

**IMPACT OF REVENUE COLLECTION SYSTEMS ON REVENUE
COLLECTION LEVELS IN COUNTY GOVERNMENT OF BOMET.**

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2020

DECLARATION

Declaration by the Student

This research project is my original work that has not been presented to any other examination body. No part of this research should be reproduced without my consent or that of KESRA

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HBD336-C016-4220/2016

Declaration by the Supervisor

This project and has been submitted with my authority as the college supervisor:

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DEDICATION

I wish to dedicate this project to God Almighty my creator, my pillar of strength, my source of wisdom, insight and knowledge. He has seen me through the toughest of days and without His grace this would not have been possible. I also dedicate this to my beloved wife who has been my biggest source of motivation during this quest. To my parents and siblings who have accorded me with unconditional support during this period may God bless you all abundantly.

ABSTRACT

The collection of revenue at both national and county governments has been a big challenge and remains a major obstacle in national government and county governments in achieving their revenue collection targets and economic goals. The situation in Kenya in regard to revenue maximization by county governments has never yield a targeted result. It is for this reason that the current study was conducted to evaluate revenue collection systems and revenue collection levels with a focus on Bomet county government. The target population comprised of 240 finance and revenue officers from 5 Sub-County Offices in Bomet County. The study was guided by systems theory systems, transaction cost theory and technological determinism theory. The study adopted explanatory research design. Primary data was captured through use of closed ended structured questionnaire on five-point Likert scale. Stratified random sampling technique was employed to collect sample from 147 respondents. Data analysis was done using Statistical Package for Social Scientists (SPSS). Descriptive and inferential statistical analysis was employed. The results of the multiple regression analysis revealed that for every use of Automated Revenue Systems, there is an increase in the Revenue Collection Levels in Bomet County by 0.643 unit currencies ($\beta_1=0.643$, $p= 0.000$). The results also revealed that for every use of Manual Revenue Systems, there is an increase in the Revenue Collection Levels in Bomet County by 0.239 unit currencies ($\beta_2=0.239$, $p= 0.000$). Thus in comparison to the manual system, the study concluded that automated revenue systems have a positive and more significant influence on revenue collection levels in Bomet County. Based on the study findings, the study recommended that Bomet County government should adopt automated revenue systems. The study suggested that future research should be conducted on other determinants of revenue collection levels in Bomet County.

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ABBREVIATIONS AND ACRONYMS

CBB	Central Budgeting Bureau
GDP	Gross Domestic Product
ICT	Information and Communication Technology
KNBS	Kenya National Bureau of Statistics
KPI	Key Performance Indicators
LAIFOMS	Local Authority Integrated Financial Operations and
LHPPD	Lands, Housing and Physical Planning Department
SDG	Sustainable Development Goals
TCT	Transaction Cost Theory
CGoB	County Government of Bomet.
CPA	Certified Public Account.
IFMIS	Integrated Financial Management Information System
CBB	Central Budgeting Bureau
KGDP	Gross Domestic Product
ICT	Information and Communication Technology
KNBS	Kenya National Bureau of Statistics
KPI	Key Performance Indicators
LAIFOMS	Local Authority Integrated Financial Operations and
LHPPD	Lands, Housing and Physical Planning Department
SDG	Sustainable Development Goals

OPERATIONAL DEFINITION OF TERMS

Automation refers to the application of electronic devices used in revenue collections.

Revenue refers to the money collected by counties governments from all their sources of revenues.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The national and county governments all over the world raise revenues to finance public expenditure. National government in developing countries mainly receive their revenues from taxation whereas County government receives revenue from various sources namely demand notices, license fee, fine fee, land rates among others (Lymer and Oats 2010). According to Cakmak, Benk, & Budak, (2011) public revenue collection informs the fiscal policy and administration of a county's economy. Revenue collection should comply with best practices of equity, ability to pay, economic efficiency, convenience and certainty (Visser & Erasmus, 2005). Fjeldstad and Heggstad (2012) found that political and administrative restrictions are the major constraints facing county revenue mobilization.

Majority of revenue administrations in Africa and the world at large have adopted automated systems in replacement of manual systems. In Kenya itax and integrated customs management systems were instituted by Kenya Revenue Authority as part of reforms. The manual based systems of revenue collection were attributable to problems of tracking fraud or rogue revenue collectors (Cobham, 2005). The manual systems were also characterized by excessive wastage of the resources and overheads needed to monitor and control them as well as delayed customer service (Prichard, 2010). Automated revenue collection systems were first introduced in USA, and then spread to other developed and developing countries (UNCTAD, 2008). Automated revenue collection systems have the ability to increase revenue collection levels (Gideon & Alouis, 2013). Haughton and Desmeules (2001) confirmed that revenue

administration automation ensures reduced clearance time, curb tax evasion and effectiveness of revenue collection (de Wulf & Sokol, 2005).

According to Kamolo (2014), County governments in Kenya depend more on National government for revenue to finance their expenditures. Manyasia 2012 found that most Counties are faced with budgetary challenges to meet their set obligations, such as payment of wages and other financing development programs since the revenue collection has been wanting. To improve revenue collection, various county governments have automated their revenue collection systems.

Bomet County Initiated Information and Communication Technology (ICT) transformation road map 2014 to 2017 aimed at utilizing technology to improve citizen service delivery, increase efficiency and enhances revenue collection levels (Ambali, 2009). Bomet Country administration transformed its system from Local Authority Integrated Financial Operations Management System (LAIFORM) to Integrated Financial Management Information System (IFMIS). This is intended to enhance revenue collections from multiple revenue streams including single business permits, market stalls, parking fees and land rates to achieve real time transaction reports on a secure central server accessible on web at any time by the authorized persons (UNCTAD, 2008). This was a transformation from manual system to automated system.

According to Muriithi and Moyi (2003) study, manual system of revenue collection resulted in low revenue collection compared to automated system of revenue collection. Tetteh (2012) argues that the type of revenue collection systems that are in place determine level of revenue collected. Awiata (2010) and Gachanja (2012) observed that in Kenya, lack of commitment and supervision to automated revenues collections is the major hindrance in realization of good revenue collection. This study

is motivated by the above background to conduct a comparative evaluation of automation and manual systems on revenue collections by Bomet County Government (CGoB).

1.1.1 Revenue Collection Systems.

Over the years Kenya has been relying on manual systems until 1998 when IT emerged in provision of public services (Moyi & Ronge, 2006). In CGoB revenue collection was manual based until the year recently when the Bomet county administration adopted automated system IFMIS in replacement of the manual system LAIFOM and IFMIS.

