller parts of the total population that can be incorporated in a study (Orodho and Kombo, 2002). Techniques like random, systemic, stratified and cluster sampling techniques as well as their combination can be employed to determine the sample size. The stratified random sampling method was used during this research. Hayes (2019) defined stratified random sampling as a technique that entails the researcher dividing the study population into smaller sub-sets that are otherwise termed as strata. A 95% confidence level was used to determine the sample size. The error margin was set at 5% during the sample size calculation. The Taro Yamane (1967) formula was used to determine the sample size according to equation 1.

$$n = N/(1 + N(e)^2) \text{ -------------------------------------Equation 1}$$

Where:

n is the sample size.
N is the population under study. e is the margin error.

Therefore; $n = 98/(1 + 98(0.05)^2)$; $n = 79$

From the calculation, a sample size of seventy-nine out of the population of 98 staff from the Department of Finance in the County Government of Siaya was used. In addition, the pilot study involved 8 respondents, leaving 71 respondents carried forward to the main study.

➤ Data Collection Methods

• Sources of Data

The sources of data have been classified as primary and secondary. Primary data are information obtained directly from respondents in real time, while secondary data are information recorded in various media sources, including print and digital media. The research used the primary data, which were collected directly from the staff of the finance department, a subset of accounting using structured questionnaires with both open-ended and closed-ended questions.

• Collection of Data

Data collection can be defined as the process of assembling empirical evidence towards obtaining a new understanding of a prevailing situation in a bid to cure problems that prompted the study to be conducted (Kodhari, 2004). Data on variables including Point of Sale Machine, Electronic Cash Register System, and Mobile Payment System were collected from the finance department, a subset of accounting, of the County Government of Siaya. An introductory letter introducing the researcher as a student of the Master of Science in Business Administration was obtained from the Department of Finance and Accounting, Maseno University. The letter was taken to the Chief Officer, Department of Finance and Economic Planning, Siaya County, to obtain permission to collect data on own source revenue from 2018 to 2022 as well as administer data collection instruments to individual respondents.

• Data Collection Instruments

These are the tools used to gather and record information during the study such as interviews, surveys, questionnaires, tests, observation among others. This study used a structured questionnaire that were characterized with open and closed-ended questions to gather information. The researcher distributed the questionnaires to selected staff at the Finance Department.

- *Research Instrument Reliability*

Mugenda and Mugenda, 2003 defined reliability as the level that an experiment, measuring process or test bears similar outcomes following trials that are conducted repeatedly. The aim of carrying out reliability test was to allow the researcher detect inadequacies of the instruments and modify them before conducting the actual data collection. This was accomplished through the alpha coefficient reliability test that was enabled and the value of reliability determined for each objectives of the study. The Cronbach's coefficient alpha (Cronbach, 1951) helped in determining the internal consistency of the study questions. The alpha values for each variable under study that are above 0.70 are considered to be reliable while the values between 0.5 and 0.6 are poor and unacceptable respectively (Khalid, Abdullah and Kumar, 2012). The pilot study proved that the data was reliable for testing therefore the set questions were retained for continuity of the research.

Table 2 Reliability Test Results

Number of Questions	Number of Respondents	Cronbach's alpha
37	8	0.81

- *Research Instrument Validity*

The validity of the tools was achieved through conducting a thorough scrutiny of the questionnaire by the supervisor, a finance expert. Amendments were made after the scrutiny to align the instruments to the research objectives and remove unnecessary information in the questionnaires. The pilot study involving 8 respondents enabled a further validity test to fine tune the instruments that was used for the research.

- *Data Analysis and Presentation*

The research utilized regression and correlation analysis to determine the relationship between the independent and dependent variables. The quantitative analysis technique involving descriptive and inferential statistics was used to summarize and analyze the data during this study. The data was presented in tables, graphs, and pie-charts.

