

**REVENUE COLLECTION SYSTEMS AND REVENUE  
COLLECTION LEVELS IN LANDS, HOUSING AND PHYSICAL  
PLANNING DEPARTMENT AT KIAMBU COUNTY**

**BY**

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## DECLARATION

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

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

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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 Management System
LHPPD	Lands, Housing and Physical Planning Department
SDG	Sustainable Development Goals
TCT	Transaction Cost Theory

## ABSTRACT

The situation in Kenya in regard to revenue maximization by local governments has also been wanting. In was in order to hence determine the relationship between revenue collection system and revenue collection levels in Lands, Housing and Physical Planning Department (LHPPD) at Kiambu County. More specifically, the study set to: establish revenue collection systems used in LHPPD at Kiambu County; establish revenue collection levels from the revenue collection systems used in LHPPD at Kiambu County; compare revenue collection levels between manual and automated revenue collection systems used in LHPPD; and to determine the challenges facing revenue collection systems in LHPPD at Kiambu County. The study employed a descriptive survey research design. The target population of this study were finance and revenue officers from 12 Sub-County Offices in Kiambu County. Stratified random sampling technique was used and a sample size of 60 employees were selected. Primary data was collected by means of a questionnaire. The descriptive statistics and content analysis were employed in analyzing the data. The findings revealed that the use of automated revenue collection systems thus, faced a number of implementation challenges. LHPPD benefited significantly from application of automated revenue collection systems in terms of; increase cash receipts; efficient time utilization; expanding its revenue base; control of the collection process; increasing collection efficiency respectively. The automated revenue collection system was the most beneficial in enhancing revenue collection at the LHPPD. The change management was a major hinderance that faced the adoption of automated revenue collection system in LHPPD. There was steady increase in revenue collection upon introducing automated revenue collection systems. The study recommends that the management of LHPPD should continuously monitor the use of automated revenue collection systems with a view to minimize downtime, hence increased end user satisfaction. The management of LHPPD should continuously allocate adequate financial resources to take care of various implementation challenges impending the use of automated revenue collection systems. The management of LHPPD should heavily invest in change management to complete buy-in from the staff and end users. The management of LHPPD in Kiambu County should continuously upgrade its automated revenue collection systems.



# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Public revenue collection informs the fiscal policy and administration of a county's economy (Cakmak, Benk, & Budak, 2011). Revenue collection should comply with best practices of equity, ability to pay, economic efficiency, convenience and certainty (Visser & Erasmus, 2005).

Majority of revenue systems are manual in Africa and Kenya in particular (Bahiiigwa, Ellis, Fjeldstad, & Iversen, 2004). Kessey and Kroes (2002) concurs that in Ghana, there are some aspects of local revenue administration, which are manual based. The manual based systems of revenue collection were however attributable to problems of tracking fraud or rogue revenue collectors (Cobham, 2005). The manual or centralized systems were also characterized by excessive wastage of the resources and overheads needed to monitor and control them. The manual collection of payments also leads to delayed customer service (Prichard, 2010).

Automated revenue collection systems were firstly used in USA, and then spread to other developed and developing countries (United Nations Conference on Trade and Development, 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). The Kiambu County initiated an Information and Communication Technology (ICT) transformation road map 2014 to 2017 aimed at

utilizing technology to improve citizen service delivery, increase efficiency and enhance revenue collection levels (Ambali, 2009).

Tetteh (2012) and argues that the type of revenue collection systems that are in place determine level of revenue collected. The manual systems which has been in use for long is currently undergoing replacement with the automated systems. It would be useful to ascertain the value for money for the new automated systems compared to the earlier manual systems. This is given the huge contextual differences between developed economies where the automated systems have been used for long and developing economies where the system is a new concept.

### **1.1.1 Revenue Collection Systems**

The Kenya tax system over the years has been conducted manually until 1998 when adoption of IT started emerging in provision of public services (Moyi & Ronge, 2006). This form of tax system has its many problems like tax evasion and avoidance, errors in taxpayer payment and tax return details occasioned by manual processing of returns and long queues experienced when filing tax returns at Kenya Revenue Authority offices, leading to high financial losses to the government hence low revenue collections (Kenya Revenue Authority, 2014).

All government agencies use an integrated revenue collection and monitoring system that is effective and efficient (Amin, 2013). With an automated revenue collection system, both national and county governments can mobilize additional revenue through access to more financial resources (Kondo, 2015).

### **1.1.2 Revenue Collection Systems and Levels of Revenue Collection**

Consolidating 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 (Maisiba & Atambo, 2016). This would in turn support projects that would assist in sustainable development of a country for poverty reduction and wealth creation.

### **1.1.3 Kiambu County**

The Kiambu County initiated an ICT transformation road map 2014 to 2017 to enhance revenue collection and service delivery. Kiambu County Government had implemented LAIFOMS. The LAIFOMS consists of 10 interlinked modules grouped into three major components budget and financial management, expenditure and revenue (Kiambu County, 2015). The LAIFOMS is intended to enhance revenue collection from multiple sources (Kiambu County, 2015).

## **1.2 Statement of the Problem**

Tetteh (2012) and argues that the type of revenue collection systems that are in place determine level of revenue collected. The manual systems which has been in use for long is currently undergoing replacement with the automated systems. It would be useful to ascertain the value for money for the new automated systems compared to the earlier manual systems. This is given the huge contextual differences between developed economies where the automated systems have been used for long and developing economies where the system is a new concept.

Globally, several scholars have reviewed revenue collections systems and their revenue collection levels. Wasilewski (2000) focused on economic development and taxation. Isaac and Lilian (2010), Peled (2000) and Zineldin (2007) established a positive relationship between automation and revenue collection. In Africa, Tetteh (2012) focused on revenue collection automation in Ghana. 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, local government revenue growth.

The situation in Kenya in regard to revenue maximization by local governments has also been wanting (Manyasi, 2012). 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 revenue collection systems as automation is not fully operationalized. For instance, Kiambu County Government has automated its revenue collection system using LAIFOMS. It would be insightful to determine the relationship between revenue collection systems and revenue collection levels among the various county government in Kenya using Kiambu County as the area of study.

Locally, (Sharma, Orindi, Hesse, Pattison, & Anderson, 2014) looked at ways of engendering public participation in county government governance just giving a general overview of strategies of raising revenues at the county levels. (Kariuki, Nzioki, & Murigu, 2009) did a survey of revenue enhancement strategies by local authorities. Whereas many local studies have been undertaken to address the electronic revenue

collections, most studies in Kenya took a general approach mainly focusing on the whole country.

Despite the immense contribution of the application of revenue collection system as an operations strategy in different governments, no study sought to determine the relationship between revenue collection system and revenue collection levels. Informed by this knowledge gap, this study sought to determine the relationship between revenue collection system and revenue collection levels in Lands, Housing and Physical Planning Department (LHPPD) at Kiambu County. The study research question therefore was what is the relationship between revenue collection system and revenue collection levels in LHPPD at Kiambu County?