Manual tax system has had its many hitches like; tax evasion and avoidance, errors in taxpayer payment and tax return details, long queues that led to high financial losses to the government hence low revenue collections (Kenya Revenue Authority, 2014).

Majority of government agencies in Kenya have adopted integrated revenue collection and monitoring system for effective and efficient administration of revenue (Amin, 2013). With this system, both national and county governments can mobilize additional revenue through access to more financial resources (Kondo, 2015). This automation has brought more efficiency and consistency in revenue collection.

1.1.2 Revenue Collection Levels.

Across the world, institutions are governed by revenue set target either monthly or annually. The results are dependent on the result of organization's revenue collection system being efficient and effective (Kamolo, 2009). Consolidation of the tax collection functions reduces redundancy, significantly increase collections, and standardize the collections process (KRA, 2016). According to Moore (2004) and Isaac and Lilian (2010) governments need to increase its fiscal depth without incurring costly recurring overheads (Marti, Wanjoh, Magutu, & Mokoro, 2010).

Automated systems are capable of increasing revenue collection levels for governments; resulting to higher revenue amount (Maisiba & Atambo, 2016). This would in turn support and sustain government projects leading to poverty reduction and wealth creation.

1.2 Statement of the Problem

Public revenue collection is an integral component of fiscal policy and administration in any economy because of its influence on national and county government operations. It is the fuel of every government as it is the main instrument through which government funding is ensured. Revenue collection should comply with best practices of equity, ability to pay, economic efficiency, convenience and certainty (Visser& Erasmus, 2005).

In Kenya both national and county governments have been experiencing fiscal deficit as a result of not meeting their revenue targets (Manyasi, 2012). The missing of revenue targets has been partly attributed to loopholes in the manual systems that has created avenues for corruption and mismanagement of revenues; Tetteh (2012) argued that the type of revenue collection systems in place determines the level of revenue collected. To enhance tax administration, a number of county Governments have rolled out modernization of their revenue collection systems from manual to automated systems. However, they are still using both manual and automated revenue collection systems as automation is not fully operationalized. For instance, CGoB has automated its revenue collection system using LAIFOMS.

Several studies have been conducted to review revenue collections systems and their revenue collection levels. For instance, Isaac and Lilian (2010) study examined the relationship between automation and revenue collection. Sharma & Anderson, (2014) examined public participation in county government governance in raising revenues.

Kariuki, Nzioki, & Murigu, (2009) survey looked at revenue enhancement strategies by local authorities. Most of these studies have been generalized and have not reviewed the adoption of automated revenue systems by Bomet County administration. It is for this reason that this study was conducted to evaluate revenue collection systems and revenue collection levels in Bomet county government.

1.3 Objectives of the Study

The general objective of this study was to conduct a comparative evaluation of revenue collection systems and revenue collection levels in Bomet county government

The specific objectives of the study were:

- i. To establish effect of use of automated revenue collection systems in revenue collection by Bomet county government.
- ii. To establish effect of use of manual revenue collection systems in revenue collection by Bomet county government.
- iii. To Establish the challenges facing Revenue System in County Government of Bomet

1.4 Research Questions:

H01: Automated revenue system has no significant effect on revenue collection levels in Bomet County Government.

H02: Manual revenue system has no significant effect on revenue collection levels in Bomet County Government.

1.5 Scope of the study

The study sought to examine effects of automation and manual revenue systems on revenue collection levels by Bomet county government. It was restricted to efficiency of revenue collection, convenience of revenue collection and financial malpractices by revenue collector. The unit of analysis was sub counties of Bomet County Government-Kenya.

1.6 Importance of the Study

The findings of this study will be useful to Bomet county government in improving its revenue collection levels. The study will also be useful in reviewing of revenue collection system as an operations strategy in enhancement of revenue collection.

The study will also benefit academicians and future researchers and will add to the already existing knowledge on application of integrated revenue collection system as an operations strategy in revenue collection.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The section presents the theoretical foundation of the study, empirical review by earlier researchers, and critic of those studies, research gaps and conceptual framework of the study.

2.1 Theoretical Foundation of the Study

2.1.1 Systems Theory Systems

Theory was developed by Talcott Parsons in 1950. This theory states that systems are made up of various parts which are dependent on each other and relate to each other, sometimes in very complex and at times in simple ways. Most organizations are open systems meaning that they are dependent on the external environmental factors for survival (Drucker, 1988). The systems can either be closed or open and are a series of organizational activities working together for the aim of attaining the organization objectives (Gerson, 2007). Systems theory has two assumptions, the first is the epistemological assumptions which states that groups will use processes and their resources within their environment to develop the desired outputs and the second is the ontological assumptions stating that the theory is deterministic, because the environment and the resources provide the processes that are used to gain the desired outputs. According to Rono (2016), flow of information and material from any part of the system must be consistent to the input necessities. The organization gets inputs from the outside world which it then transforms into output and takes it back to the world for use. According to McAuley, Duberly and Johnson (2007) Systems Theory was proposed as an approach to understanding the fundamental nature of the systems. From time to time, suffer disturbances, as the disturbances occurs the subsystems of

the organization change in order to adjust to the new circumstances. They do so in order to maintain the system as a whole. Koontz and Weihrich (2009) found that organizations are systems which it belongs, the economic system and the society. Hence, the enterprise receives inputs then transforms them and exports the output to the environment.

Systems theory was relevant to this study in that information system has a central database which is the bigger system from which other applications such as the human resource amongst other application emerge. It clearly demonstrates the relationship between an information systems and revenue collection level; that gives smooth conversion process of inputs to outputs. This theory seeks in totality to help in seeing the problems of the counties revenue collection in a wider perspective.

2.1.2 Transaction Cost Theory

The theory addresses the costs that companies incur in the processes of collecting revenues and other forms of commitments. Khan and Hildreth (2004) stated that transaction cost theory is the most applicable in financial management. Khan, Amos (1979) applied transaction cost theory when they argued on the 19th century fixed rent contractors that were dominant when revenue collectors agreed payments based on the entire revenue collected. In both studies, the issue of financial fraud towards collections can only be reduced by Automating revenue collections. Transaction cost theory has been criticized because it ignores the role of differential capabilities in structuring economic organization; neglected power relations, trust and overlooked evolutionary considerations. The application of Automation Revenue collection technology would eliminate and reduce a number of revenue collection agencies and contractors, thus leading to efficient and effective, convenient and economical revenue collection by County Governments.

