

# Effect of Risk Assessment on Sustainable Revenue Collection in Embu County Government, Kenya

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**Abstract:** Governments in both developed and developing countries require revenue to finance their expenditures. Sustainable revenue collection is necessary in promoting efficiency in the service delivery and economic development of county governments. For effective mobilization of revenue, there is the need to put in place strong internal controls. This study intended to establish the effect of risk assessment on sustainable revenue collection in Embu county government. The study was supported by the theory of planned behavior. A cross sectional research design was adopted. The target population of the study was 115 employees from revenue department, 62 from finance and accounting department and 38 from internal audit department adding to a total of 215 employees. The sample size included 75 employees from revenue department, 40 from finance and accounting department and 25 from internal audit department adding to a total of 140 employees who were sampled based on stratified random sampling and simple random sampling. The study used primary data which was collected using semi structured questionnaires. Both content validity and construct validity was adopted in this study. Internal consistency reliability was measured using cronbach alpha coefficient. Data collected was analyzed using statistical package for social sciences version 24. Descriptive statistics used included means, frequencies, percentages and standard deviation. Inferential statistics was Pearson's product moment of correlation and multiple regression analysis. The study established that risk assessment has a positive and significant effect on sustainable revenue collection in Embu county government, Kenya ( $\beta=0.052$ ;  $P < 0.05$ ). This study recommends the establishment of risk assessment techniques in county governments since internal controls enhances sustainable revenue collection. The study will be of great benefit to policy makers of Embu county government in development of policies on sustainable revenue collection. Further, it will provide empirical evidence on revenue collection especially in Kenyan perspective.

**Keywords:** Sustainable revenue collection, Internal Controls, Risk Assessment.

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## 1. INTRODUCTION

### 1.1 Background of the Study

Governments in both developed and developing countries require revenue to finance their expenditures. Sustainable revenue collection is necessary in promoting efficiency in the service delivery and economic development of county governments (Robert, 2018). Sustainable revenue collection refers to operations in an entity where its dues are fully collected improving the collection and increasing the amount collected (Angelovska, 2010). For effective mobilization of revenue, there is the need to put in place a robust internal controls as cash is the most liquid asset that is vulnerable to loss if not properly controlled (Fight, 2002). Use of Automated systems has been proven to produce massive efficiencies in regard to increased revenue collections (Gideon & Alouis, 2013). The main challenges in revenue collection rotate around internal controls (Ismail, 2016).

A strong local revenue base for county government is essential for sustainability of devolved programs that ensures essential services are close to county residents. The local revenue collected forms a core means of building an independent and accountable local governance system (GOK, 2010). With the freedom to generate revenue to fund essential services and development projects the county governments have many sources at hand that include taxes such as property rates, entertainment taxes, business permits, user fees such as parking fees, market fees, game park fees, house rents, infrastructure maintenance fees, water and sewerage fees and trade licenses (COK, 2010). Internal control is one of the measures which can be used to ensure revenue is optimally collected (Fadzil, Haron, & Jantan, 2005).

It is the responsibility of those charged with governance and management to design and implement internal controls that provide reasonable assurance about the achievement of an entity's objectives with regard to reliability of the financial reporting, effectiveness and efficiency of operations and compliance with applicable laws and regulations (Mawanda, 2008). Control environment, risk assessment, communication and information and monitoring are the components of internal control (Hongming & Yanan, 2012).

Risk assessment involves assessment of factors that may have deterrent effects towards achieving organization objectives (Saarens and de Beelde 2006.). Organization need to conduct risk assessment process so as to enable them to actively analyze all the relevant risk facing the firm (Karagiorgos, Drogalas, Gotzamanis, & Tampakoudis, 2009). In majority of the county governments the responsibility to ensure that only acceptable risk faces the county government in regard to revenue loss is bestowed upon the management. In order for county governments to meet their budget estimates, they should grow their revenue base so as to increase their revenue collection (Bowrin, 2004). The design of internal controls that will ensure effectiveness and efficiency in revenue collection is the responsibility of the management.

As from 1998 to 2004 Brazil concentrated on establishing an efficient revenue collection system, also Brazil has maintained an updated data system that ensures information on revenue collection is up to date (Miller, 2005). Sustainable revenue collection in Brazil is due to strengthened internal control mechanisms (Briciu, Dănescu, Dănescu, & Prozan, 2014). This enabled Brazil government to raise a total of R\$ 1.342 trillion in the financial year 2017/2018, which is an increase of 0.59% over previous financial year 2016/2017 (FRAB, 2018). This was the first time revenue collection grew at a pace above inflation in four years. Thus maintaining of up to date information and communication system which is an element of internal control proves to have positive effect on sustainable revenue collection in Brazil.

In the 2018/2019 fiscal year India's fiscal deficit targets 4.7 percent lower than initially projected; the government is already lagging behind on its revenue collections target in the current financial year (CEIC, 2019). It budgeted 17.3 trillion rupees, but raised only 10.8 trillion rupees, or 63 percent of the target, in first nine months of the year (Beniwal, 2019). Since 2016/17 financial year, India has adopted an aggressive stance in strengthening its revenue collection systems and also embracing compliance which seeks to use enforcement as a means to curb evasion in its effort to increase the taxpayers base (Blackwell, 2017). Nevertheless noncompliance rates are high in India due to weak internals that failed to detect the many loopholes that have led to revenue shortfall (Tandon & Rao, 2017).Indonesia recorded a 20.3 percent increase in gas and non-oil income tax to 88.7 trillion and an 18.4 percent increase in value added tax to 67 trillion in 2017 (IRCA, 2018). Yuniati and Ladewi (2017) noted that risk assessment efforts by Indonesia government contributed to better performance in revenue collection. Improved tax realization was as a result of increased tax compliance after the ending of Indonesia's successful tax amnesty program. Integrity, ethical values of personnel tasked with creating, administering and monitoring the controls, commitment and competence of revenue officers are other reasons for sustainable revenue collection in 2017/2018 fiscal year (Arsal, 2018).