### **1.3 Objectives of the Study**

The main objective was to determine the relationship between revenue collection system and revenue collection levels in LHPPD at Kiambu County. The specific objectives of this study were to:

1. Establish revenue collection systems used in LHPPD at Kiambu County.
2. Establish revenue collection levels from the revenue collection systems used in LHPPD at Kiambu County.
3. Compare revenue collection levels between manual and automated revenue collection systems used in LHPPD at Kiambu County.
4. Determine the challenges facing revenue collection systems in LHPPD at Kiambu County.

#### **1.4 Importance of the Study**

This study may help other organizations in appreciating application of revenue collection system as an operations strategy in LHPPD at Kiambu County and in the public sector. Revenue collection system in Kiambu County and how it has impacted in operations of LHPPD may guide those public-sector departments that have not embraced application of integrated revenue collection system as an operations strategy on how it may realign customer service delivery for creating customer loyalty and creating strong brand to establish performance measurements for government programs and its importance in improving accountability and communication.

The findings may be invaluable to LHPPD management and the county government by appraising its customer service and link the same to the county government financial and institutional performance. The study may offer an opportunity for review of how application of revenue collection system as an operations strategy in enhancement of revenue collection and customer service policies stipulate and improve them to become more customer centric so as to improve service in the county government.

The study may also benefit academicians and future researchers; academicians. It adds to the already existing knowledge on application of integrated revenue collection system as an operations strategy in service delivery.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

The section presents the theoretical foundation explaining the study. It also presents review of literature on integrated revenue collection system, revenue collection levels between manual and automated systems and challenges facing automated revenue collection systems. The chapter later presents the summary of literature review and knowledge gap and the conceptual framework.

### **2.2 Theoretical Foundation of the Study**

The study was guided by Transaction Cost Theory (TCT) and control theory. These three theories are presented in the subsequent section.

#### **2.2.1 Agency Theory**

Agency theory (AT) explains the relationship between principals and agents in business. Developed by Jensen and Meckling (1976) it seeks to resolve problems between principals (such as shareholders) and agents (Holniker, 2005) where conflict of interest is likely to occur (Reiss, Albert, Roth & Jeffrey, 1993), and when the two differ about the degree of existing risk (Kennedy & Sugden, 2007).

The theory helps the study by examining the adoption and implementation of automated revenue collection system in in LHPPD at Kiambu County where the staff act on behalf of the Kiambu County Government and people of Kiambu County.

### **2.3 Manual Revenue Collection Systems**

The revenue collection processes among local authorities had been using manual for a long time (Athanasopoulos, 2010 and Ambali, 2009). The manual systems however suffered from high costs of operation, fraud, leakages among other challenges (Fjeldstad & Heggstad, 2012). Hence revenue system automation was meant to increase the efficiency and effectiveness in revenue collection (UNCTAD, 2008).

### **2.4 Automated Revenue Collection Systems**

Majority of revenue systems are manual in Africa and Kenya in particular (Bahigwa, Ellis, Fjeldstad, & Iversen, 2004). Kessey and Kroes (2002) concurs that in Ghana, there are some aspects of local revenue administration, which are manual based. The manual based systems of revenue collection were however attributable to problems of tracking fraud or rogue revenue collectors (Cobham, 2005). 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).

### **2.5 Revenue Collection Systems and Revenue Collection Levels**

Haughton and Desmeules, (2001) established that revenue administration automation has a positive impact on the cost of tax administration, automation and effectiveness of revenue collection. Tetteh (2012) and argues that the type of revenue collection systems that are in place determine level of revenue collected. The manual systems which has been in use for long is currently undergoing replacement with the automated systems. It would be useful to ascertain the value for money for the new automated systems compared to the earlier manual systems. This is given the huge contextual differences



between developed economies where the automated systems have been used for long and developing economies where the system is a new concept.

Globally, several scholars have reviewed revenue collections systems and their revenue collection levels. Wasilewski (2000) focused on economic development and taxation. Isaac and Lilian (2010), Peled (2000) and Zineldin (2007) established a positive relationship between automation and revenue collection. In Africa, Tetteh (2012) focused on revenue collection automation in Ghana. 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, local government revenue growth.

The situation in Kenya in regard to revenue maximization by local governments has also been wanting (Manyasi, 2012). To enhance tax administration, a number of county governments have rolled out modernization of their revenue collection systems from manual to automated systems. Consolidating the tax collection functions reduces redundancy, significantly increase collections, and standardize the collections process (KRA, 2016). Automated systems are capable of increasing revenue collection levels for governments (Maisiba & Atambo, 2016). This would in turn support projects that would assist in sustainable development of a country for poverty reduction and wealth creation.

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and long queues experienced when filing tax returns at Kenya Revenue Authority offices, leading to high financial losses to the government hence low revenue collections (Kenya Revenue Authority, 2014).

All government agencies use an integrated revenue collection and monitoring system that is effective and efficient (Amin, 2013). With an automated revenue collection system, both national and county governments can mobilize additional revenue through access to more financial resources (Kondo, 2015).

## **2.6 Challenges Facing Revenue Collection Systems**

Apathy on the part of revenue collectors, this phenomenon has become rampant in the devolved system in Kenya. These activities of the revenue collectors adversely affect the progress of devolved system in Kenya as well as the district assemblies' capacity and accountability (Mutisya, 2013). Poor record keeping further bedevils the smooth growth of the counties (Devas & Kelly, 2001).

The management of the organization should consider many factors when making a decision to introduce any form of change. When a business is performing poorly, it may be obvious that changes are needed (Shields, 1999). The management needs to develop a plan that acts as a guide to the new change, process and procedures they intend to put in place to implement the change. Organizational change requires a comprehensive plan (Mutisya, 2013). Most organizations make the mistake of implementing change without seeing it all the way through. The management requires developing a step-by-step plan for the organizational change and then enforcing it.

Failure to communicate with all employees may be a down to successful change implementation process, particularly if you are facing major changes for example automation of revenue collection systems. Employees should be informed about the change management process (Shaver & Katherine, 2006). Top management should involve employees in the decision-making process, employees should be allowed to give their views on the change process (Spencer & Casey, 2007 and Simonson, 2005).

## **2.8 Summary of Empirical Review**

The summary of empirical review is presented in the table below in line with the study specific objectives. The study by Mutisya (2014) focused on the entire county of Machakos County while the current study focuses on a department in Kiambu County. Homa Bay County in the study by Odoyo et al. (2014) is in a rural set up while Kiambu County is majorly an urban setup hence contextual difference in revenue automation. Muthama (2015) focused on KRA which enjoys government financial support relative to Kiambu County. The study by Gideon and Alouis (2013) focused on an entire country of Zimbabwe while the current study focusses on a County Government in Kenya.