2.1.3 Technological Determinism Theory

Technological determinism (TD), Wood (2004) simply put, is the idea that technology has important effects on people's lives. This theory according to Wood (2004) recognizes that technological changes, has a major impact on the way people run their businesses. In the study it was recognized that the use of computers as one of the technologies which has promoted the ability to multitask in many responsibilities. The Automation of revenue collection is the new approach, that County Governments are applying in revenue collections to increase efficiency and reduced financial fraud. The technology is capable of dictating revenue collectors' behaviors' and consequently diminishes the cases of fraud, that occurs when manual revenue collections are applied. Although, the deterministic model of technology is widely propagated in society, it has also been widely questioned. When technology was perceived as being outside society, it made sense to talk about technology as neutral. Yet, this idea fails to take into account that culture is not fixed and society is dynamic. When technology is implicated in social processes, there is nothing neutral about society. This confirms one of the major problems with technological determinism and the resulting denial of human responsibility for change. There is a loss of human involvement that shape technology and society.

2.2 Empirical Review.

2.2.1 Manual Revenue Collection Systems and Revenue collection levels

According Cobham, (2005) study, manual based systems of revenue collection are attributable to problems of tracking fraud or rogue revenue collectors. The manual systems suffered from high costs of operation, fraud, leakages among other challenges (Fjeldstad & Heggstad, 2012). Bahiigwa et al. (2004) studied the rural taxation in Uganda which was manual based and recommended that manual revenue collection in

Uganda required upgrading to have any serious implications on growth, income distribution, and local government revenue growth.

According to UNCTAD (2008), there is much forgery and manipulation of data through the use of hand written receipts and invoices by county government. Easy loss of data provoked the county government to have a need to change to automation revenue system; in order to increase efficiency and effectiveness in revenue collection (UNCTAD, 2008).

2.2.2 Automated Revenue Collection Systems and Revenue collection levels

Kirimi, (2015) conducted a study on the Influence of Automation of Revenue Collection processes on organization performance in Meru County, Kenya. The study established that online process of automation of revenue collection influence performance to a great extent. The study found out that online payment process of automation of revenue collection processes influence performance in Meru County. This study therefore recommended that: the investment in new technology acquired for this purpose to be of high quality and maintained regularly and that the County should make a full migration to online payment process of all large transactions.

Oduor et al (2016) did a study on Automation revenue collections in Kiambu County, focused on impact on adoption of revenue collection systems and its effects on service delivery. The result of the study for the period of May to June 2014 showed an improvement in revenue realization and granular visibility of county revenues and trends. There was an increase and improvement in revenue collections and that respondents were satisfied with the use of Automation system in revenue collections though there was need for further training on the usage of the system.

Owino, (2017) examined the effects of innovation in revenue collection processes on organization performance of Nairobi County Government. The study found out that

online billing process to a great extent improved revenue collections and organization performance. Basing on the findings of the study and conclusions, the study recommends that the management of Nairobi County should implement and maintain proper online receipting process. The study left gaps since it dealt with the effects of innovations in revenue collections, while the current study dealt with automation outcomes Wanyoike and Mutua (2016) did a study on Automating revenue collection process in Kenya. In the case of Kiambu County; Otwani, Muturi and Wandera, (2016) examined factors affecting revenue collection efficiency in County Governments, a case study of Trans-Nzoia County. The study concentrated mainly on the policies and level of revenue collected and not efficiency, convenience and reduced financial fraud. The study revealed that benchmarking strategy through proper planning, budgeting and supervision results in better revenue collections and improved performance.

The study concludes that, in Kisii County Government, there is potential to collect more revenue if it improves its supervisory systems, fully utilize the computerize system and ensure set targets are being achieved. The study recommends that for computer system to work efficiently, the system should be programmed to remind the collection officers on due dates, supervisory system to be improved and proper planning through budgeting to enhance revenue collections.

Political goodwill, appropriate change management and user acceptance are key to successful implementation of automated revenue collection in Counties. Karori and Maturi, (2016) examined the influence of revenue collection efficiency on the operational performance. Kisii County used a case study and revealed that benchmarking strategy through proper planning and budgeting influences revenue collection which affects operational performance and finally the Supervisory systems influence revenue collection and in turn influences operational performance. The study

concludes that Kisii County Government has the potential to collect more revenue if it improves its supervisory systems, fully utilize the computerized systems in place and ensure that targets are being achieved. The study recommends that for computerized systems to work efficiently the systems should be programmed to remind the collection officers on due dates, Supervisory systems should be improved and proper planning through budgeting to enhance revenue collection. Basing on the findings 34 of the study concludes that online billing process affects organizational performance. The study found that automation of revenue collection processes enables fairer and less corrupt tax systems.

Maina (2013), examined the factors affecting revenue collection in local authorities in Kenya (A Case of Municipal Council of Nyeri). The study found that LAIFOMS was picked by most respondents as the factor with the highest influence on revenue collection while according to the study -participants, government policies had the least influence on revenue collection.

The study concluded that the revenue collectors appreciated the role of information technology in ensuring effective revenue collection however the availability and accessibility was a hindrance to effective LAIFOMS implementation. Among others, the study recommended that the effectiveness of the LAIFOMS can be strengthened by increasing the availability of computers and adding more staff to ensure efficiency in revenue collection.

Haughton and Desmeules (2001) study confirmed that revenue administration automation ensures reduced clearance time, curb tax evasion and effectiveness of revenue collection. According to de Wulf & Sokol, (2005) study automation gave accurate, consistent and retrievable information to authorized staff.

Haughton and Desmeules, (2001) study established that revenue administration automation has a positive impact on the cost of tax administration, automation and effectiveness of revenue collection. Tetteh (2012) study argues that the type of revenue collection systems that are in place determine level of revenue collected.

Isaac and Lilian (2010), Peled (2000) and Zineldin (2007) study established a positive relationship between automation and revenue collection. In Africa, Tetteh (2012) focused on revenue collection automation in Ghana.

According to (Kondo, 2015) study, with an automated revenue collection system, both national and county governments can mobilize additional revenue through access to more financial resources.

Mitei Rono (2014) study focused on the entire county of Bomet focusing on a Finance Revenue department in Bomet County. The study established that Bomet County is majorly a rural setup hence; contextual difference in revenue automation.

2.3 Research Gap

A good number of studies have been done on revenue collection automation but these studies have been generalized. This study therefore seeks to fill this gap by examining the effects of automation and manual systems on revenue collections levels in Bomet County Government Kenya.