World Bank (2015) launched the first edition of a series of Somalia Economic Update publications. Accordingly, this study revealed that Somalia is doing better in the fiscal side in the history after civil war. In 2012 the Federal Government of Somalia collected \$30 million in domestic revenue having tax share of 0.9% to the GDP. Nevertheless the domestic revenue for the government increased to \$84.3 million financing 56% of the recurrent expenditures. A tax driven revenue contributed 70% of the revenue in the period of 2012-2014. Tax on international trade from the Mogadishu's port and airport was the key source for the government revenue contributing 91% of the domestic revenue between 2012 and 2014. While collection of the revenue performed considerably, Somalia is so far under challenging conditions including: weak collection capacity and absence of legal and regulatory framework which is attributable to weak internal controls, thus the problem of having unsustainable revenue collection which is a big threat to the provision and delivery of the public services in Somalia.

The South Africa revenue service collected 699 billion in tax revenue by end of November representing 56.2% of the 1.265 trillion projected in the 2017/18 national budget. Of the 482 billion was targeted from individuals, 282 billion had been collected by end of November 2018 compared with 262 for the same period in 2016/2017. The corporate tax collected was 98.3 billion by end of November against a target of 219 billion compared with 95 billion collected during the same period last year. With regard to VAT, a total of 186.5 billion had been collected by end of November 2018 against the budget of 312 billion compared with 180.8 billion in 2017 (SRA, 2018). A complete overhaul of the internal controls has been done by the South African government. This in turn has yield fruits towards sustainable revenue collection.

## **1.2 Kenyan Perspective on Sustainable Revenue Collection**

Sustainable revenue collection helps in co-funding development projects in county governments thus improving service delivery. Increase in financial expenditures by county governments necessitates the need for county government to collect much revenue. The birth of County governments in Kenya was in 2010 when the new constitution was promulgated. Kenya has got 47 county governments, whose arrangement; authority and mandate are the same as preserved in the Constitution. However, nearly all counties in Kenya are disadvantaged by insufficiency of vibrant financial resources mainly due to poor revenue collection (Gituma, 2017). Funds obtained by counties must follow certain rules and guidelines indicated by the current Kenyan Constitution. The first part of the Financial Aspect of Devolution is on the power to raise revenue. Article 209 (3) mandates the county governments to raise revenue through taxation. Entertainment taxes, property rates and any other tax that it is approved to administer by an Act of Parliament should be imposed by the County government. The second part is on collection of revenue. Once the taxes have been resolved in the new constitution, the organization of revenue includes the accumulation of taxes. Unanimity among decision makers does not exist as to whether Kenya Revenue Authority should gather revenue on behalf of Counties or whether it should help the counties build their own capacity to collect their own revenues. The third part concerns the ability to spend revenue. The constitution mandates county governments to raise and spend the revenue collected. Whatever the County government collects should be shared by the national and county government (Constitution of Kenya, 2010).

Equitable distribution of revenue is captured in Article 202. According to the article, the revenues collected by the national government should be equitably shared between the county and national governments. The article further posits that extra portions of revenue collected by the national government can be given unambiguously or restrictively to County governments (Kramon & Posner, 2011). In deciding the fair shares that each level of government gets, article 203 provides a detailed standard to be followed. While deciding the shares, this standard joins the standards of financial balance which must be followed. Counties have sufficient revenue stations to fund the current service levels, but revenue collection levels often do not meet projections (Gituma, 2017).

Revenue collection in County governments is deteriorated by corrupt practices issues which result into tax evasion through corruption by corrupt revenue collection officers (Muasya, 2014). The Kenya auditor general's report (2014) unearthed frauds and misuse of resources from the devolved revenue fund in several counties across the country. According to the Controller of Budget report (2014), Embu County is one of the 14 counties in Kenya whose revenue fell below amounts produced by the previous local authorities under their individual jurisdictions in the 2013/2014 fiscal year. Embu County has faced labor strikes and stoppages among its employees because of delayed salaries and/or poor payment of personnel working under the county governments which is a result of insufficiency in revenue collection. Embu is one of the 47 Counties in Kenya and according to the controller of budget report on the implementation of budgets for the 2017/18 financial year has pointed to an overall decline in revenue collected in Embu County. It collected Ksh 253 million which is also a 16 percent decline from what was collected previous year which was Sh303 million. Embu County targeted Sh653 million from own sources revenue and collected 38 percent of this target in the reporting period (Nyawira, 2018). This shows that revenue collection targets were not met in 2017/2018.

## **1.3 Statement of the Problem**

The governments have a responsibility of ensuring infrastructural development, economic and social empowerment of its citizen's failure of which renders the County government dysfunctional. In order to implement all this, governments need to collect sufficient revenue which is not the case as revealed by the auditor general's report of 2018. County governments are explicitly assigned the power to impose taxes such as infrastructure maintenance fees, property rates, entertainment taxes, user fees such as parking fees, game park fees, house rents, water and sewerage fees, trade licenses and market fees (CoK, 2010).. According to the controller of budget report (2018) most counties missed their annual revenue collection targets in the 2017/18 financial year. Out of 47 counties only Tana River, Kwale and Migori counties met their targets. Embu County is not an exception to this underperformance in revenue collection. The county was faced by a huge shortfall on local ordinary revenue collection where total ordinary local revenue collections amounted to Ksh. 246,351,485 compared to a target of Ksh 653,490,000 which represents a revenue shortfall of Ksh. 407,138,515 which is under collection by 62.3 percent. The underperformance in local revenue collection was largely across all the revenue collection sites and revenue strings. Stalled projects, inability to provide essential services to the resident, strikes among employees are rampant in Embu County which is a result of insufficiency in revenue collection. According to auditor general this was attributed to weak internal control which seem to be ineffective. Few studies have been done on the effect of internal control systems on revenue collection in Kenya. For example, Muasya (2014) conducted a study on internal

controls and revenue collection in County governments and noted that lack of proper information and communication encourages collusion to fraud and loss of revenue but the study didn't include components of information and communication. County governments have modernized their internal control systems with the bid to increase revenue collections in Kenya (Kimani, 2015). The current study therefore seeks to find out the effect of internal controls on sustainable revenue collection in Embu County Government.

#### **1.4 General Objective**

The general objective of the study was to examine the effect of risk assessment on sustainable revenue collection in Embu County government.