## **2.7 Conceptual Framework**

Revenue collection in LHPPD at Kiambu County is what is being investigated. The revenue collection in LHPPD at Kiambu County is influenced by factors that constituted the independent variables. Based on the literature review, the independent variable included implementation of automated revenue collection system that streamlines the billing, receipting, workflow and enhance revenue collected.

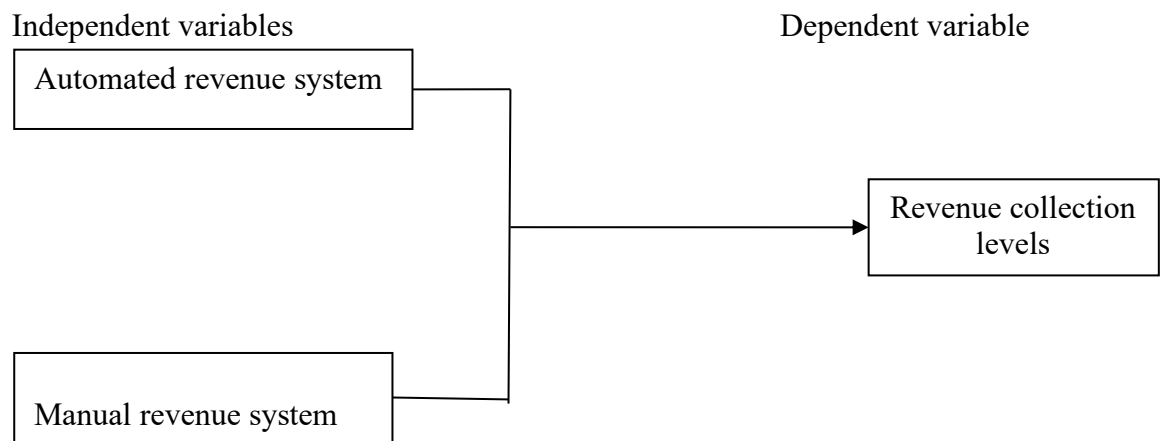


Figure 2.1 Conceptual Framework

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

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

### **3.2 Research Design**

The study employed a descriptive survey research design aimed at investigating on application of integrated revenue collection system as an operations strategy in service delivery. The design sought to capture both qualitative and quantitative aspects, which the study intended to capture.

### **3.3 Target Population**

The key sources of data were finance and revenue officers from 12 Sub-County Offices in Kiambu County. They included Thika, Juja, Gatundu South, Gatundu North, Ruiru, Kiambu, Githunguri, Kiambaa, Kikuyu, Kabete, Limuru and Lari. The Kiambu County initiated an ICT transformation road map 2014 to 2017 to enhance revenue collection and service delivery. The LAIFOMS consists of 10 interlinked modules grouped into three major components budget and financial management, expenditure and revenue (Kiambu County, 2015). The LAIFOMS is intended to enhance revenue collection from multiple sources (Kiambu County, 2015).

### 3.4 Sampling Procedure

Stratified random sampling technique was used whereby 12 strata were considered. A sample size of 60 employees were selected to give a response rate of 72.3 percent of the target population. This data/information is shown in Table 3.1 below.

Table 3.1 Sample Size

Category	Target Population	Sample Size
Thika Sub-County	11	9
Kiambu Sub-County	9	7
Ruiru Sub-County	10	8
Githunguri Sub-County	8	5
Kiambaa Sub-County	6	4
Limuru Sub-County	8	5
Kikuyu Sub-County	8	5
Kabete Sub-County	7	4
Juja Sub-County	8	5
Gatundu South Sub-County	4	3
Gatundu North Sub-County	4	3
Lari	3	2
Total	86	60

### 3.5 Data Collection

Through ‘drop and pick later’ method, a questionnaire for data collection was administered. It had four parts named A to D. Part A contained questions on background information; part B contained questions to establish revenue collection systems used; part C contained questions to find out challenges facing automated revenue collection systems; and part D had questions on revenue collection levels.

Secondary data was collected using format in part D from published data and was used to answer questions to establish revenue collection levels from the revenue collection systems and questions to compare revenue collection levels between manual and automated revenue collection systems used in LHPPD at Kiambu County.

### 3.6 Data Analysis

The Statistical Package for the Social Sciences (SPSS) was used for analyses. The first objective to establish revenue collection systems used was analysed using descriptive statistics and content analysis. The second objective to establish revenue collection levels from the revenue collection systems used was analysed using descriptive statistics. The third objective to compare revenue collection levels between manual and automated revenue collection systems used was analysed using descriptive statistics and Chi-square test. The fourth objective to establish challenges facing automated revenue collection systems was analysed using descriptive statistics and content analysis. The summary of the methodology is as shown in Table 3.2 below.

Table 3.2 Summary of Methodology

Objective	Data	Source	Nature of data	Analysis
Establish revenue collection systems used	Primary	Questionnaire	Quantitative	Descriptive statistics and content analysis
Establish revenue collection levels from revenue collection systems used	Secondary	Published statements	Quantitative	Descriptive statistics
Compare revenue collection levels between manual and automated revenue collection systems used	Secondary	Published statements	Quantitative	Descriptive statistics and Chi-test
Challenges facing automated revenue collection systems	Primary	Questionnaire	Quantitative and qualitative	Descriptive statistics and content analysis

# **CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION**

## **4.1 Introduction**

The study focused on the relationship between revenue collection system and revenue collection levels in LHPPD at Kiambu County. Specifically, the study sought to establish revenue collection systems used in LHPPD; establish revenue collection levels from the revenue collection systems used in LHPPD; compare revenue collection levels between manual and automated revenue collection systems used in LHPPD; and determine the challenges facing revenue collection systems in LHPPD. The study sample size was 60 finance and revenue officers as shown in Table 4.1 below.

Table 4.1 Response Rate

Response Rate	Actual Numbers
administered	60.0
returned	50.0
Response rate (percent)	83.3

As indicated in Table 4.1, out of 60 finance and revenue officers to whom questionnaire were administered to, only 50 of them returned the questionnaires duly filled - a response rate of 83.3 percent which was sufficient for analysis.

## **4.2 Characteristics of the Respondents**

The study sought background information of the finance and revenue officers. The study evaluated the gender distribution of the respondents as shown in Figure 4.1.