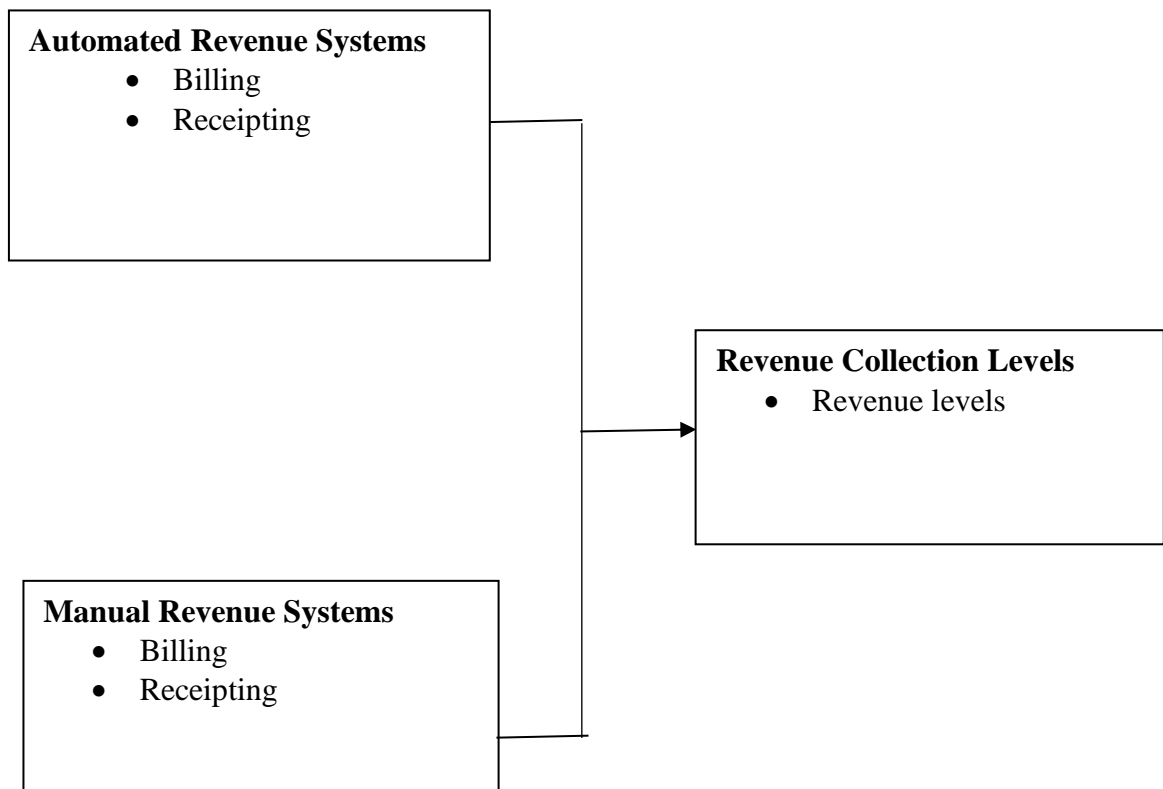
2.4 Conceptual Framework

The study adopted the following conceptual framework in determining a comparative evaluation of revenue collection systems and revenue collection levels in Bomet county government.

Figure 2.1 Conceptual Framework

Independent Variables

Dependent Variable



The independent variables were automated revenue systems and manual revenue system. The dependent variable was revenue collection levels.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the overall methodology that was used in the study. It describes the research design, population of the study, sampling procedures and data collection methods, data analysis and interpretation.

3.2 Research Design

Research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose (Kothari, 2004).

The study employed explanatory research design. Quantitative design was also adopted. Quantitative design involves the use of discrete numerical data in analysis.

3.3 Target Population

According to Cox, (2013), target population in a study is the entire group of items or individuals having common observable characteristics with information that the researcher is interested in. The target population comprised of 240 finance and revenue officers from 5 Sub-County Offices in Bomet County. The aforementioned employees are directly or indirectly involved in revenue collections and as such are presumed to be on a vantage position to understand the factors that influence optimal revenue collection by the County Government.

3.4 Sampling Design

A sampling design refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Sample design may as well lay down them number of items to be included in the sample. The sampling technique applied in this study was stratified sampling using proportional allocation. Under stratified sampling the population is divided into several sub-populations (strata) which are individually more

homogeneous than the total population. Then we select items from each stratum to constitute a sample. Since each stratum is more homogeneous than the total population, the method yields more precise estimates for each stratum and by estimating more accurately each of the component parts, we get a better estimate of the whole.3.5 Sample size.

A sample is a part of the target population, carefully selected to represent that population (Dell, Holleran, & Ramakrishnan, 2002). This study assumed a 95% confidence interval and error level of 0.05. The sample size (n) was calculated by using the Yamane method:

$$n = \frac{N}{1+Ne^2}$$

Where,

n = Sample size, N = population size, and e = Margin of error (MoE), $e = 0.05$

The sample was then divided into five individual strata; n_1 , n_2 , n_3 , n_4 and n_5 using proportional strata allocation to obtain proportional representation, which formed the focus of the study. The sample size was therefore calculated as elaborated below.

$$n = \frac{240}{1+240(0.05)^2}$$

$$n = \frac{240}{1.6}$$

$$n = 150$$

Table 3.1: Sample Size

Sub-County	Target Population	Sample Size
Chepalungu Sub-County	60	37
Bomet East Sub-County	43	27
Bomet Central Sub-County	52	33
Sotik Sub-County	43	27
Konoin Sub-County	42	26
Total	240	150

Source: *Bomet County Government*

3.6 Data Collection Instruments

Data collection is a means by which information is obtained from the selected subjects of an investigation (Bagaka and Kobia (2010). It is a process by which the researcher collects the information from all the relevant sources to find answers to the research problem, test the hypotheses and evaluates the outcome (McMillan & Gogia, 2017). Primary data was used in the study. Through ‘drop and pick later’ method, a questionnaire for data collection was administered. The questionnaire comprised on four parts named A to D. Part A contained question that captured the demographic information; Part B contained questions on automated revenue systems; Part C contained questions on manual revenue systems and Part D had questions on revenue collection levels.

3.6.1 Type of Data Used.

In my Research project, PRIMARY data was used. This is data collected from a First-hand resource that is from revenue Officers who were my source of information. This was achieved through Questionnaires that had tables of Linkert Scale.

3.7 Data Reliability

Reliability is the degree to which measures are free from error. For this study, Cronbach's alpha coefficient value was computed. A Cronbach's alpha value of 0.7 and above, proves that the research instrument used is reliable. This study adopted a coefficient of 0.7 as the benchmark for reliability

3.8 Validity

Polit and Hungler (1993) explain validity of an instrument to mean the degree to which an instrument measures what it is intended to measure. Quite a satisfactory mix of questions will be included in the questionnaires to achieve validity. Validity will also be determined from the point of research question and the several questionnaires being asked to the respondents.