#### **1.5 Hypothesis of the Study**

*H<sub>02</sub>: Risk assessment has no significant effect on sustainable revenue collection in Embu County government.*

## **2. THEORETICAL REVIEW**

This study will be guided by the theory of prospect

### **2.1 Prospect Theory for Risk Assessment**

The theory was founded by Tversky and Kahneman in 1979. The theory is widely viewed as the best available description of how people evaluate risk in experimental settings. The theory predicts that individuals tend to be risk averse in a domain of gains or when things are going on well and relatively risk seeking in a domain of losses. It is a theory of decision making under conditions of risk. Decisions are based on judgments. Judgments are assessments about the external state of the world (Post, Van den Assem, Baltussen & Thaler, 2008). They are made especially challenging under conditions of uncertainty, where it is difficult to foresee the consequences or outcomes of events with clarity. Decisions involve internal conflict over value tradeoffs. They are made difficult when choices promote contradictory values and goals.

Prospect theory directly addresses how the choices are framed and evaluated in the decision making process. Tversky and Kahneman (1979) applied psychophysical principles to investigate judgement and decision making. The application of this theory in this study is on the risk assessment component of internal control where psychophysical principles are used to investigate judgment and decision making. Prospect theory looks at the framing phase and evaluation phase of the decision making process which in this context falls within the purview of risk assessment. The evaluation phase of the prospect theory encompasses the value function and the weighting decision and since the rationale behind risk assessment is for purposes of making decisions to improve on revenue collection then this theory is more relevant in our context. The theory is grounded on the following assumptions: Decisions are made based on a predetermined reference point and framing effect affects how decisions are made. The theory is criticized for it does not define precisely what a gain or loss is. Koszegi and Rabin (2006) argue that Kahneman and Tversky (1979) offered relatively little guidance on how the reference point is determined. The theory has also been criticized on the grounds that its predictions might not retain accuracy outside the sections where the predictions are conducted from where the stakes are often higher and where people may have significant experience making the decision at hand (Post et al., 2008). Besides the above criticisms this study will adopt this theory to critically assess the effect of risk assessment on revenue collection as the theory offers an accurate description of risk attitudes in experimental settings.

### **2.2 Empirical Review**

This section presents empirical research findings on the effect of risk assessment, communication and monitoring and evaluation on revenue collection.

#### **Risk Assessment and Sustainable Revenue Collection**

Owuor (2010) conducted a study on analysis of risks that affect value added tax revenue collection by Kenya revenue authority. The purpose of the study was to identify the risks that affect revenue collection and secondly to analyze the impact of those risk. The research design used was cross sectional as the study tried to establish factors associated with the declining revenue at KRA. The sampling technique applied was probability sampling which used stratified sampling. Semi structured questionnaires were administered to the staff. Qualitative data analysis was used to analyze the data. The study found that risks do affect revenue collection. The study didn't capture measures of risk control which the current study will incorporate.

Hadrich and Johnson (2015) conducted a study on estimation of risk management effects on revenue collection of United States of America (USA) dairy farms. The main objective was to examine how risk management tools affected revenues and expenses across US dairy farms. The research data was adopted from 2010 US Department of Agriculture with aim to examine how risk management tools affected revenues and expenses across US dairy farms. The survey was conducted in 26 states with intention to collect information on costs and returns to individual dairy farms. Matching methodology was used to evaluate the effect of risk management tools on revenues and expenses. The findings of the study indicated the need to use risk management tools for enhancement of revenue in dairy farming. The study was done in another global region but the current study will be done in Kenya.

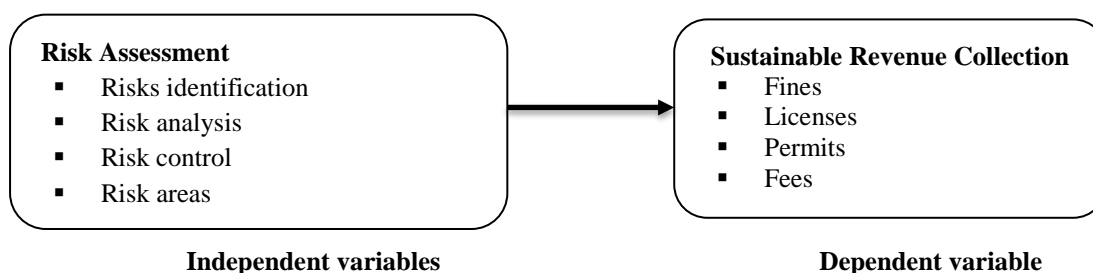
Koenig and Meissner (2016) conducted a study on Risk minimizing strategies for revenue management problems with target values. The main objective of the study was minimizing the risk of failing to achieve a given target revenue. The study adopted risk-averse decision maker. The decision maker concentrated on main objective of minimizing the risk of failing to achieve a given target revenue instead of focusing on maximizing the expected revenue. The researchers used finite Markov decision processes to interpret the revenue management problem. The study findings indicated that minimizing the risks attributed to achieving revenue targets. The study didn't identify the process of analyzing and controlling the risks which the current study seeks to incorporate to determine its effects in revenue collection.

Yeboah and Amoako (2016) conducted a study on impact of operational risks on achievement of internally generated funds (IGF) in customs division of Ghana revenue authority. The objective of the study was to determine impact of operation risk in revenue collection by GRA. The study adopted cross sectional survey where collections from Accra, Takoradi and Tema were selected from the southern Ghana and collections from Aflao, Kumasi and Sunyani were selected from the northern Ghana. Mean and standard deviations were computed and independent samples T test was used to statistically compare mean responses of northern sector customs division and Southern sector customs division. The study findings indicated that People risk, external risks and process had significant negative impact on achievement of revenue targets but system risks did not significantly impact on achievement on IGF. The study didn't capture the measures to control risks which the current study seeks to incorporate.

Ngui (2010) conducted a study on the relationship between risk profiling and revenue performance in KRA in Kenya. The purpose of the study was to investigate the relationship between the risk profiling and revenue performance in KRA. Data was collected from KRA revenue reports; also data was extracted from the working files of 20 taxpayers that were purposefully sampled for this study to cover all the sectors or category of taxpayers KRA administers. Pearson correlation coefficient was computed, which showed a strong positive relationship between risk level and the amount of additional tax collected, ( $r = .607, P < 01$ ). Regression analysis was also used to determine the explanatory power of risk level or score in the variance of the amount of additional tax collected. The findings of the study concluded that realistic risk profiling leads to increased revenue performance. The study didn't include risk control which the current study seeks to include as a component of risk assessment.