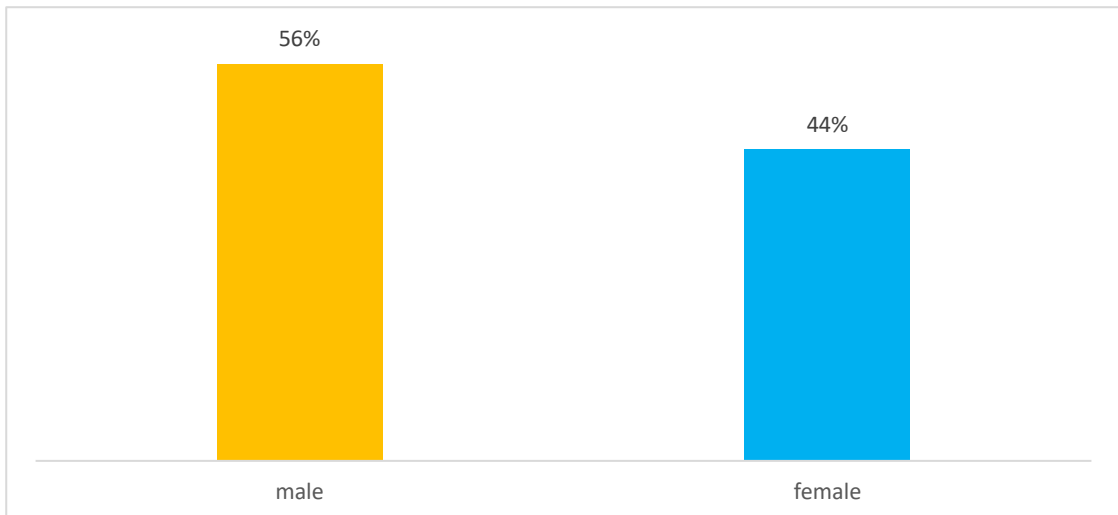


Figure 4.1 Gender Distribution of the Respondents

From the findings, over half (56 percent) of the respondents were male while 44 percent were female. This implied that there is near gender balance in the hiring of the staff at LHPPD and hence revenue collection system and revenue collection levels was likely to be enhanced by gender mainstreaming in the Kiambu County management.

The age of the respondents as in Figure 4.2 was also investigated.

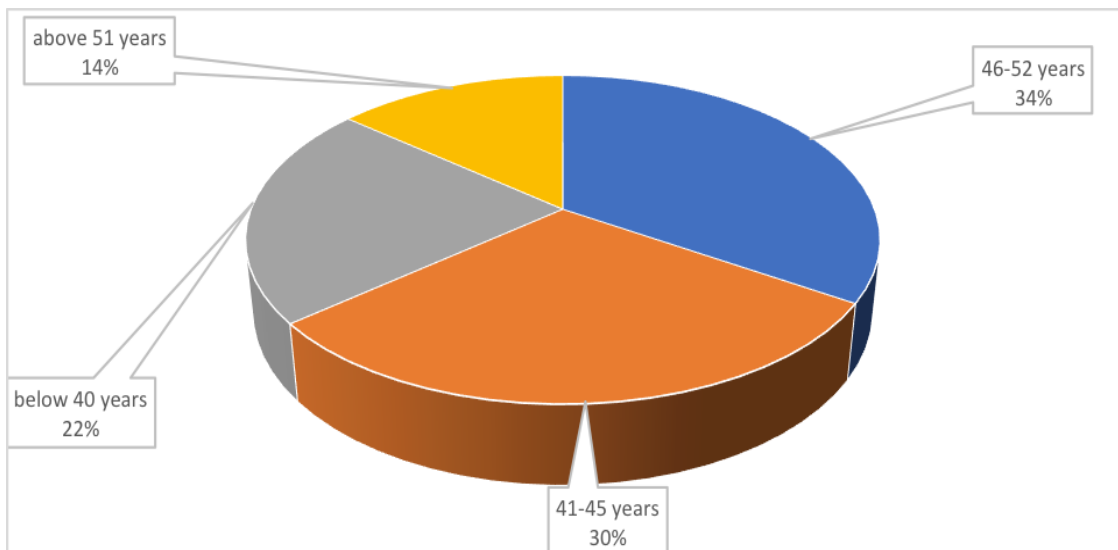


Figure 4.2 Age Distribution of the Respondents

It was evident that 34 percent of the respondents were 46 and 52 years old, 30 percent were aged between 41 and 45 years, 22 percent were below 40 years while 14 percent were aged above 51 years. This depicts that majority of the staff at LHPPD at Kiambu County surveyed were mature given that they were over 40 years and therefore they had accumulated wealth of experience in revenue collection system and revenue collection levels. It further illustrates their high appreciation of the relationship between revenue collection system and revenue collection levels. In addition, the respondents years of experience in LHPPD was sought as shown in Figure 4.3 below.

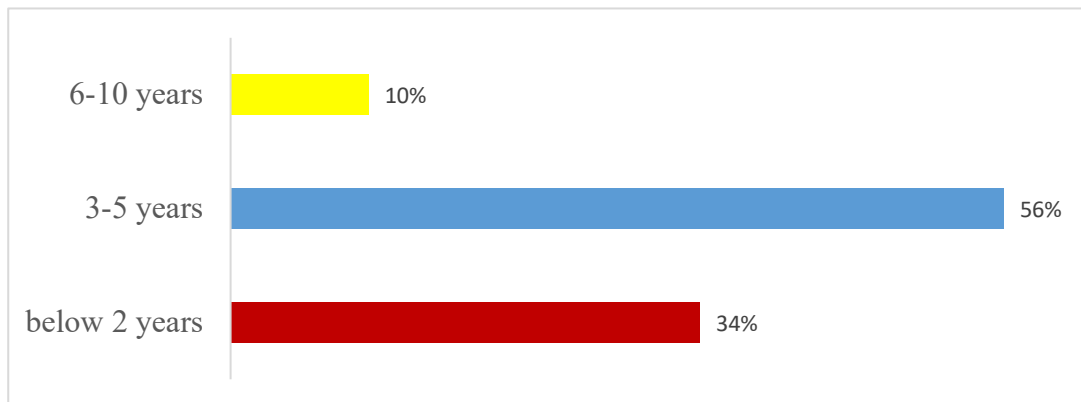


Figure 4.3 Work Experience in Lands, Housing and Physical Planning Department

Over half 56 percent of the participants had worked in LHPPD at Kiambu County for 3 to 5 years, 34 percent had worked for below 2 years, 10 percent had worked for 6 to 10 years. This implied that majority of the respondents had worked in their position for long enough to understand the relationship between revenue collection system and revenue collection levels at LHPPD.

