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responsible for planning and revenue collection in the department of Finance and Economic Planning. Accessible population was 237 employees comprising of 12 from county treasury, 16 planning and budgeting officers, 8 sub county revenue officers, 10 Kapsabet municipality revenue officers, 36 Sub County and ward administrators, 12 accountants and 143 revenue collectors. Sample size of 151 respondents was calculated using Krejcie and Morgan formulae. Pilot study was carried out in Uasin Gishu County to enable validity and reliability of research instruments to be determined. The data was analyzed using descriptive and inferential statistics using Statistical Package for Social Sciences (SPSS). The mean, mode, standard deviation and variance were used in descriptive statistics. The findings were presented using frequency tables. Multiple regression was used to explore the effect of independent variables on dependent variable. The analyzed data was presented in form of tables. The study results revealed that established that financial forecasting has a positive and significant effect on sustainable revenue collection ($\beta_2=0.315$, $p=0.000$). The study concluded that financial forecasting has a positive and significant effect on sustainable revenue collection. The study recommends that having systematic financial forecasting will ensure the county set achievable revenue targets and prepare more realistic estimates.

1.0 Introduction

Kenya's new Constitution envisages far-reaching changes to the way that government operates and

relates to its citizens, with a view to making it more fair, efficient, transparent and accountable (Hope, 2015). Devolution as envisaged in the Constitution of

Abstract

A sustainable revenue collection system is a critical prerequisite for the success of fiscal decentralization in Kenya. In order to fulfill their constitutional mandates, county governments' draw their resources from equitable share of national revenue, conditional grants and own source revenue. Without revenue the government cannot run their activities well as well staying viable in the long run. The guiding objective was to establish the effect of financial forecasting on sustainable revenue collection in County Government of Nandi. The study was guided by model building approach. This study was guided by descriptive survey research design and targeted Nandi county employees

Kenya entails the sharing of the fiscal functions between the National and County Governments (Kanyinga, 2016). The unit of devolution in Kenya is the county and there is a total of 47 counties. The Constitution provides for two broad sources of County Governments' source of funding. These are the revenues transferred to them by the National Government and the revenues they raise on their own (Njahi, 2017).

The criteria for distribution of finances at the county level includes but is not limited to geographic size, population density, equity in amounts per county, levels of development of the county, amount and level of infrastructure in the county, amount of natural resources in a county and how much is or can be generated by a county (Ambetsa, 2014). Kenya's Constitution entrenches devolved government by guaranteeing a minimum unconditional transfer to counties under the new dispensation (Li, 2020). The need for County Governments to have reliable revenue is a key principle of Kenya's devolution (Hope, 2014). The 47 County Governments budget for devolved functions and generate revenue from local sources.

County Governments' funding sources includes: Equitable share of at least 15 percent of most-recently audited revenue raised nationally; additional conditional and unconditional grants from the National Government's share of revenue; equalization Fund based on half of one percent of revenue raised nationally; local revenues in form of taxes, charges and fees; and, loans and grants (Iara, 2016). The Constitution allows Counties to impose: property rates; entertainment taxes; charges for services they provide; and, any other tax or licensing fee authorized by an act of parliament (Odanga, 2019).

Sustainable revenue collection refers to the ability of a county government to fulfil its objectives to collect outstanding financial obligations from the public consistently to finance its operations (Kangave, Nakato, Waiswa & Zzimbe, 2016). It entails the ability of county government to effectively grow,

develop and function effectively for a long period of time. Sustainable revenue collection is an indicator showing how high revenues can grow at a set margin (Rehan, Knight, Unger & Haas, 2014). This metric is based on the current gross profit margin, which is generated using the cost of goods and pricing policy. Sustainable public revenue collection is an integral component of fiscal policy and administration (McKinney, 2015). Sustainable revenue collection can be affected by financial planning practices such as financial forecasting.

Financial forecasting is the process by which a county government thinks about and prepares for the future (Cairns & Wright, 2017). The purpose of the financial forecast is to evaluate current and future fiscal conditions to guide policy and programmatic decisions. A financial forecast is a fiscal management tool that presents estimated information based on past, current, and projected financial conditions (Kavanagh & Williams, 2016). Adequate and predictable tax and non-tax revenues underpin the financial sustainability and stability of government (Lin, Pai & Chang, 2013). With growing donor fatigue and dwindling domestic revenue reserves in most developing countries, the need to strengthen national revenue collection systems has become particularly imperative.