### 2.3 Conceptual Framework

The conceptual framework gives the relationship between independent and dependent variables of the study (Luvavo, 2013). The independent variables identified was risk assessment. Risk identification, risk analysis risk control and risk areas are sub constructs for risk assessment. Sustainable revenue collection of Embu County is the dependent variable and fines, licenses, permits, and fees are the sub constructs of revenue collection. It is hypothesized that independent variable will influence the dependent variable.



**Figure 2.1 Conceptual Framework**

### 3. RESEARCH METHODS

#### 3.1 Research Design

Research design is a plan for collecting and utilizing data to enable desired information to be obtained with sufficient precision or so that a hypothesis can be tested properly (Kothari, 2004). The study used a cross sectional research design. Kothari (2004) describes cross sectional design as fact-finding enquiries, involving asking questions often in the form of a questionnaire of a large group of individuals, adding that the major purpose is description of the state of affairs as it exists at present and represent the findings and information statistically.

#### 3.2 Population of the Study

A population has been defined as the total collection of elements about which inferences are made and refers to all possible cases which are of interest for a study (Sekaran & Bougie, 2016). The target population for the study was the staffs from Embu county treasury department. The accessible population refers to a subset of the target population which the researcher can easily reach in order to select a representative sample (Mugenda, 2008). Therefore, the accessible population of the study was 215 employees from Embu county treasury department from where the representative sample was selected. The department includes 115 employees from revenue department, 62 staffs from finance and accounting department, and 38 staffs from internal audit department as depicted in Table 3.1.

**Table 3.1: Target Population**

Sub department	Population	Percentage
Revenue Department	115	53%
Finance & accounting department	62	29%
Internal audit department	38	18%
<b>Total</b>	<b>215</b>	<b>100.0%</b>

(Source: Embu County Government Treasury Department, 2019)

#### 3.3 Sampling Size and Sample Technique

According to Quinlan (2011), one principle of sample size is, the smaller the population, the bigger the sample ratio has to be for an accurate sample. Zikmund, Babin, Carr and Griffin (2010) add that the following factors are required to determine sample size: Heterogeneity of the population, magnitude of the acceptable error and the confidence level. The sample size for this research was obtained using the Yamane's (1967) formula for finite population.

$$n = \frac{N}{1 + N(e)^2} \quad n = \frac{215}{1 + 215(0.05)^2} = 140 \dots\dots\dots \text{Equation 3.1}$$

Proportionate stratified sampling was used to allocate the stratum samples. For the sampling to be proportionate, the sampling fraction (or interval) must be identical in each stratum.  $n/N$  is used to determine the sampling fraction, which in this case is  $140/215 = 0.65$ . The sampling fraction is then used in each stratum to determine a proportionate stratified sample as follows:

**Table 3.2: Sample Size**

S/no	Stratas	Population	Sampling Fraction	Sample size
1.	Revenue Department	115	0.65	75
2.	Finance & Accounting	62	0.65	40
3.	Internal Audit Department	38	0.65	25
	<b>Total</b>	<b>215</b>		<b>140</b>

Simple random sampling was used to get samples of employees from the different strata. The actual enterprises for data collection will be arrived at by using stratified random sampling from each stratum. The stratification was based on revenue department, finance and accounting department and internal audit department.

**3.4 Data Collection Instruments**

The primary data for this study was collected through questionnaires. A questionnaire is a pre-formulated written set of questions to which the respondents record the answers usually within rather closely delineated alternatives (Newing, 2011). The use of primary data was to ensure the most up-to-date information and realistic view to answer the hypotheses (Saunders, 2012).

**3.5 Pilot Test**

According to Sreevidya and Sunitha (2011) pilot study refers to a research study that is conducted before the intended or the main study. Saunders (2012) posits that the purpose of the pilot survey is to refine the instruments so that the respondents do not have a problem in answering the questions and also provide for easy recording and analysis of data. A pilot study sample should be 10% of the accessible population (Cann, Connolly, Ruuska, MacNeil, Birmingham, Vandervoort, & Callaghan, 2008). In this study the pilot study sample size was 10% of 140 employees of Uasin Gishu County government treasury department thus 14 respondents participated in the pilot study.

**3.5.1 Validity of Research Instrument**

This study adopted both content validity and construct validity. Content validity addresses how well the items developed to operationalize a construct provide an adequate and representative sample of all the items that might measure the construct of interest (Mbwesa, 2006). Construct Validity is the experimental demonstration that a test is measuring the construct it claims to be measuring (Mbwesa, 2006). Factor analysis was performed to assess construct validity. If all the individual loadings are above the minimum of 0.5 recommended by Hair et al. (2007), then the instrument is good to be used.

**3.5.2 Reliability of Research Instrument**

Reliability is concerned with the extent to which a research instrument yields the same results (Mugenda & Mugenda, 2003). The study adopted internal consistency reliability since it is the most commonly used measure of reliability in applied settings. It also requires only one sample of data to estimate the internal consistency reliability (Kothari, 2004). Cronbach’s alpha coefficient is mostly used to describe measure of reliability. It measures how consistently participants respond to one set of items. Sreevidya and Sunitha (2011) recommends that a Cronbach’ alpha co-efficient of above or equal to 0.70 is sufficient for most cases to test reliability

**Model**

$$Y = \alpha + \beta_1 X_1 + \epsilon \dots\dots\dots \text{Equation 3.2}$$

Where

Y represents dependent variable (Revenue collection)

$\alpha$  represents the regression constant.

$\beta_1$  represents change in y for each increment change in  $x_1$ ,

$X_1$  represents risk assessment

**4. RESEARCH FINDINGS AND DISCUSSIONS**

**4.1 Response Rate**

The study examined 140 employees in Embu County Government, Kenya where a total of 140 questionnaires were issued. Of the 140, 136(97.1%) questionnaires were returned of which 2 were unfilled since one of the respondent was not present in his office while the other claimed to be busy and not able to fill them, 4(2.9%) questionnaires were misplaced and could not trace them. Mugenda (2008) hypothesized that a response rate of above 50% is considered good for analysis. Therefore response rate of 134 (96%) was appropriate to be analyzed. The results for response rate are presented in the Table 4.1.