The research sought to determine education acquired and the results are as shown in the Figure 4.4

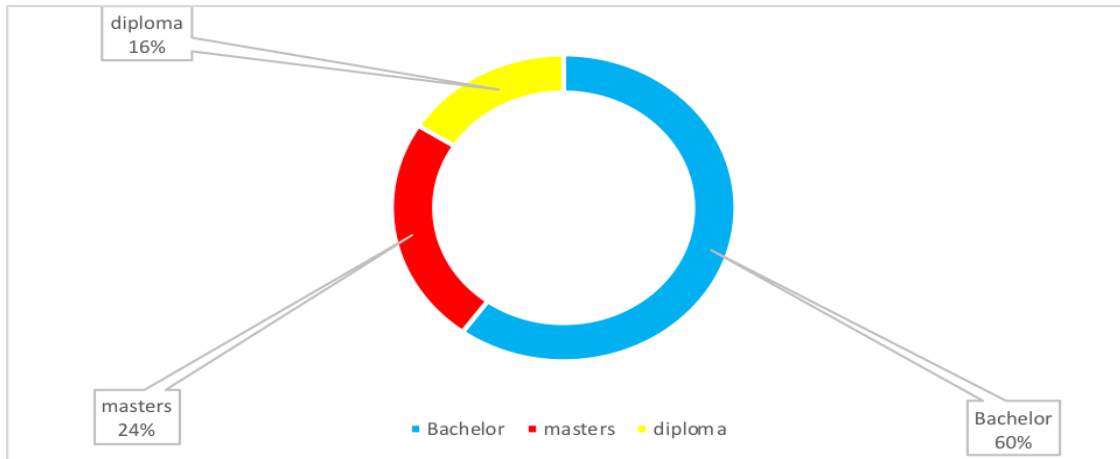


Figure 4.4 Highest Level of Education

A majority (60 percent) and 24 percent of the respondents had a bachelors and master’s degree respectively while 16 percent were diploma holders. This is an indication that most of the respondents had attained higher education, hence better understanding on relationship between revenue collection system and revenue collection levels in LHPPD at Kiambu County.

### 4.3 Revenue Collection Systems Used

The first objective of the study was to establish revenue collection systems used in LHPPD at Kiambu County over the last four years and Figure 4.5 below shows this information.

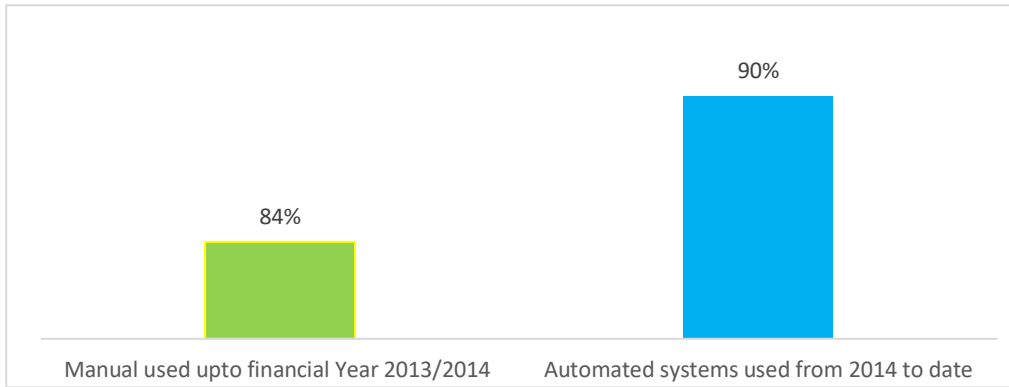


Figure 4.5 Revenue Collection Systems in Use

The majority (84 percent) of the respondents indicated that manual revenue collection system was being used up-to financial year 2013/2014 while 90 percent indicated the use of automated systems used from 2014 to date. The findings imply that LHPPD had been using manual revenue collection system up-to financial year 2013/2014 and transitioned to automated revenue collection system since financial year 2014/2015. The transitioning was pegged on the need to seal loopholes associated with manual revenue collection system as well as improve the level collection to meet the Kiambu County financial and development obligations.

On the user satisfaction, over half (66 percent) of the respondents indicated being satisfied with the automated revenue collection systems while 34 percent were satisfied with manual revenue collection systems (see Figure 4.6 below). This implied that there was a higher satisfaction level out of adoption of automated revenue collection systems as compared to manual revenue collection systems.

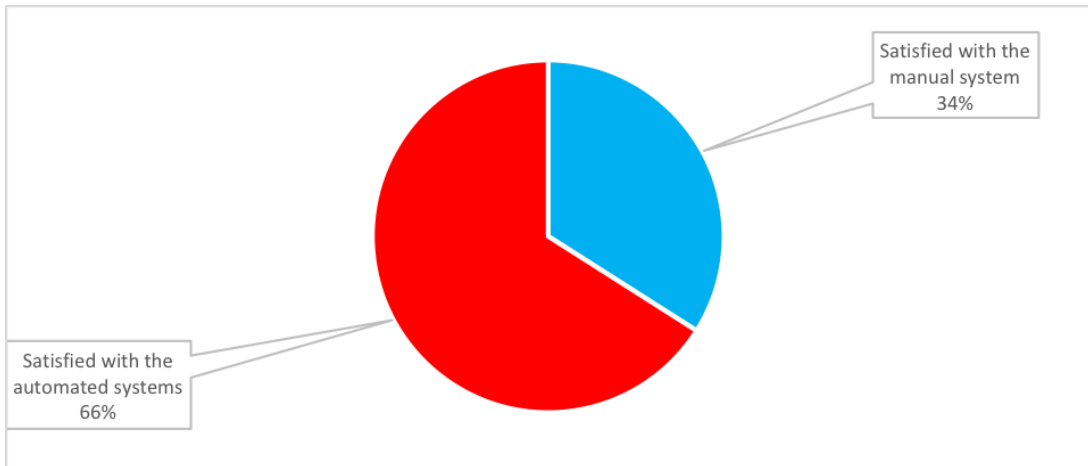


Figure 4.6 User Satisfaction with Revenue Collection Systems

In areas of future improvements, the respondents were asked to indicate the areas they anticipated future improvements to be implemented with regard to the automated system operations. The areas that the respondents anticipated to require future improvements to be implemented included staff competency in automated system usage (80 percent); loss of critical data (74 percent) and power outage (54 percent), as shown in Figure 4.7 below.