- *Model Specification*

For this study, it was tested whether electronic revenue collection has a relation with financial performance. Equation 2 provides the model of regression that was used for data analysis.

$$Y_i = \beta_0 + \beta_i X_1 + \beta_i X_2 + \beta_i X_3 + \varepsilon \text{ ----Equation 2}$$

Where;

Y -   Dependent variable (Financial Performance);

X -   Independent variable (Electronic Revenue Collection)

β_0 – Constant

β_i (i=1,2,3) - Regression Coefficients or change induced in Y by X

X_1 - Point of Sale Machine

X_2 - Electronic Cash Register System

X_3 - Mobile Payment System

ε -Error component

IV. DATA ANALYSIS AND INTERPRETATION

➤ *Introduction*

This section entails the analysis of data that was collected and the presentation of the findings on the effect of the relationship between electronic revenue collection and the financial performance of the County Government of Siaya. A total of 71 research questionnaires were dispatched to the respondents, out of which 64 were returned. This implies that the response rate was 90.14%. According to Mugenda and Mugenda (2008), a response rate of 70.0% and above is considered excellent in terms of representation of the study population. Therefore, the response rate met the threshold and was considered appropriate for the research.

➤ *Descriptive Statistics of Point-of-Sale Machine, Electronic Cash Register, and Mobile*

The study was to determine the relationship between electronic revenue collection and the financial performance of the County Government of Siaya. The selected respondents were asked to respond to questionnaires regarding the electronic revenue collection methods employed by the County Government of Siaya and their effectiveness. The responses were categorized into different levels of agreement or disagreement, ranging from 'strongly agree', 'agree', 'neutral', 'strongly disagree', to 'disagree'. These responses provided insights into how the respondents perceived the impact of the variables on various aspects of revenue collection and the challenges associated with their implementation. The 'strongly agree' and 'agree' categories indicate a positive perception, while the 'strongly disagree' and 'disagree' categories indicate a negative perception. Moreover, the 'neutral' represents a more undecided stance, which may remain open for discussion.

Table 3 Descriptive Statistics

	Use of a point-of-sale machine	Use of the mobile payment system	Use of an electronic cash register	Financial Performance
N Valid	64	64	64	64
Mean	1.667	2.23	2.04	2.17

Std. Deviation	1.008	1.248	1.09	1.167
Skewness	1.38	0.914	1.189	0.966
Std. Error of Skewness	0.299	0.299	0.299	0.299

Source: Research Findings (2023).

Table 3 provides the descriptive statistics for the use of Point of Sale Machines, Electronic Cash Registers, and Mobile Payment Systems in revenue collection within the County Government of Siaya. The mean provides an idea of the central tendency of the data and was calculated from the perceived responses by the respondents. From the table, the use of point of sale machines, mobile payment systems, and electronic cash registers each recorded means of 1.66, 2.23, and 2.04, respectively. This indicates that respondents generally had positive perceptions related to the use of these methods of electronic revenue collection. Skewness measures the asymmetry in the distribution of the data. The use of the point of sale machines, mobile payment systems, and electronic cash registers was skewed at 1.38, 0.914, and 1.189 and respectively. The skewness values for all these variables were positive, that is, greater than 0, indicating a right-skewed distribution. This suggests that for these variables, there is a larger proportion of respondents with more positive opinions and a smaller proportion with more negative opinions.

The standard deviation provides the amount of variation. Comparatively, the use of point of sale machines, mobile payment systems, and electronic cash registers recorded standard deviations of 1.008, 1.248, and 1.09, respectively. A higher standard deviation indicates more spread or variability in the responses. The use of the mobile payment system registered the highest standard deviations, while the use of the point of sale machine had the lowest. These statistics provide an overview of how respondents perceive various aspects of using point of sale machines in revenue collection, with most variables showing positive opinions or perceptions, although with varying degrees of agreement and variability.

➢ *Correlation Analysis*

To find out how the independent factors of electronic revenue collection affected financial performance, a correlation study was performed.

Table 4 Correlation Coefficients

Correlations	Financial performance	Use of a point-of-sale machine	Use of a mobile payment system	Use of an electronic cash register
Pearson Correlation	1.000	.995**	.861**	.899**
Sig. (2-tailed)	.000	.000	.000	.000
N	64	64	64	64

Source: Research Findings (2023).