3.9 Data Analysis and Presentation

The data collected were subjected to qualitative and quantitative analysis. The data captured were cleaned, sorted, tabulated and fed into the Package for Social Sciences (SPSS) for analysis. Descriptive statistics such as mean, frequencies and percentages were computed from SPSS. Inferential statistical analysis correlation and multiple regression analysis were also computed using SPSS. The results were presented in the form of tables, pie charts and graphs.

3.10 Measurement of Variables

Table 3.2: Measurement of variables

Variable	Variable Type	Indicators	Analytical tool used
Revenue collection levels	Dependent	<ul style="list-style-type: none">• Revenue targets	Descriptive statistics, multiple regression
Automated revenue systems	Independent	<ul style="list-style-type: none">• Billing• Receipting	Descriptive statistics, correlation, multiple regression
Manual revenue systems	Independent	<ul style="list-style-type: none">• Billing• Receipting	Descriptive statistics, correlation, multiple regression

Source: Research, 2020

3.11 Ethical Considerations

Ethical issues in research involve making a judgment about right and wrong behaviour (Kumar, 2011). Before data collection, permission to carry out research was sought from the relevant authority. The researcher also ensured that confidentiality of the information obtained was used for the purpose of the study. Appropriate credit was given to all parties who contributed to the research.

3.12 Models Applied

3.12.1 Inferential Analysis.

This involved the use of Regression Analysis, Correlation Analysis and ANOVA which is the Analysis of Variance. These are the models that were used to generate and provide information that fulfilled the description of the data given.

MODEL APPLIED DIAGRAM

INFERENCEAL STATISTICS	
Regression Analysis	Dependence of Variables(Adjusted R-Square)
Correlation Analysis	Used Pearson Analysis
Analysis of Variance (ANOVA)	To check Significance of STATISTICS (By Use of Constant and Beta)

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0 Introduction

This chapter encompasses analysis of data, findings and the interpretation of the results.

The findings are presented in form of tables and figures

4.1 Response rate

From the sample size of 150 respondents, 147 actually responded yielding a response rate of 98%. This was an excellent response rate as it is in agreement with Mugenda and Mugenda (2003) that for analysis and reporting, a response rate of 50% is adequate; 60% is good and 70% and over is excellent. Figure 4.1 presents the response rate.

Table 4.1 Response rate

Response	Frequency	Percentage
Returned	147	98%
Unreturned	3	2%
Total	150	100%

Source: Research, 2019

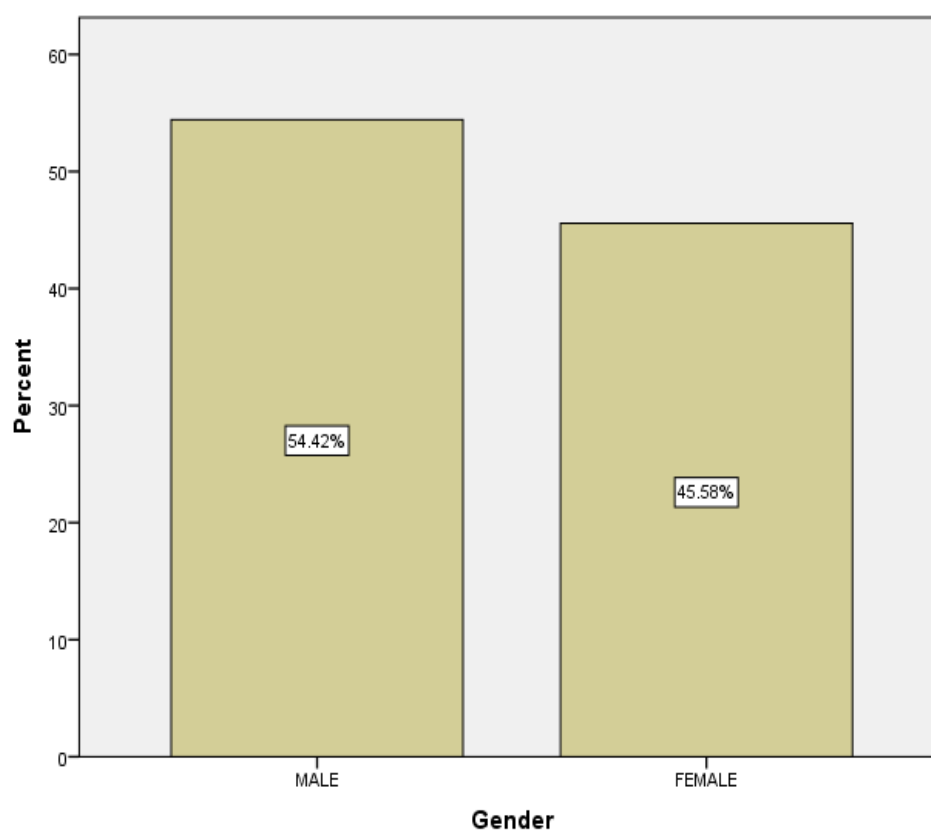
4.2 Demographic Information

In this section, the research captured the demography of the respondents which included gender, age, and level of education and years worked. These were descriptively analyzed using percentages.

4.2.1 Distribution of the Respondents by Gender

The results in the figure 4.1 below were generated using descriptive statistics to explore the distribution of gender of respondents. The reason why the gender of the respondents was recorded was to show that respondents came from both sexes.

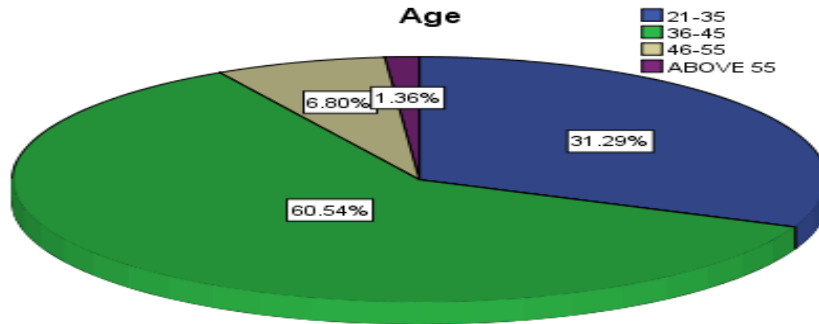
Figure: 4.1 Gender of Respondents



From the result above, the majority of the respondents was males than female, where by male respondents were 54.42%, while the female respondents were 45.58%. This implies that there is near gender balance in hiring of the staff hence Revenue Collection Systems was likely enhanced by gender mainstreamed in CGoB.