**Table 4.1: Response Rate**

Responses	No	Percentage
Administered questionnaires	140	100
Unreturned	4	2.9
Usable questionnaires	134	96

#### 4.2 Reliability Test Results

The questionnaire tool was subjected to a pilot study to determine its reliability. The pilot study involved 10% of the sampled respondents hence, 14 respondents were randomly picked from treasury department in Uasin Gishu county government. The pilot results are as presented in Table 4.2;

**Table 4.2: Reliability Results**

Objective	No. of items	Alpha value
Risk Assessment	4	.7025

The pilot results indicated that the reliability of sustainable revenue collection was 0.7700 using Cronbach’s alpha test of reliability; the reliability of risk assessment was 0.7025. The results revealed that all the variables gave an alpha test value of greater than 0.70, therefore all the items were regarded reliable.

#### 4.3 Background Information

##### 4.3.1 Age of the Respondents

The intentions of the study were to find out how the respondents were distributed according to their age bracket. The results were as indicated in the Table 4.3.

**Table 4.3: Age of the Respondents**

Age bracket	Frequency	Percent
20 to 30 years	49	36.6
31 to 40 years	41	30.6
41 to 50 years	20	14.9
51 to 60 years	24	17.9
Total	134	100.0

From the findings of the study it was established that majority of the respondents 49(36.6%) were in the age bracket of 20 to 30 years, followed by respondents in the age bracket of 31 to 40 years who were 41(30.6%), followed by respondents in age bracket of 51 to 60 years who were 24(17.9%) and lastly the least age bracket comprised of 41 to 50 years who were 20(14.9%). The finding implies that most of the respondents in the treasury department are of young age which means that they have great chance to work for a long period.

##### 4.3.2 Gender of the Respondents.

This study also examined how employees in treasury department of Embu county government were distributed according to their gender. The results of the analysis are presented in Table 4.4.

**Table 4.4: Gender of the Respondents**

Gender	Frequency	Percent
Male	83	61.9
Female	51	38.1
Total	134	100.0

The findings established that 83(61.9%) respondents were male while 51(38.1%) were female. This shows that sampled respondents were fairly balanced in terms of gender. The results are in line with the provision of constitution of Kenya (2010) that requires for representation of one gender not to exceed two third.

##### 4.3.3 Respondents Level of Education

The respondents of the study were asked to indicate their level of education in order to determine whether it influences the sustainable revenue collection in Embu County. The results of the analysis are presented in Table 4.5.



**Table 4.5: Respondents Level of Education**

Level of Education	Frequency	Percent
Diploma	32	23.9
Bachelor's Degree	68	50.7
Masters	29	21.7
Other Qualification	5	3.7
Total	134	100.0

The study findings established that 32(23.9%) are diploma holders, 68(50.7%) are degree holders, 29(21.7%) of the respondents are masters holders and 5(3.7) of the respondents have other qualifications like certified public accountant. From the findings it was established that the majority of the respondents have bachelor's degree as their highest level of education. The level of education provided a good picture of how one understands the research topic on internal controls and sustainable revenue collection.

#### 4.3.4 Respondents Duration of Employment

The study respondents were asked to indicate the period in which they have been serving in the department of treasury in Embu County. The findings were as shown in table 4.6.

**Table 4.6: Respondents Duration of Employment**

Duration of employment	Frequency	Percent
Below 5 Years	71	53.0
Between 5-10 Years	28	20.9
10 Years and Above	35	26.1
Total	134	100.0

The study findings established that 71(53.0%) of the respondents have worked in Embu county treasury department for a duration of less than 5 years, 28(20.9%) of the respondents have worked in the treasury department in respective county for a period of between 5 to 10 years and 35(26.1%) of the respondents have worked in the treasury department of Embu county for a period of over 10 years. The study findings implies that majority of the respondents have been working in Embu county treasury department for over 1 year, had knowledge and understood the information the researcher was looking for. This was in agreement with findings of Braxton (2008) who posit that the respondents with high working experience assist in providing reliable data on the sought problem since they have technical experience on the problem being studied.

#### 4.4 Descriptive Findings and Discussions

The study examined the views of respondents on internal controls and sustainable revenue collection in Embu County, Kenya. The respondents were requested to indicate their views on a likert scale of 5-1, SA representing Strongly Agree, A representing Agree, N representing Neutral, D representing Disagree and SD representing Strongly Disagree. To establish the responses opinion on independent and dependent factors, the responses were tabulated descriptively where percentages, frequencies, mean and standard deviations were used to summarize the study variables.

#### Descriptive Statistics for Risk Assessment on Sustainable Revenue Collection in Embu County

The second objective of the study was to establish the effect of risk assessment on sustainable revenue collection in Embu county government. The study focused on risk identification, risk analysis, risk control and risk areas as the main sub constructs of risk assessment. The researcher was interested on the opinion of respondents on the extent to which such sub constructs affect sustainable revenue collection in Embu County. The descriptive results were as represented in Table 4.6.

**Table 4.6: Descriptive Statistics for Risk Assessment**

		S.D	D	N	A	S.A	Mean	Std. Deviation
<b>i. There is identification of revenue loss and risks by the management</b>	F	15	6	22	49	42	3.72	1.265
	%	11.2	4.5	16.4	36.6	31.3		
<b>ii. Embu County has adopted risk evaluation procedures</b>	F	8	27	41	40	18	3.25	1.107
	%	6.0	20.1	30.6	29.9	13.4		
<b>iii. Embu County has put risk mitigation procedures</b>	F	12	21	41	43	17	3.24	1.139
	%	9.0	15.7	30.6	32.1	12.7		
<b>iv. There is existence of surveillance officers to identify risk areas in Embu County</b>	F	19	31	32	30	22	3.04	1.300
	%	14.2	23.1	23.9	22.4	16.4		

The study respondents were requested to give their opinions in regards to whether there is risk identification in regard to revenue collection. Table 4.8 indicates that majority of respondents 91(67.9%) agreed that risk identification affects revenue collection in Embu county. 21(15.7%) of the respondents disagreed with the statement. Risk identification was further established to affect revenue collection in Embu county with (mean=3.72, std. Dev. =1.265). Identification of risk helps to enhance revenue collection which is in line with findings of Hadrich and Johnson (2015). The findings of descriptive statistics indicates that majority of respondents rated the statement positive indicating that risk identification is necessary in achievement of sustainable revenue.