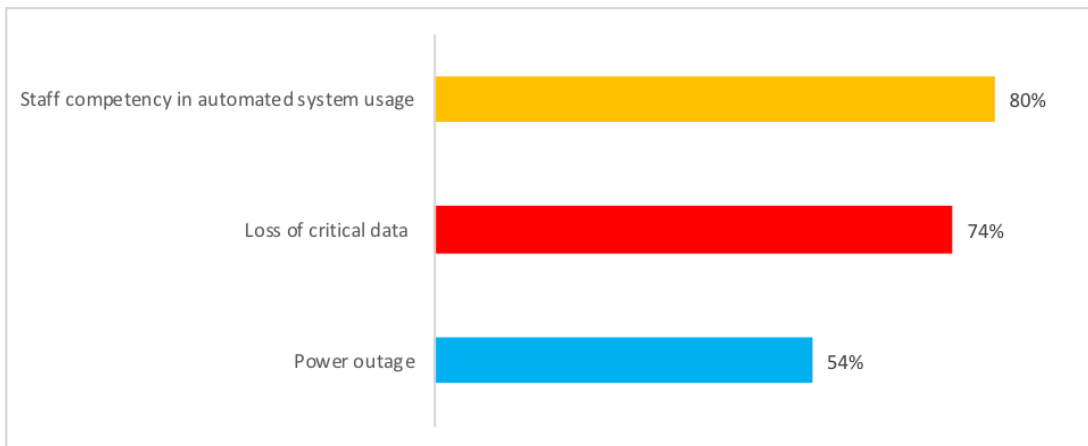


Figure 4.7 Areas of Future Improvements

The respondents were to indicate the extent to which the county government had benefited from the revenue collection in use in 2012 to 2013 (manual) and 2014 to 2015

(automated). Their responses were weighted using means being a five-point Likert scale in nature.

Table 4.2 Benefits From Use of Each of the Revenue Collection Systems

Benefits	Manual System	Automated System
	Mean	Mean
Increase cash receipts	3.7400	4.1200
Efficient time utilization	3.6800	4.0800
Expanding its revenue base	3.6400	4.0600
Control of the collection process	3.2800	3.8800
Increasing collection efficiency	2.8400	3.8400

From Table 4.2 above, majority of the respondents indicated to a high extent that the county government benefited from application of automated revenue collection systems in increase in cash receipts (mean = 4.12); efficient time utilization (mean = 4.08); expanding its revenue base (mean = 4.06); control of the collection process (mean = 3.88); and increasing collection efficiency (mean = 3.84). In addition, they indicated to a moderate extent that the county government benefited from application of manual revenue collection systems in the following ways increase in cash receipts (mean = 3.74); efficient time utilization (mean = 3.68); expanding its revenue base (mean = 3.64); control of the collection process (mean = 3.28); and increasing collection efficiency (mean = 2.84).

There was a higher mean value of average mean from automated revenue collection system (average = 3.9) as compared with manual revenue collection system (average = 3.44). This confirms that although the two revenue collection systems were beneficial to LHPPD, the automated revenue collection system was the most beneficial in enhancing revenue collection at LHPPD, which informed the shift from manual to automated service delivery.

The respondents needed to specify whether they agreed with the use of the manual or automated revenue collection systems. As Figure 4.8 below shows, majority (88 percent) of the respondents favored the use of automated revenue collection system while only 18 percent favored the use of manual revenue collection system. This meant that the staff of LHPPD understood the greater role of automated revenue collection system in ensuring increased revenue collection at LHPPD.

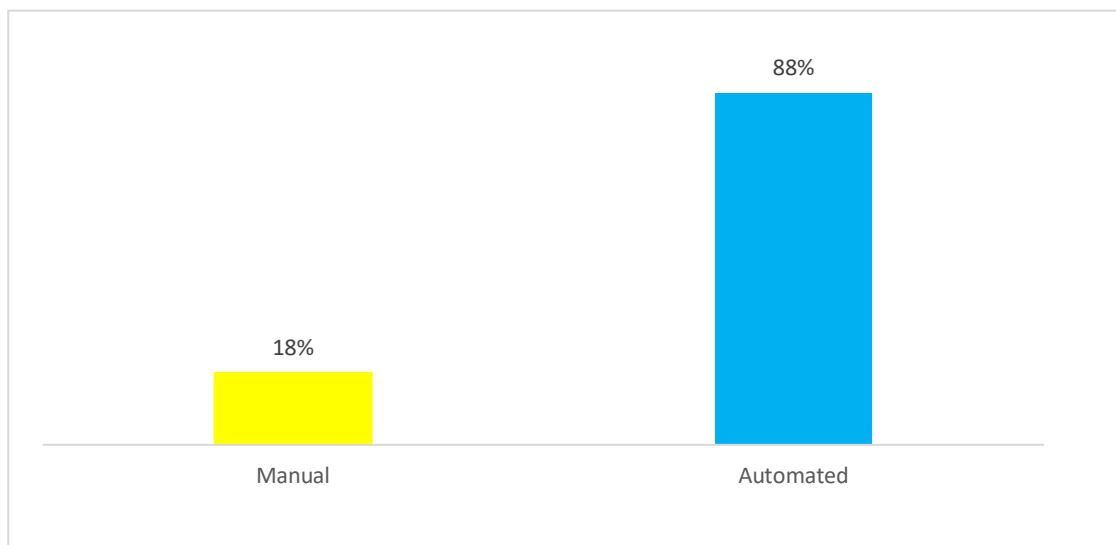


Figure 4.8 Manual or Automated Revenue Collection Systems

With respect to benefits of manual and automated revenue collection systems, the respondents were asked to indicate the extent to which each collection system brought the highlighted benefits. Their responses were weighed on means as in Table 4.3 below.

As Figure 4.3 shows, majority of the respondents indicated to a high extent that automated revenue collection system brought powerful monitoring tool for revenue collection (mean = 4.20); efficiency and effectiveness in revenue collection (mean = 4.12); increased revenue (mean = 3.94); payment of duties and taxes anywhere (mean = 3.90).

**Table 4.3** Abilities of Each Revenue Collection Systems

Abilities	Manual System	Automated System
	Mean	Mean
Powerful monitoring tool for revenue collection	3.8400	4.2000
Efficiency and effectiveness in revenue collection	3.8200	4.1200
Increased revenue	3.7000	3.9400
Payment of duties and taxes anywhere	3.3400	3.9000

On the other hand, majority of the respondents indicated to a high extent that manual revenue collection system brought powerful monitoring tool for revenue collection (mean = 3.84); efficiency and effectiveness in revenue collection (mean = 3.82); increased revenue (mean = 3.70); and payment of duties and taxes anywhere (mean = 3.34). There was a higher mean value of average mean from automated revenue collection system (average = 4.04) as compared with manual revenue collection system (average = 3.68). This meant that although the two revenue collection systems were beneficial to LHPPD, the automated revenue collection system was more beneficial in enhancing revenue collection, hence the need for its up-scaling.

#### **4.4 Challenges Facing Automated Revenue Collection System**

The second objective was to determine the challenges facing revenue collection systems in LHPPD at Kiambu County. The respondents were to indicate the extent to which various challenges affected the implementation of automated revenue collection system. Their responses were rated on a five-point Likert scale and their means are as in Table 4.4 below.