4.2.2 Distribution of the Respondents by Age

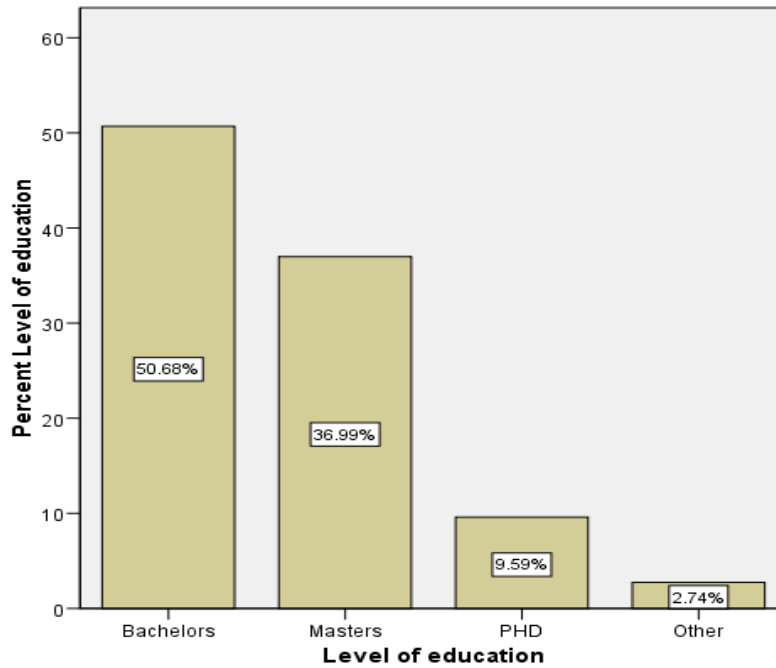
Figure: 4. 2 Age of Respondents



From the result above, the majority of the respondents were of the age bracket 36-45(60.54%) followed by 21-35(31.29%), 46-55(6.8%) and above 55(1.36%) respectively.

4.2.3 Distribution of the Respondents by Level of Education

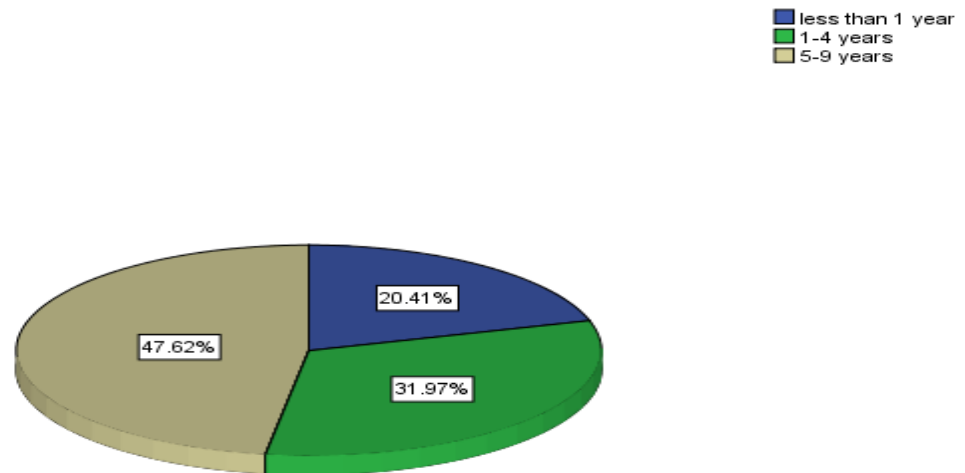
Figure: 4.3 Level of Education



From the result above, the majority of the respondents represented by 50.68% hold bachelor's degrees while master degree holders were 36.99%. PhD holders and others were 9.59% and 2.74% respectively.

4.2.4 Distribution of the Respondents by Years of Work Experience

Figure: 4.4 Years of Work Experience



From the result above, the majority of the respondents represented by 47.62 % had worked for the County Government of Bomet for between 5-9 years followed by 31.97% (1-4 years) and 20.41% (less than 1 year),

4.3 Descriptive Statistics

In this section, the research captured the descriptive statistics of the study based on the objective of the study. These were descriptively analyzed using means and standard deviations. The mean scores of 0 to 2.5 were taken to represent statements disagreed upon by a majority of respondents while mean scores of between 2.6 to 5.0 have been taken to represent statements agreed upon by a majority of respondents.

4.3.1 Automated Revenue System

The first objective of the study was to evaluate the use of automated revenue systems on revenue collection levels in Bomet County Government. The respondents were asked to respond to statements formulated based on the independent variable automated revenue system and five-point Likert's scale ranging from 1(strongly disagree) to 5(strongly agree).

Table 4.2: Descriptive Statistics - Automated Revenue System

	N	Mean	Std. Deviation
Increase in cash receipts as a result of use of automated systems	147	4.60	.569
Increase in billing as a result of use of automated systems	147	4.22	1.037
Enhanced monitoring of revenue collection as a result of use of automated systems	147	4.36	.758
Efficiency and effectiveness in revenue collection as a result of use of automated systems	147	4.39	.543
Increase in revenue collection as a result of use of automated systems	147	4.43	.549
		Mean = 4.4	StD=0.6912

From the findings on table 4.1, a mean of 4.4 with a standard deviation of 0.6912 was recorded. The findings as revealed that majority of the respondents agreed with the statements that suggest the influence of automated revenue systems on revenue collection levels in Bomet County Government.

4.3.2 Manual Revenue Systems

The second objective of the study was to evaluate the use of manual revenue systems on revenue collection levels in Bomet County Government. The respondents were asked to respond to statements formulated based on the independent variable manual revenue system and five-point Likert's scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 4.3: Descriptive Statistics – Manual Automated System

	N	Mean	Std. Deviation
Increase in cash receipts as a result of use of manual systems	147	3.84	.973
Increase in billing as a result of use of manual systems	147	4.61	.489
Enhanced monitoring of revenue collection as a result of use of manual systems	147	4.20	1.044
Efficiency and effectiveness in revenue collection as a result of use of manual systems	147	4.20	1.044
Increase in revenue collection as a result of use of manual systems	147	4.58	.584
		Mean = 4.286	StD=0.8268

From the findings on table 4.2, a mean of 4.286 with a standard deviation of 0.8268 was recorded. The findings as revealed that majority of the respondents agreed with the statements that suggest the influence of manual revenue systems on revenue collection levels in Bomet County Government.