Global Perspective

Saudi Arabia is committed to implementing sustainable revenue collection for the achievement of development goals and attaches the highest priority to this endeavor, as commensurate with the Kingdom's specific context and national principles. The financial planning authority is entrusted with the mandate to follow up and coordinate with relevant entities on Sustainable Development Goals' dossier. Under the mandate, the Ministry of Economy and Planning (MEP), through financial reporting plays a supporting role to stakeholders and government agencies in strategic planning and implementation. In this regard, the revenue authority builds the indicators which measure progress made towards the realization of goals, through expansion of revenue to provide the

necessary finance for development (Hemrit & Benlagha, 2018).

In Indonesia there is need for financial budgeting because estimates of sustainable revenue needed annually for investment is US\$300-530 billion. A large portion of this investment needed in critical infrastructure, as well as environmentally sensitive areas such as agriculture, forestry, energy, mining and waste. Funds for this investment were needed to come from sustainable revenue collection from both the private and public sectors, including both domestic and international sources. Indonesia's financial system is dominated by banking, which accounts for 79.8% of total assets, compared to 10.5% of assets held by insurers, 2.6% by pension funds and 6.4% by finance companies. There are already some flows of private green investment for example, a review by bank (Sani, Syahnur, Masbar & Majid, 2019).

In the USA, there is the Internal Revenue Service (IRS) created through the Internal Revenue Service Restructuring and Reform Act of 1998 (Ricucci, 2014). There is an overall pro-growth effect of sustainability of revenue, with significant positive fiscal multiplier in the health and agriculture sectors (Altaee, Al-Jafari & Khalid, 2016). The available long-run data suggests that middle income countries have also expanded revenues collection in the process of development, and with some differences in the relative importance of specific revenue instruments (Cornia, 2014). Policy makers are increasingly recognizing that weaknesses and failures within the financial Reporting system may be constraining its ability to respond to risks and opportunities for viable, resilient investments.

Africa Perspective

In African countries, sustainability in revenue collection goes hand-in-hand with economic growth and budgeting for governments to deliver essential services and to make long-term investments in public goods (Woodward, 2015). In most developing countries, revenue collection is thwarted by lack of well financial planning practices, high unemployment

levels, extensive informality, highly skewed income and wealth disparities, poverty, tax regimes littered with tax incentives and tax holidays (Fjeldstad, 2014). Further sectors in African countries are made up of small businesses, small farmers, professionals and state-owned enterprises, who by virtue of either being government departments, ignore paying taxes, rates or fines which affected sustainable revenue collections (Abramovsky, Klemm & Phillips, 2014).

In Zimbabwe, revenue collection is the responsibility of the Zimbabwe Revenue Authority which was established in 2001 in terms of the Revenue Authority Act (Chapter 23: 11) (Maseko, 2014). It is the sole revenue collection agency with specific mandates to plan for country's finance, assess, collect and enforce the payment of revenue. Its responsibilities include coming up with policies for assessing, levying and collecting revenue from various taxes that include income tax, capital gains, duty tax, resident shareholders tax, Value Added Tax and stamp duty, among others, this is through financial reporting system (Utaumire, Mashiri & Mazhindu, 2013). ZIMRA also issues and controls revenue certificates, administers regulations pertaining to import and export control exchange as well as licensing and controlling premises used for the manufacture of goods under rebate (Mpumela, 2016).

In Nigeria there exists an impact of financial forecasting on sustainable revenue collection and economic growth of the country. Efforts have been intensified by the revenue authorities at all levels towards increased collection of non-oil taxes especially from the informal sector since this increase has the capacity to growth the economy (Ayuba, 2014). The administrative machinery of the Federal Inland Revenue Service (FIRS) and other relevant tax authorities has been strengthened with a view to eliminating weaknesses and internal control lapses in the assessment and collection. Tax audit and investigation departments are specialized departments and therefore has been manned by professional officers with requisite skills and qualifications (Asimiyu & Kizito, 2014).