Table 4 shows Pearson correlation coefficients between the use of different methods of electronic revenue collection (point of sale machine, mobile payment system, and electronic cash register) and financial performance. The data revealed that there exists a very strong positive correlation ($r=.995$, $p=.000$) between the use of point of sale machines and financial performance. This suggests that as the use of point-of-sale machines increases, financial performance also tends to increase significantly. The analyses also show that the electronic cash registers ($r=.899$, $p=.000$) as well as the mobile payment systems ($r=.861$, $p=.000$) have a strong positive correlation with financial performance, respectively. This indicates that as the use of mobile payment systems and electronic cash registers increases, financial performance tends to significantly improve. In comparison of the three independent variables with financial performance, the low p-

values that are close to 0.000 indicate that these correlations are statistically significant. The strong positive correlations suggest that there is a significant relationship between the variables. In particular, the use of a point-of-sale machine shows an exceptionally high correlation with financial performance.

➢ *Regression Analysis*

During the examination of the effect within predictor elements, the research used the multiple regression analysis by application of the SPSS software. The researcher carried out an analysis of the existing link among the variables, including the dependent variable, that is, the financial performance, and independent variables that included point of sale machines, mobile payment systems, and electronic cash registers.

Table 5 Model of Effect of Electronic Revenue Collection

Correlations				
		Use of the point of sale machine	Use of a mobile payment system	Use of an electronic cash register
Financial performance	Pearson Correlation (R)	.995**	.861**	.899**
	R Square	.990	.741	.808

Adjusted R Square		.986	.738	.803
Std. Error of the Estimate		.022	.040	.047
Sig. (2-tailed)		.000	.000	.000
N		**64**	**64**	**64**

Source: Research Findings (2023).

The results in Table 5 show the adjusted R Square for the independent variables. The strong positive correlation (r=.995, p=.000) suggests a very high linear link exists between the financial performance and the use of a POS machine. The R Square value of (r=.990, p=.00) indicates that 99% of the recorded financial performance is attributed to the use of a POS machine. The positive correlation (r=.861, p=.000) suggests a strong linear tie between financial performance and the use of a mobile payment system. The R Square value of (r=0.741, p=0.00) proves that a variation of 74.1% recorded on financial performance originated from the utilization of a mobile system of remittance. The positive correlation (r=0.899, p=0.000) suggests a strong linear relationship between the use of an electronic cash register and financial performance. Similarly, the R Square value of (r=.808, p=.000) suggests that a variation of 80.8% found in financial performance resulted from the use of an electronic cash register.

In summary, all three technologies (point of sale machine, mobile payment system, and electronic cash register) show strong positive correlations with financial performance, and the relationships are statistically significant. The high R Square values demonstrate that a large proportion of the variance in financial performance can be linked directly to the use of these technologies. The ANOVA table containing the regression model with the dependent variable formed by financial performance and the predictors being the use of point of sale machines, mobile payment systems, and electronic cash registers is shown in Table 6.

Table 6 The ANOVA Table

ANOVAᵃ						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.342	3	8.781	10.252	.000ᵇ
	Residual	51.392	60	.857		
	Total	77.734	63			
a. Dependent Variable: Financial performance						
b. Predictors: (Constant), Using Point of Sale machine, mobile payment systems, and Electronic Cash Register						

Source: Research Findings (2023).

The information on the complete fit of the regression model is provided by the ANOVA table. The Sum of Squares (SS) in this model represents the variation explained by the model. Looking at the data, the F-statistic was 10.252, and the p-value (Sig.) was very low (0.000). This implies that the model has statistical significance; therefore, the regression model, with the predictors (constant, use of point of sale machines, use of mobile payment systems, and use of electronic cash registers), is statistically significant (p < 0.001). Thus, the model, as a whole, remains appropriate for explaining the variation in financial performance. The predictors collectively explain a significantly greater part of the total financial performance's variance. The results from the multiple linear regression analysis are presented in Table 7, with financial performance being the dependent variable. The use of various technology systems (point of sale machines, mobile payment systems, and electronic cash registers) formed the independent variables.