4.3.3 Revenue Collection Levels

The Revenue Collection Level was the dependent variable of the study. The respondents were asked to respond to statements formulated based on the five-point Likert's scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 4.4: Descriptive Statistics – Revenue Collection Levels

	N	Mean	Std. Deviation
Increase in collection of property taxes	147	4.22	1.037
Increase in the collection of entertainment taxes	147	1.78	.625
Increase in the collection of license fees	147	2.83	.566
Increase in the collection of parking fees and fines	147	4.37	.751
Meeting of revenue targets	147	4.37	.552
		Mean = 3.514	StdD=0.7062

From the findings on table 4.4, a mean of 3.514 with a standard deviation of 0.7062 was recorded. The findings as revealed that majority of the respondents agreed with the statements that suggest an increase in revenue collection levels in Bomet County Government.

4.4 Reliability

A pilot study was carried out to determine reliability of the questionnaires which was done through Cronbach's Alpha which measured the internal consistency by establishing if certain item within a scale measures the same construct. The acceptable range for Cronbach Alpha test is 0.70 and above.

Table 4.5: Reliability

Cronbach's Alpha	N of Items
.771	19

From table 4.6 above Computed Cronbach's Alpha 0.771 proved that the research instrument used was reliable.

4.5 Inferential Analysis

4.5.1 Correlation analysis

The study performed Pearson correlation analyses to assess both the respective strengths and direction of relationships among the independent variables and between the independent variables and dependent variables.

Table 4.6: Pearson Correlation

Model	Correlations			
	Zero-order	Partial	Part	Sig.
Automated Revenue Systems	.812	.631	.455	.000
Manual Revenue Systems	.694	.290	.169	.000

a. Dependent Variable: Revenue Collection Levels in Bomet County.

The Results of the Pearson correlation, as shown in Table 4.6 above indicate that a strongest positive and significant correlation to Revenue Collection Levels was established between Automated Revenue Systems ($r = 0.631$, $p = 0.000$) followed by Manual Revenue Systems ($r = 0.290$, $p = 0.000$). The finding indicates a statistically significant linear dependence of revenue collection levels on all two systems.

4.5.2 Regression Analysis

Multiple regression analysis was also conducted to determine the Dependence of the dependent variables on the independent variables.

Table 4.7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.830 ^a	.688	.684	.23209

a. Predictors: (Constant), Manual Revenue Systems, Automated Revenue Systems
 Table 4.8 shows that the independent variables Manual Revenue Systems and Automated Revenue Systems explain much of the changes in dependent variable Revenue Collection Levels in Bomet County. The adjusted R square shows that the independent variables explain 68.4% change in dependent variable. That means that

31.6% change in Revenue Collection Levels in Bomet County is explained by other variables which are not accounted the model.

Table 4.8: Analysis of Variance (ANOVA)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	17.117	2	8.559	158.879	.000 ^b
	Residual	7.757	144	.054		
	Total	24.874	146			

a. Dependent Variable: Revenue Collection Levels in Bomet county

b. Predictors: (Constant), Manual Revenue Systems, Automated Revenue Systems

From Table 4.8, F-calculated (F= 158.879, p=0.000) was greater than F-critical. This means that the model was statistically significant.

Table 4.9: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	-.569	.236		-2.412	.017
	Automated Revenue Systems	.738	.076	.643	9.771	.000
	Manual Revenue Systems	.195	.054	.239	3.631	.000

a. Dependent Variable: Revenue Collection Levels in Bomet county

According to the coefficients of the regression in Table 4.9, Automated Revenue Systems had a positive and significant influence on Revenue Collection Levels in Bomet County ($\beta_1=0.643$, $p= 0.000$). The results imply that for every use of Automated Revenue Systems, there is an increase in the Revenue Collection Levels in Bomet County by 0.643 unit currencies.

Manual Revenue Systems had a positive and significant influence on Revenue Collection Levels in Bomet County ($\beta_2=0.239$, $p= 0.000$). The results imply that for

every use of Manual Revenue Systems, there is an increase in the Revenue Collection Levels in Bomet County by 0.239 unit currencies.

This implies that Automated Revenue System is more effective and efficient in generating revenue as compared to the manual system in Bomet County Government.

The regression model is as shown below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

From the regression results, the optimal model of the study is as follows:

$$Y = -0.569 + 0.643X_1 + 0.239X_2 + \varepsilon$$

Where: Y = Revenue Collection Levels in Bomet County

β_0 = Constant

$\beta_{1, 2}$ = Coefficient of X_1 , X_2 , X_3 and X_4

X_1 = Automated Revenue System; X_2 = Manual Revenue Systems; e = Error Term

4.6 Research Questions

The first null Hypothesis stated H_{01} : Automated revenue system has no significant effect on revenue collection levels in Bomet County Government. Based on the findings the p-value was less than 0.05 ($p=0.000 < 0.05$). Therefore, the study rejected the first null hypothesis H_{01} and accepted the alternative H_{11} : Automated revenue system has a significant effect on revenue collection levels in Bomet County Government.

The second null Hypothesis stated H_{02} : Manual revenue system has no significant effect on revenue collection levels in Bomet County Government. Based on the findings the p-value was less than 0.05 ($p=0.000 < 0.05$). Therefore, the study rejected the second null hypothesis H_{02} and accepted the alternative H_{22} : Manual revenue system has significant effect on revenue collection levels in Bomet County Government.

4.7 Discussion of the Findings.

This section presents a per objective discussion of the findings as discussed in the Models above. This section presents the significance of each Automated and Manual on the Revenue Level of County Government of Bomet. Through this, the County can easily tell which system yields more revenue than the other, and hence prompt the adoption of one with a higher revenue collection Level than the other.

4.7.1 Automated Revenue Systems and Revenue Collection Levels

The study established that Automated Revenue Systems had a positive and significant influence on Revenue Collection Levels in Bomet County ($\beta_1=0.643$, $p= 0.000$). The results imply that for every use of Automated Revenue Systems, there is an increase in the Revenue Collection Levels in Bomet County by 0.643 unit currencies.

4.7.2 Manual Revenue Systems and Revenue Collection Levels

The study also established that Manual Revenue Systems had a positive and significant influence on Revenue Collection Levels in Bomet County ($\beta_2=0.239$, $p= 0.000$). The results imply that for every use of Manual Revenue Systems, there is an increase in the Revenue Collection Levels in Bomet County by 0.239 unit currencies.

This implies that Automated Revenue System is more effective and efficient in generating revenue as compared to the manual system in Bomet County Government.

The study is consistent with other studies done on revenue collection systems.

4.7.3 Challenges Facing Revenue Systems

Based from the Primary data, these were the conclusion from the challenges that were in the Linkert scale Rating.