Table 4.4 Challenges Affecting the Implementation of Automated Revenue Collection System

Challenges	Mean
poor enforcement of payment of property rates	4.1400
People' failure to comply with paying rates	4.0600
Resistance from the employees in the county	3.5400
Poor tracking of economic activities	3.4000
Apathy on the part of revenue collectors	3.3600
Poor records keeping	3.1400

From the findings, majority of the respondents indicated that the challenges affect the implementation of automated revenue collection system included poor enforcement of payment of property rates (mean = 4.14); People' failure to comply with paying rates (mean = 4.06); resistance from the employees in the county (mean = 3.54); poor tracking of economic activities (mean = 3.40); apathy on the part of revenue collectors (mean = 3.36); and poor records keeping (mean = 3.14) – see Table 4.4 above.

The findings imply that change management was a major hinderance that faced the adoption of automated revenue collection system in LHPPD. There was lack of enforcement, people unwillingness to pay basic land rates, poor tracking of economic activities, and apathy by the department staff. Introducing the automated revenue collection system in LHPPD would not be fully successful without the buy-in from the staff and end users, hence the department required to invest in change management.

#### 4.5 Revenue Collection Levels

The third objective of the study was to establish revenue collection levels from the revenue collection systems (both manual and automatic) used in LHPPD at Kiambu County. The findings are shown in Table 4.5 below. From Table 4.5, the highest value of revenue generated when the department was using a manual revenue collection

system was KShs 0.198 billion in 2012/2013. However, with the introduction of automated revenue collection system in 2013/2014, the revenue collected significantly increased to KShs 0.201 billion. In the subsequent financial year 2015/2016, the revenues increased to KShs 0.309 billion. This indicated that automated revenue collection system was a critical tool that the department applied to grow revenue collection levels due to increase in efficiency associated with the automatic system.

Table 4.5 Revenue Collection Levels (KShs Million)

Nature of Revenue Collection	2012/2013	2013/2014	2015/2016
Manual revenue collection systems	198.50	Nil	Nil
Automated revenue collection systems	Nil	201.23	309.20

#### 4.6 Revenue Collection Levels Between Manual and Automated Systems

The study sought to test whether revenue collection levels through automated system was not greater than through the manual system and the results are shown in Table 4.6 below. The findings indicated that the p - value was 0.0016 and since p – value was less than  $\alpha = 0.05$  significance level ( $0.0016 < 0.05$ ), then revenue collection levels through automatic system was gretaer than through manual system.

Table 4.6 Automated Versus Manual Revenue Collection Systems

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	38.322 <sup>a</sup>	16	.0016
N of Valid Cases	50		

The findings are consistent with Haughton and Desmeules (2001) who confirmed that revenue administration automation ensures reduced clearance time, curb tax evasion and effectiveness of revenue collection (de Wulf & Sokol, 2005). According to Moyi & Ronge, (2006) the Kenya tax system over the years has been conducted manually until 1998 when adoption of IT started emerging in provision of public services. This

form of tax system has its many problems like tax evasion and avoidance, errors in taxpayer payment and tax return details occasioned by manual processing of returns and long queues experienced when filing tax returns at Kenya Revenue Authority offices, leading to high financial losses to the government hence low revenue collections (Kenya Revenue Authority, 2014).

All government agencies use an integrated revenue collection and monitoring system that is effective and efficient (Amin, 2013). With an automated revenue collection system, both national and county governments can mobilize additional revenue through access to more financial resources (Kondo, 2015). Automated systems are capable of increasing revenue collection levels for governments (Maisiba & Atambo, 2016). This would in turn support projects that would assist in sustainable development of a country for poverty reduction and wealth creation.

Tetteh (2012) argues that the type of revenue collection systems that are in place determine level of revenue collected. The manual systems which has been in use for long is currently undergoing replacement with the automated systems. It would be useful to ascertain the value for money for the new automated systems compared to the earlier manual systems. This is given the huge contextual differences between developed economies where the automated systems have been used for long and developing economies where the system is a new concept.

Globally, several scholars have reviewed revenue collections systems and their revenue collection levels. Wasilewski (2000) focused on economic development and taxation. Isaac and Lilian (2010), Peled (2000) and Zineldin (2007) established a positive relationship between automation and revenue collection. In Africa, Tetteh (2012) focused on revenue collection automation in Ghana. 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, local government revenue growth.

## **CHAPTER FIVE:SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

The chapter presents the summary of key findings on relationship between revenue collection system and revenue collection levels in LHPPD at Kiambu County. It also presents the conclusion and recommendations made based on the study specific objectives. The areas for further research is also provided later in the chapter.

### **5.2 Summary**

Based on the findings, it was established that manual revenue collection system was being used up-to 2013/2014 as reported by majority (88 percent) of staff while the use of automated system started from 2014/2015 to date as reported by majority (90 percent) of staff. The transitioning from manual to automatic was pegged on the need to seal loopholes associated with manual revenue collection system as well as improve the level collection to meet the Kiambu County financial and development obligations.

The study established that 66 percent were satisfied with the automated revenue collection system as compared to 34 percent of them who were satisfied with manual revenue collection system. The areas that require future improvements to be implemented with regard to the automated system operations included staff competency in automated system usage; loss of critical data; and power outage.

The study determined that Kiambu County Government and particularly LHPPD benefited significantly from application of automated revenue collection system in

terms of increase cash receipts; efficient time utilization; expanding its revenue base; control of the collection process; and increasing collection efficiency. In addition, LHPPD benefited to a moderate extent from application of manual revenue collection system in the following ways increase cash receipts; efficient time utilization; expanding its revenue base; control of the collection process; increasing collection; and efficiency. Moreover, although the two revenue collection systems were beneficial to LHPPD, the automated revenue collection system was the most beneficial in enhancing revenue collection at LHPPD, which informed the shift from manual to automated service delivery.

Majority (88 percent) of the respondents favored the use of automated revenue collection system compared to 18 percent who favored the use of manual revenue collection system. The staff of LHPPD understood the greater role of automated revenue collection system in ensuring increased revenue collection. The study further established that automated revenue collection system brought powerful monitoring tool for revenue collection); efficiency and effectiveness in revenue collection; increased revenue; and payment of duties and taxes anywhere. Furthermore, while the two revenue collection systems were beneficial to LHPPD, the automated revenue collection system was more beneficial in enhancing revenue collection.

The study revealed that the challenges that affect the implementation of automated revenue collection system included lack of enforcement of payment of property rates; people' unwillingness to pay basic rates is major challenge confronting several county assemblies; resistance from the employees in the county; poor tracking of economic activities; apathy on the part of revenue collectors; and poor keeping of records on

economic activities are bedeviling the smooth growth of the counties. Therefore, change management was a major hinderance that faced the adoption of automated revenue collection system and introducing the automated revenue collection system would not be fully successful without the buy-in from the staff and end users.