Table 7 Regression Analysis

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.856	.524		5.449	.000
	Use of a point-of-sale machine	.886	.022	.916	41.201	.000
	Use of the mobile payment system	.093	.040	.087	2.323	.024
	Use of an electronic cash register	.197	.047	.174	4.178	.000
a. Dependent Variable: Financial performance						

Source: Research Findings (2023)

Substituting the data from the table into equation 2 to form a new regression equation as provided in equation 3.

$$Y_i = 2.856 + 0.886X_{1i} + 0.093X_{2i} + 0.197X_{3i} \quad \text{-----Equation 3}$$

The projected value of the dependent variable, that is, the financial performance, is represented by the constant when the entire set of independent variables sums up to zero. Consequently, the constant is 2.856, with the statistical results showing that it is significant at $p < 0.001$. The coefficient for the "use of point of sale machine" variable was 0.886. This implies that for each unit increase in the use of point-of-sale machines, the financial performance is expected to increase by approximately 0.886 units. The value for Beta of 0.916 suggests a strong positive association between the use of point of sale machines and the financial performance of the county.

The coefficient for the "use of mobile payment system" variable was 0.093. This suggests that for each unit increase in the application of mobile payment systems, it is expected that the financial performance increases by approximately 0.093 units. The Beta value of 0.087 indicates a weaker, but still statistically significant and positive association between the use of mobile payment systems and the financial performance of the County Government of Siaya. The "use of electronic cash register" variable recorded a coefficient of .197. Implying that for a unit increase in the use of electronic cash registers, the financial performance is expected to increase by approximately .197 units. The Beta value of .174 suggests a moderately strong positive correlation between the electronic cash registers and the County Government of Siaya's financial performance. Generally, the three independent variables are statistically significant indicators of financial performance in the County Government.

V. DISCUSSIONS

The use of point-of-sale machines, mobile payment systems, and electronic cash registers has been acknowledged as the electronic methods of revenue collection used by the County Government of Siaya. These methods were all found to be significantly correlated with financial performance, aligning with the study's specific objectives. Looking at the findings of the study on the effect of POS on financial performance, it was revealed that the findings were consistent with previously reviewed studies by Cote (2015), Chepchirchir (2019), and Silago & Mkumbo (2021). Cote (2015) and Chepchirchir (2019) found a positive effect of point of sale machines on organizational performance by employing the descriptive research design with descriptive and inferential statistics analyses. Silago & Mkumbo (2021 examined the role of POS machines in the collection of OSR and the financial performance of Sumbawanga.

Municipal Council, Tanzania. The researchers used a systematic random sampling technique and collected data using interviews and questionnaires. The inferential and descriptive statistics via SPSS helped to analyse quantitative data. A positive correlation between the use of POS machines and financial performance was revealed. Furthermore, it was

the recommendation of the paper that the county enhance the usage of the POS machines through qualified personnel and training to further enhance their financial performance. It is worth noting that the studies aligned with this study revealed that the use of POS positively influenced the financial performance. However, Hassan et al. (2022 and Adeoti (2013 revealed inconclusive results on the effect of point of sale machines on merchants and bank employees. The researchers used quantitative and random sampling as sampling techniques, and primary data and secondary data, respectively. The findings of this were inconclusive; therefore no relationship with the current study's results.

The study outcomes on how the use of a mobile payment system affects financial performance were aligned with the previously reviewed studies. Research by Jepkoech (2021), Nyaga (2016), Chepkoech, Gichana, & Agong (2022) revealed that the correlation between mobile payment systems and financial performance was positive by use of correlation, descriptive, and cross-sectional research designs, respectively. There was an agreement between the reviewed studies and the current study that revealed that the use of a mobile payment system positively affected the financial performance. Contrastingly, the study by Hossain (2019) revealed that the correlation between financial performance and the mobile payment system was negative. The researcher adopted an exploratory research design and structural equation modelling for analysis. The study findings contrast with those of this study.