In regard to risk evaluation respondents were requested to give their opinions in regards to whether there is risk evaluation in regard to revenue collection. Table 4.6 indicates that majority of respondents 58(43.3%) agreed that risk evaluation was adopted and affects revenue collection in Embu county. 35(26.1%) of the respondents disagreed with the statement. Risk evaluation was further established to affect revenue collection in Embu county with (mean=3.25, std. Dev. =1.107). Risk evaluation helps to enhance revenue collection which is in line with the findings of Koenig and Meissner (2016). The findings of descriptive statistics indicates that majority of respondents rated the statement positive indicating that risk evaluation is necessary in achievement of sustainable revenue.

The study respondents were requested to give their opinions in regards to whether there are risk mitigation procedures in regard to revenue collection. Table 4.8 indicates that majority of respondents 60(44.2%) agreed that risk mitigation procedures was adopted and affects revenue collection in Embu county. 33(24.2%) of the respondents disagreed with the statement. Risk mitigation procedures was further established to affect revenue collection in Embu county with (mean=3.24, std. Dev. =1.138). Risk mitigation helps to enhance sustainable revenue collection which is in line with the findings of Ngui (2010)). The findings of descriptive statistics imply that majority of respondents rated the statement positive indicating that risk mitigation procedures is necessary in achievement of sustainable revenue.

In regard to risk areas respondents were requested to give their opinions in regards to whether there is identification of risk areas in regard to revenue collection. Table 4.8 indicates that majority of respondents 52(38.8%) agreed that identification of risk areas was adopted and affects revenue collection in Embu county. 50(37.2%) of the respondents disagreed with the statement. Identification of risk areas was further established to affect revenue collection in Embu county with (mean=3.04, std. Dev. =1.300). Identifying risk areas is necessary in achieving sustainable revenue collection which is in line with findings of Yeboah and Amoako (2016). The findings of descriptive statistics imply that majority of respondents rated the statement positive indicating that identification of risk areas is necessary in achievement of sustainable revenue collection.

#### 4.5 Descriptive Statistics on Sustainable Revenue Collection of Embu County

The study focused on sustainable revenue collection of Embu county and partially addressed on, fines, licenses, permits and fees.as the main indicators of sustainable revenue collection. The researcher wanted the opinions of the respondents on how such indicators relate to sustainable revenue collection of Embu County. The results were as presented in the Table 4.7.

**Table 4.7: Sustainable Revenue Collection**

		S.D	D	N	A	S.A	Mean	Std. Deviation
<b>i. Collection targets from fines are realistic and achievable</b>	F	21	16	22	33	42	3.44	1.438
	%	15.7	11.9	16.4	24.6	31.3		
<b>ii. Collections targets from licenses are realistic and achievable</b>	F	10	24	39	36	25	3.31	1.185
	%	7.5	17.9	29.1	26.9	18.7		
<b>iii. Collection targets from trade permits are realistic and achievable</b>	F	15	21	45	39	14	3.12	1.144
	%	11.2	15.7	33.6	29.1	10.1		
<b>iv. Collections targets from fees are realistic and achievable</b>	F	23	26	43	26	16	2.90	1.246
	%	17.2	19.4	32.1	19.4	11.9		

The study respondents were asked to give their opinion to the statement that revenue collections from fines are realistic and achievable in their contribution to sustainable revenue collection. The findings of the study as presented in Table 4.11 indicates that majority of the respondents 75(55.9%) agreed to the statement that collections from fines contributes to sustainable revenue collection. 37(27.6%) of the respondents disagreed with the statement. It was further established that fines increases revenue collection of Embu county with mean (mean=3.44, std. Dev. =1.438). Sustainable revenue collection can be attributed from collections from fines which is in line with findings of musya (2014). The findings of the descriptive statistics imply that majority of respondents agreed that achieving collection targets from fines contributes to sustainable revenue collection.

The respondents were asked to give their opinion to the statement that revenue collections from licenses are realistic and achievable in their contribution to sustainable revenue collection. The findings of the study as presented in Table 4.11 indicates that majority of the respondents 61(45.6%) agreed to the statement that collections from fines contributes to sustainable revenue collection. 34(25.4%) of the respondents disagreed with the statement. It was further established that licenses increases revenue collection of Embu county with mean (mean=3.31, std. Dev. =1.185). Sustainable revenue collection can be attributed from collections from licenses which are in line with findings of Nyawira (2018). The findings of the descriptive statistics imply that majority of respondents agreed that achieving collection targets from licenses contributes to sustainable revenue collection.

The study respondents were asked to give their opinion to the statement that revenue collections from trade permits are realistic and achievable in their contribution to sustainable revenue collection. The findings of the study as presented in Table 4.11 indicates that majority of the respondents 51(39.5%) agreed to the statement that collections from trade permits contributes to sustainable revenue collection. 36(26.9%) of the respondents disagreed with the statement. It was further established that trade permits increases revenue collection of Embu county with mean (mean=3.12, std. Dev. =1.144). Sustainable revenue collection can be attributed from collections from trade permits which are in line with findings of CoK (2010). The findings of the descriptive statistics imply that majority of respondents agreed that achieving collection targets from trade permits contributes to sustainable revenue collection.

The study respondents were asked to give their opinion to the statement that revenue collection from fees realistic and achievable in their contribution to sustainable revenue collection. The findings of the study as presented in Table 4.11 indicates that majority of the respondents 49(36.6%) disagreed to the statement that collections from fines contributes to sustainable revenue collection. 42(31.3%) of the respondents agreed with the statement. It was further established that fees increases revenue collection of Embu county with mean (mean=2.90, std. Dev. =1.246). Achieving revenue targets from taxes and fees helps to maintain sustainable revenue collection which is in line with findings of Obara and Nangih (2017). The findings of the descriptive statistics imply that majority of respondents disagreed that achieving collection targets from fines contributed to sustainable revenue collection.