The study also established that the highest value of revenue generated when the department was using a manual revenue collection systems was KShs 0.198 billion in 2012/2013. However, with the introduction of automated revenue collection systems in 2013/2014, the revenue collected increased to KShs 0.201 billion and in 2015/2016, the revenues increased to KShs 0.309 billion. This indicated that the automated revenue collection system was a critical tool that the department applied to grow revenue collection levels. In addition, revenue collection levels through automated system were significantly greater than through manual system.

### **5.3 Conclusion**

From this study, the manual revenue collection system was being used up-to 2013/2014 while the use of automated system started being used from 2014/2015 to date.

Kiambu County Government and particularly LHPPD benefited significantly from application of automated revenue collection system in terms of increase cash receipts; efficient time utilization; expanding its revenue base; control of the collection process; and increasing collection efficiency. In addition, LHPPD benefited to a moderate extent from application of manual revenue collection system in the following ways increase cash receipts; efficient time utilization; expanding its revenue base; control of the collection process; increasing collection; and efficiency. Moreover, although the two

revenue collection systems were beneficial to LHPPD, the automated revenue collection system was the most beneficial in enhancing revenue collection at LHPPD, which informed the shift from manual to automated service delivery.

The staff of LHPPD understood the greater role of automated revenue collection system in ensuring increased revenue collection. The study further established that automated revenue collection system brought powerful monitoring tool for revenue collection); efficiency and effectiveness in revenue collection; increased revenue; and payment of duties and taxes anywhere. Furthermore, while the two revenue collection systems were beneficial to LHPPD, the automated revenue collection system was more beneficial in enhancing revenue collection.

The change from manual to automate system was pegged on the need to seal loopholes associated with manual revenue collection system as well as improve the level collection to meet the Kiambu County financial and development obligations. There was also a higher satisfaction level out of adoption of automated revenue collection system as compared to manual revenue collection system. However, the use of automated revenue collection systems faced some implementation challenges ranging from staff competency issues, loss of critical data, and power outage that required redress.

The findings of the study indicated that Kiambu County Government and particularly LHPPD benefited from the application of automated revenue collection system in in increase cash receipts, efficient time utilization, expanding its revenue base, control of the collection process, and increasing collection efficiency. Therefore, the automated revenue collection system was more beneficial in enhancing revenue collection, which informed the shift from manual to automated service delivery system. At the same time,



the staff of LHPPD understood the greater role of automated revenue collection system in ensuring increased revenue collection. In addition, the established that automated revenue collection system brought powerful monitoring tool for revenue collection; efficiency and effectiveness in revenue collection; increased revenue; and payment of duties and taxes anywhere.

The challenges that affected the implementation of automated revenue collection system were also identified and among them included lack of enforcement, people's unwillingness to pay basic land rates, poor tracking of economic activities, and apathy by the department staff. So, introducing the automated revenue collection system in LHPPD would not be fully successful without the buy-in from the staff and end users hence the department required to invest in change management.

#### **5.4 Recommendations**

The study established that there was a higher satisfaction level out of adoption of automated revenue collection system as compared to manual revenue collection system. The study recommends that the management of LHPPD should continuously monitor the use of automated revenue collection system with a view to minimize downtime, hence increased end user satisfaction. Second, management of LHPPD should continuously allocate adequate financial resources to take care of various implementation challenges impending the use of automated revenue collection system.

The study established that change management was a major hinderance that faced the implementation of automated revenue collection system and therefore management of LHPPD should heavily invest in change management to complete buy-in from the staff

and end users. Moreover, management of LHPPD should continuously upgrade its automated revenue collection system to guarantee its optimization in revenue collection.

### **5.5 Areas for Further Studies**

The study sought to determine the relationship between revenue collection system and revenue collection levels in LHPPD at Kiambu County. It is important to do a similar study in a rural county like Kiambu as well as an urban in-order to determine if contextual difference exist between rural and urban counties in relation to use of technology supported systems.

### **5.6 Limitations of the Study**

The study revolved around financial information about revenue collection which was considered sensitive and therefore access to such data was considered cumbersome to access. The study respondents were very busy to spare sometime and respond to the study questions, hence slowing data collection. The fact that some of the Kiambu County staff felt threatened by adoption of automated revenue collection system meant that they could give biased information about the same, compromising on the quality of information collected.

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## APPENDICES

### Appendix I: Questionnaire

This is a study on Revenue Collection Systems and Revenue Collection Levels in Lands, Housing and Physical Planning Department at Kiambu County. Provide relevant information as required.

#### Part A: Background Information

1) Gender

Male  Female

2) Age

Below 40 years  41 -45 years  46-50 years

Above 50 years

3) Highest Level of Education?

Diploma  Bachelors  Masters

4) How long have you worked for the Lands, Housing and Physical Planning Department at Kiambu County in years?

>2  3 to 5  6 to 10

#### PART B: Revenue collection systems used in Lands, Housing and Physical Planning Department at Kiambu County

5) Which revenue collection systems used in Lands, Housing and Physical Planning Department at Kiambu County over the last four years?

Manual

Automated

6) Are you satisfied with this revenue collection systems?

Manual  Yes  No

Automated  Yes  No

7) Which are the challenges of automated system operations?

Power outage

Loss of critical data

Staff competency in automated system usage

- 8) What gains did the county government benefit with from the revenue collection in use in 2012-2013 (manual) and 2014 to 2015 (automated); rate them using the racket scale of 1-5.

	2012-2013					2014 to 2016				
	1	2	3	4	5	1	2	3	4	5
Increase cash receipts										
Efficient Time Utilization										
Expanding its revenue base										
Control of the Collection Process										
Increasing collection efficiency										

- 9) Do you agree with the use of the following revenue collection systems?

Manual: Yes ( ) No ( )

Automated: Yes ( ) No ( )

- 10) In your own view to what extent had the use of manual and automated revenue collection systems brought?

Description	Manual					Automated				
	1	2	3	4	5	1	2	3	4	5
Powerful monitoring tool for revenue collection										
Efficiency and effectiveness in revenue collection										
Increased revenue										
Payment of duties and taxes anywhere										

### Section C: Challenges facing automated revenue collection systems

- 11) To what extent does each of the following challenges impede the automated revenue collection system in Lands, Housing and Physical Planning Department at Kiambu County?

Challenges	1	2	3	4	5
poor enforcement of payment of property rates					
People' failure to comply with paying rates					
Resistance from the employees in the county					
Poor tracking of economic activities					

Apathy on the part of revenue collectors					
Poor records keeping					

12) What factors motivated the county government management to use the automated revenue collection?

.....

13) What are the future strategies set by Kiambu county government to help increase revenue collection?

.....  
 .....

**Section D: Revenue Collection Levels**

Kindly tabulate in Kshs the amount of revenue collected in the years indicated.

	2011	2012	2013	2014	2015	2016
Manual revenue collection systems						
Automated revenue collection systems						

*Thank you very much*