The use of an electronic cash register is a form of electronic tax collection method adopted by the County Government of Siaya. Various previously done investigations correspond to the outcomes of the current paper, including studies of Lucian (2022) and Lyimo & Makilully (2022). Lyimo and Makilully (2022) determined how the electronic cash registers affected the collection of tax and the subsequent financial performance of the Tanzania Revenue Authority. They found out that electronic cash registers and financial performance were positively related. These studies were aligned with the current study's findings, which determined that the electronic cash register and financial performance were positively correlated.

However, the studies by Mwangi (2019) were inconsistent, as the study showed that electronic cash registers were negatively correlated with financial performance. This researcher employed a descriptive design with correlation and regression analysis techniques. Furthermore, Bekele (2020) demonstrated no relationship between electronic cash register and financial performance after adopting regression and percentage methods of analysis. This study's findings show that electronic revenue collection enhances efficiency and accountability in revenue collection. The findings also show that knowledge in IT is important in the efficient functioning of the electronic revenue collection process, thus the need for acceptance of the technology and training requirements by the existing staff. This is according to the TAM concept, which suggests that the willingness of an individual's perception in utilizing the information system determines their behavioural patterns and intentions.

VI. SUMMARY FINDINGS

➢ *Study Summary*

The results of the study showed that the regression equation was statistically significant, indicating that the use of Point of Sale (POS) machines, Mobile Payment Systems, and Electronic Cash Registers (ECRs) explained differences in the financial performance of the Siaya County Government. The findings of the regression showed that POS machines were most influential on financial performance at a coefficient of 0.886, and then ECRs, at a coefficient of 0.197, followed by Mobile Payment Systems that showed a positive effect, though weaker at a coefficient of 0.093. The correlation analysis also verified the significant and strong positive relationships between the independent variables and financial performance, with correlation coefficients of 0.995 for POS machines, 0.899 for ECRs, and 0.861 for Mobile Payment Systems.

VII. CONCLUSION

The study findings demonstrate that electronic systems i.e. Point of Sale machines, Electronic Cash Registers, and Mobile Payment Systems, have improved financial performance. They have contributed to improved efficiency, reduced revenue leakages, and strengthened the delivery of services to citizens.

Findings also show that while Siaya County has made notable progress in automating its revenue collection, gaps remain in effectively utilizing these systems. It is marred by some challenges like inadequate infrastructure, limited technical capacity, and partial adoption across departments hinder the full realization of potential benefits. Addressing these issues will require consistent investment in digital infrastructure, regular training of staff, and enhancing strong policy support. Lastly, for Siaya County, sustained commitment to automation, transparency, and inclusivity in revenue administration will increase own-source revenue and promote efficient service delivery, improved development outcomes, and stronger public trust in county governance.

VIII. RECOMMENDATIONS

➢ *The Study Recommends;*

- The County should enhance revenue collection by making greater use of POS machines.
- Adoption of Electronic Cash Registers (ECRs) should be prioritized to strengthen revenue collection.
- The Mobile Payment System ought to be integrated into the County's revenue collection processes.

IX. LIMITATIONS

Unfortunately, various limitations were encountered during the study. One of them was that it was difficult to obtain data as some respondents took a longer time to complete and bring back the questionnaires, citing their occupied schedule in the field, while others did not complete filling in all the required data. Another limitation was that it was difficult to reach the revenue clerks to submit and collect questionnaires. The revenue clerks, who were the majority and key targeted group during research, were scattered in various locations in Siaya County; the researcher had to travel to locate them, thus consuming time and resources.

➢ *Areas for Further Research*

- Further research focusing on other counties should be conducted to allow a comparative analysis with the current study.

- Also, a study should be conducted to investigate how political influence, laws, and policies affect the electronic revenue collection systems in relation to the performance of the governments at the lower level. This is because counties have Finance Bills, bylaws establishing revenue streams, and the senior positions in the county executives are highly politicized.

➢ *Author Contributions*

- Percila Achien'g Onduru: Conceptualization; Investigation; Methodology; Data curation; Formal analysis; Writing-original draft; Project administration. The author was the principal investigator of the study within Siaya County. The author collected, analyzed data, and drafted the first version of the manuscript.

- Prof. David Oima: Supervision, editing, and final manuscript approval.

All authors have read and approved the final Manuscript and contributed significantly to the study.

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