#### 4.6 Inferential Statistics

Inferential analysis was conducted in order to determine the existence of relationships between the study variables. The study conducted inferential analysis using Pearson’s product moment correlation coefficient and regression analysis. Correlation analysis of variable under study was conducted to establish where there was any significant relation between dependent and independent variables under study. The correlation results of the analysis are as tabulated below:

**Table 4.8 Overall Correlation Analysis Results**

		Sustainable revenue	Risk assessment
Sustainable revenue	Pearson correlation Sig.(2 tailed)	1	
Risk assessment	Pearson correlation Sig.(2 tailed)	.691*	1
		.027	

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

\*. Correlation is significant at the 0.05 level (2-tailed).

##### 4.6.1 Correlation analysis

The relationship between risk assessment and sustainable revenue collection was analyzed. The results show a positive and statistically significant relationship with ( $r = 0.691$ ;  $p < 0.05$ ). This implies that a unit change in risk assessment leads to 69.1% change on sustainable revenue collection. Therefore, County governments in Kenya should see risk assessment as a positive element in enhancing sustainable revenue collection. The finding concurs with Koenig and Meissner (2016) on their study on risk minimizing strategies for revenue management problems with values in USA. They established that risk assessment has a positive and significant effect on sustainable revenue collection.

##### 4.6.2 Multiple Regression Analysis

The study used multiple linear regression analysis to determine the combined linear relationship between the dependent variable (sustainable revenue collection) and independent variable (risk assessment). The results from multiple regression analysis are shown in Table 4.9.

**Table 4.9: Multiple Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.743 <sup>a</sup>	.196	.571	2.696

a. Predictors: (Constant), Risk Assessment.

From the table above, R-square is used to evaluate the best fit of a model. R square coefficient of determination is the statistical measure of how well the regression line approximates the real data. It measures the proportion of the variation in dependent variable. R – is the multiple correlation coefficients which was 0.743 considered as one of the measure of the quality of prediction of the dependent variable (sustainable revenue collection) in the study. This indicated a strong correlation between the independent variables and the dependent variables.  $R^2$  being the coefficient of determination at 0.196 which gives the proportion of variance in the dependent variable that is explained by the independent variables. As such the findings showed that the independent variables taken together accounted for only 19.6% of the total variance in sustainable revenue collection. The adjusted R- squared is a modified version of R-squared that has been adjusted for the number of predictors in the model which shows combined variation of control environment, risk assessment, information and communication and monitoring accounting 0.571 of the sustainable revenue collection. The standard error of the estimate of 2.696 indicates how the regression model is using the units of the dependent variable.

##### 4.6.3 Assessing the Fit of Multiple Regression Model

Analysis of variance (ANOVA) was employed to measure the differences in means between sustainable revenue collection and its predictor variables. The results are shown in Table 4.10

**Table 4.10: ANOVA**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression		228.550	4	57.137	7.864
	Residual	937.279	129	7.266		.000 <sup>b</sup>
	Total	1165.828	133			

a. Predictors: (Constant), Risk Assessment

b. Dependent Variable: Sustainable Revenue Collection

The F-ratio was 7.864 at 4 degree of freedom which is the variable factor. This represented the effect size of the regression model and the model is significant at 95% confidence level ( $p < 0.05$ ) indicating that sustainable revenue collection can be predicted from the aforementioned independent variables.

#### 4.6.4 Regression Coefficient

T-test of statistical significance of each regression coefficient was conducted in order to determine the beta which shows how strongly each independent variable affects dependent variable. Coefficient analyses from multiple regression analysis are as shown in Table 4.11.

**Table 4.11: Regression Analysis**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.080	1.705		3.566	.000
	Risk assessment	.152	.117	.043	.540	.001

Dependent Variable: Sustainable Revenue Collection

Table 4.10 shows the regression coefficients results whereby risk assessment had a positive and significant effect on sustainable revenue collection of ( $\beta=0.152$ ;  $p < 0.05$ ). The regression model for sustainable revenue collection can be outlined as follows;

$$Y = 6.080 + 0.152 X_1 \dots\dots\dots \text{Equation 4.1}$$

The constant value of 6.080 implies that at zero control environment, risk assessment, information and communication and monitoring sustainable revenue collection is at 6.080 units. The coefficient 0.152 implies that improvement of risk assessment by one unit increases sustainable revenue collection of Embu County.

#### Hypothesis Testing

The study was guided by four hypotheses which were tested at a predictable level of 0.05. The results are summarized in table 4.18.

#### Hypothesis Testing of Risk Assessment and Sustainable Revenue Collection

The second null hypothesis ( $H_0$ ) stated that; risk assessment has no significant effect on sustainable revenue collection in Embu County. The study findings indicated that there was positive and statistical significant effect of risk assessment on sustainable revenue collection ( $\beta=0.152$ ;  $p < 0.05$ ). The study therefore rejected the null hypothesis at 95% level of significance. This implies that risk assessment is a necessary tool to unearth areas of revenue loss so as seal the loopholes of revenue loss and enhance sustainable revenue collection. These findings concur with the findings by Owuor (2010) who found that risk assessment has a significant effect on sustainable revenue collection. These findings also concur to those found by Hadrich and Johnson (2015) who indicated the need to use risk management tools for enhancement of revenue collection. In addition Koenig and Meissner (2016) stated that there is a need to minimizing risks attributed to achieving revenue targets and Yeboah and Amoako (2016) argued that lack to identify inherent risks in revenue collection is a major barrier in achievement of sustainable revenue collection.

## 5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Summary of Findings

The study was designed to find out the effect of internal risk assessment on sustainable revenue collection in Embu County, Kenya. The study findings revealed that there was a significant relationship between risk assessment and sustainable revenue collection in the County Government. This implied that risk assessment is a factor to be considered for the enhancement of sustainable revenue collection in Embu county government.

### 5.2 Conclusion

From the findings, it was concluded that risk assessment being necessary tool for detecting revenue loss from different revenue sites should be embraced as it has a significant effect on sustainability of revenue collected by the County Government. If the county government identifies revenue loss and risks, it will lead to subsequent growth in the revenues collected by the County. Thus it's necessary to adopt a risk assessment procedure that reduces exposures to revenue loss.

### 5.3 Recommendations

In light of the findings and conclusion of the study, the following recommendations are made:

#### Policy Recommendation

The following suggestions for action are made in this study: The county government's management should adopt policies on risk evaluation procedures which will help to mitigate revenue loss. Risk mitigation procedures and surveillance officers should be available at the County governments to identify risk areas from different revenue sites.