Statements	Mean
Poor Enforcement of Payment of Property Rates	3.22
Poor Record Keeping	3.34
Apathy on Part of Revenue Collectors	3.56

From the Findings the Revenue department did not put in place a proper enforcement to see the residents pay the property rates (that's Land rates, Stall Rates and License) with a MEAN=3.22

Poor record keeping by the Revenue Officers of Mean=3.34 and the Apathy on the Revenue Officers on the clients/residents; which saw a drop in revenue collection with a Mean=3.56. These challenges are some of the reasons the county cripple in Revenue collection over the past years.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter summarizes the findings of the study as established in previous chapter. The chapter covers the summary of the findings, recommendations, conclusion of the study as well as policy implications and suggestions for future research.

5.1 Summary of the findings

5.1.1 Automated Revenue Systems and Revenue Collection Levels

The first objective of the study was to evaluate automated revenue systems and revenue collection levels in Bomet County Government. The study established that Automated Revenue Systems had a positive and significant influence on Revenue Collection Levels in Bomet County ($\beta_1=0.643$, $p=0.000$). The results imply that for every use of Automated Revenue Systems, there is an increase in the Revenue Collection Levels in Bomet County by 0.643 unit currencies. This finding was supported by the study rejecting the first null hypothesis H_{01} and accepting the alternative H_1 : Automated revenue system has a significant effect on revenue collection levels in Bomet County Government. The alternative hypothesis was based on the p-value being less than 0.05. The descriptive and correlation analysis also supported this finding where by the strongest positive and significant correlation to Revenue Collection Levels was established between Automated Revenue Systems ($r=0.631$, $p=0.000$).

5.1.2 Manual Revenue Systems and Revenue Collection Levels

The second objective of the study was to evaluate manual revenue systems and revenue collection levels in Bomet County Government. The study also established that Manual Revenue Systems had a positive and significant influence on Revenue Collection Levels in Bomet County ($\beta_2=0.239$, $p=0.000$). The results imply that for every use of Manual Revenue Systems, there is an increase in the Revenue Collection Levels in Bomet County by 0.239 unit currencies. This finding was supported by the study rejecting the second null hypothesis H_{02} and accepting the alternative H_2 : Manual revenue system has a significant effect on revenue collection levels in Bomet County Government. The alternative hypothesis was based on the p-value being less than 0.05. The descriptive and correlation analysis also supported this finding where by a weak positive and significant correlation to Revenue Collection Levels was established between manual revenue Systems ($r=0.290$, $p=0.000$).

5.2 Conclusion

The study first objective was to evaluate automated revenue systems and revenue collection levels in Bomet County Government. The study second objective was to be to evaluate manual revenue systems and revenue collection levels in Bomet County Government. In comparison to the manual system, the study concluded that automated revenue system has a positive and significant influence on revenue collection levels in Bomet County.

Overall, the study concluded that Automated Revenue System is more effective and efficient in generating revenue as compared to the manual system in Bomet County Government.

5.3 Recommendations

Based on the study findings, the study recommended that Bomet County government should adopt automated revenue systems.

5.4 Suggestions for Future Research

The study found out that 31.6% change in revenue collection levels in Bomet County is explained by other factors which are not accounted by the model. This study therefore suggests future researchers to conduct a research on other determinants of revenue collection levels in Bomet County.

5.5 Limitations of the Study

The Study encountered various challenges due to busy schedule of the respondent. Some were adamant to tell the truth for fear that they might be victimized for failure on their part as the employees. To overcome these challenges, the respondents were assured of the purpose of the study and confidentiality on the information provided.

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APPENDICES

Appendix I: Questionnaire

Dear Respondent

RE: DATA COLLECTION

I am a Post Graduate Student at JKUAT. In partial fulfillment for the degree, I am currently conducting a research on **“Evaluation of Revenue Collection Systems and Revenue Collection Levels at Bomet County Government.”**

Your department has been selected to form part of the study. I kindly request you to assist me to collect data by completing the accompanying questionnaire. The data provided will be strictly for academic purpose and will be held in strict confidence.

Thank you

Yours faithfully,

Bernard Korir

SECTION A: RESPONDENTS DEMOGRAPHICS

Please fill in the information below by ticking appropriately.

1. Please indicate your gender.

Male

Female

2. What is your age bracket?

21-35 years []

36-45 years []

46-55 years []

55-above year []

3. What is your highest level of education?

Bachelor's degree []

Masters []

PhD []

Other (specify

4. Number of years worked at Bomet County Government

Less than one year []

1 – 4 years []

5 – 9 years []

10 – 14 years []

Above 15 years []

SECTION B:AUTOMATED REVENUE SYSTEMS

5. To what extent do you agree with the following statements on use of automated revenue systems and revenue collection levels in Bomet County Government? Scale 5= Strongly Agree; 4=Agree; 3=Neutral; 2= Disagree; 1= Strongly Disagree

Statements	1	2	3	4	5
Increase in cash receipts as a result of use of automated systems					
Increase in billing as a result of use of automated systems					
Enhanced monitoring of revenue collection as a result of use of automated systems					
Efficiency and effectiveness in revenue collection as a result of use of automated systems					
Increase in revenue collection as a result of use of automated systems					

SECTION C:MANUAL REVENUE SYSTEM

6. To what extent do you agree with the following statements on use of manual revenue systems and revenue collection levels in Bomet County Government Scale 5= Strongly Agree; 4=Agree; 3=Neutral; 2= Disagree; 1= Strongly Disagree

Statements	1	2	3	4	5
Increase in cash receipts as a result of use of manual systems					
Increase in billing as a result of use of manual systems					
Enhanced monitoring of revenue collection as a result of use of manual systems					
Efficiency and effectiveness in revenue collection as a result of use of manual systems					
Increase in revenue collection as a result of use of manual systems					

SECTION D: REVENUE COLLECTION LEVELS

To what extent do you agree with the following statements on Revenue collection levels at Bomet County Government? Scale 5= Strongly Agree; 4=Agree; 3=Neutral; 2= Disagree; 1= Strongly Disagree

Statements	1	2	3	4	5
Increase in collection of property taxes					
Increase in the collection of entertainment taxes					
Increase in the collection of license fees					
Increase in the collection of parking fees and fines					
Meeting of revenue targets					

SECTION E: CHALLENGES FACING REVENUE SYSTEM

To what extent do you think these three challenges have affected the raising of revenue by the County Government of Bomet. Scale 5= Strongly Agree Scale 4= Agree, Scale 3= Neutral, Scale 2=Disagree Scale 1= Disagree

Statements	1	2	3	4	5
Poor Enforcement of Payment of Property Rates					
Poor Record Keeping					
Apathy on Part of Revenue Collectors					

Thank you very much