#### Recommendations on Theories

The study indicated the respondents agreed that risk assessment is a critical factor in ensuring county government achieves sustainable revenue collection. This is supported by prospect theory which outlines how choices are made during making of decision considering the risk averse nature of every decision maker who will try to avoid losses. County managements in their endeavor to meet revenue targets for efficient service delivery of services and infrastructural development to the residents should device possible means to reduce any revenue loss in different revenue sites available. This will be possible through frequent assessments of risks that can harbor achievement of sustainable revenue collection.

#### Suggestion for Further Research

This study focused on the effect of risk assessment on sustainable revenue collection. Future research should done in other government entities engaged in business like Kenya Pipeline Company, Kenya railways and Kenya ports authority in order to find out whether there is effectiveness of Internal Controls in achieving value in other government entities. Lastly, further research can also be done on a mediated relationship with internal control as a moderator with another independent variable which affects revenue collection.

## REFERENCES

- [1] Angelovska, M. (2010). Cash Management Techniques: The Case of Cash Forecasting in Mercator. *Journal of Accounting and Economics*, 40(3), 81- 88.
- [2] Bowrin, A. R. (2004). Internal Control in Trinidad and Tobago Religious Organizations. *Accounting, Auditing & Accountability Journal*, 17(1), 121-152.
- [3] Briciu, S., Dănescu, A. C., Dănescu, T., & Prozan, M. (2014). A Comparative Study of well Established Internal Control Models. *Procedia Economics and Finance*, 15(4), 1015-1020.
- [4] Cann, A. P., Connolly, M., Ruuska, R., MacNeil, M., Birmingham, T. B., Vandervoort, A., & Callaghan, J. P. (2008). Inter-Rater Reliability of Output Measures For Posture Matching Assessment Approach: A Pilot Study With Food Service Workers. *Ergonomics*, 51(4), 556-572.
- [5] Carr, B. (2012). Monitoring Practices of Private Vendors in Revenue Collection at Electricity Company of Ghana. *A Journal of Practice & Theory*, 3(1), 17-24.
- [6] Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.

- [7] Fadzil, F. H., Haron, H., & Jantan, M. (2005). Internal Auditing Practices and Internal Control System. *Managerial Auditing Journal*, 20(8), 844-866.
- [8] Gideon, Z., & Alouis, M. (2013). Systems, Processes and Challenges of Public Revenue Collection in Zimbabwe. *American International Journal of Contemporary Research*, 3(2), 49-60.
- [9] Hirschi, T. (1969). A Control Theory of Delinquency. *Criminology Theory: Selected Classic Readings*, 5(2), 289-305.
- [10] Karagiorgos, T., Drogalas, G., Gotzamanis, E., & Tampakoudis, I. (2009). The Contribution of Internal Auditing to Management. *International Journal of Management Research and Technology*, 3(2), 417-427.
- [11] Koenig, M., & Meissner, J. (2016). Risk Minimizing Strategies for Revenue Management Problems with Target Values. *Journal of the Operational Research Society*, 67(3), 402-411.
- [12] Kombo, D. K., & Tromp, D. L. (2009). *Introduction to Proposal writing* (2<sup>nd</sup> Ed.). Nairobi: Pauline Publications.
- [13] Kothari C.R. (2004). *Research Methodology: Methods and Techniques* (3<sup>rd</sup> Ed.). New Dheli: New Age International Publishers.
- [14] Mawanda, S. P. (2008). Effects of Internal Control Systems on Financial Performance in an Institution of Higher Learning in Uganda. *Contemporary Accounting Research*, 18(2), 609-620.
- [15] Mugenda, O. M., & Mugenda, A. G. (2003). *Research Methods: Quantitative and Qualitative Approaches* (2<sup>nd</sup> Ed.). Nairobi, Acts Press.
- [16] Mbwesa, J. K. (2006). *Introduction to Management Research. A student Handbook*: (2<sup>nd</sup> Ed.). Nairobi: Basic Modern Management Consultants.
- [17] Newing, R. (2011). Environment: long-term Impact of Green Issues Played Down. *International Journal of Economics and Finance*, 3(1), 9 – 17.
- [18] Obara, L. C., & Nangih, E. (2017). Boosting Tax Revenue in Nigeria: A Reflection of Revenue Authority's Tax Monitoring Model Research. *Journal of Finance and Accounting*, 8(24), 222-230.
- [19] Owuor, J. (2010). Analysis of Risks that Affect Value Added Tax Revenue Collection by Kenya Revenue Authority. *Universal Journal of Accounting and Finance*, 2(2), 27-34.
- [20] Post, T., Van den Assem, M. J., Baltussen, G., & Thaler, R. H. (2008). Deal or no Deal? Decision Making Under Risk in a Large-Payoff Game Show. *American Economic Review*, 98(1), 38-71.
- [21] Quinlan, C. (2011). *Business Research Methods*. Hampshire, UK: Cengage Learning EMEA.
- [22] Saunders, M. N. (2012). Choosing Research Participants. *Qualitative Organizational Research: Core Methods and Current Challenges*, 12(2), 35-52.
- [23] Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill Building Approach* (3<sup>rd</sup> Ed.). John Wiley & Sons.
- [24] Sreevidya, L. & Sunitha, W. (2011). Capital Structure and the Information Role of Debt. *Journal of Finance*, 45(5), 321-349.
- [25] Tversky, A., & Kahneman, D. (1979). Loss Aversion in Riskless Choice: A Reference-Dependent Model. *The Quarterly Journal of Economics*, 106(4), 1039-1061.
- [26] Yeboah, M., Yeboah, B., & Amoako, P. (2016) Impact of Operational Risks on Achievement of Internally Generated Funds (IGF) in Customs Division of GRA in Ghana. *International Journal of Auditing*, 5(1), 113- 119.
- [27] Yuniati, B., & Ladewi, Y. (2017). The Influence of Internal Control on the Effectiveness of Income Tax Revenue. *International Journal of Economics, Commerce and Management*, 5(11), 683 – 690.
- [28] Zikmund, G. W., Babin, J. B., Carr, C. J., & Griffin, M. (2010). *Business Research Methods* (8<sup>th</sup> Ed.). Hampshire, UK: Cengage Learning.