Uganda's revenue collected to GDP ratio has hovered between 12 per cent, despite various amendments to revenue laws and reforms in revenue administration (Kangave, Nakato, Waiswa & Zzimbe, 2016). Part of the low revenue contribution can be attributed to factors external to the Uganda Revenue Authority (URA), such as the structure of the economy particularly the prevalence of the informal sector and the ubiquity of cash transactions. Poor revenue collection is a result of poor financial forecasting in URA. With the exception of employees, very few individuals. The consequence is that very little revenue is being collected from this category of taxpayers.

Kenyan Perspective

According to Kenya's financial reports (2016), Kenyan GDP growth has been consistently growing for the past 4 years from USD50.4 billion in 2012 to USD 68.9 billion in 2016 a development which should be reflected by and large in revenue growth, leading to tax inefficiencies where GDP to tax rates dropped from 8.4% in 2010 to 5.3% in 2015. According to ICPAK Fiscal Analysis (2015), Kenyan Tax revenue to GDP still remains low at 15.3% compared to Swedish counterparts whose rate stands at 25% and are now global best practice in adopting corporate planning techniques in improving revenue collections. Kenya is among many developing countries struggling with the problem of tax non-compliance by the tax payers.

Over time, Kenya has moved from being a low revenue burden country to a revenue tax burden country yet the country faces the obvious need for more revenues to sustain public services (Ngotho & Kerongo, 2014). Despite considerable growth in revenue collection, KRA has had to make stringent decisions in order to match the revenue targets given by the treasury (Kondo, 2015). Among these decisions including, financial reporting system but not limited to raising enforcement levels to non-compliant taxpayers which includes arrest and confiscating properties, freezing of bank accounts, reintroduction of new tax obligations such as CGT, which saw KRA face serious court battles with

taxpayers, introduction of withholding VAT, tax on foreign income and rental income tax obligation among other measures to try meet the pressure of revenue targets given by government (Awasthi & Engelschalk, 2018).

The spirit of decentralization is that county governments should in general, be in a better position in identifying local needs and thus accordingly be able to deliver public services better than the central government (Gituma, 2017). Given this background, County Government of Nandi is supposed to raise revenue from local sources to ensure enhancement of its financial budgeting for local development. Furthermore, the county government is expected to come up with projects and programmes to alleviate poverty in its jurisdiction from Own Source Revenue (OSR) (Mutisya, 2014). The county revenue earnings are split into tax revenue and non-tax revenue which comprise among others user fees, entrance fees, licenses, permits. The sustainability of these revenues guarantees constant provision of services to the public and funding of development projects and programmes prioritized by the administration. (Bhattacharya, Oppenheim & Stern, 2015).

Indeed, the importance of financial budgeting, financial forecasting and financial reporting cannot be over emphasized particularly in the case of Nandi County where the revenues are used for employee remunerations, co-funding capital development projects, building administrative headquarters and providing bursaries. There are legitimate allegations that the larger percentage of the shareable revenue to the county governments is engaged in the recurrent expenses instead of development (Government of Kenya, 2014). Insufficiency of funds affects delivery of services to the public and also disrupt development at county levels (Khaunya & Wawire, 2015). The circumstances are not only unfavorable to the inhabitants at county levels who lack the mandatory services and also protest among others, over-taxation, but also the county governance is likely to be backed out of their stations due to perception in the public eye of mishandling of public funds.

Financial Planning Practices in Nandi County

In Nandi County, financial planning combines financial forecasting with financial strategies to identify future challenges and opportunities (Karadag, 2015). Financial planning has restored the community's trust in County government with transparency by revealing the complex decision-making processes and strategies required to deliver County services, planners should also be responsible for building a plan that considers the community's diverse needs and priorities and to maintaining the long-term financial health of the County while investing in the County's core service areas.

The existence of efficient financial planning practices can make a substantial difference between the success and failure of an enterprise and it is of particular importance to the managers of small-scale enterprises, because it is them who strive for finances and the opportunity cost of finances, for them is usually on the higher side (Karadag, 2015). Several challenges have been encountered which include delays in the disbursement from National government, Shortfall in collection of local revenue more specifically on cases where the rates are pending approval upon receipt of stakeholders' input. Budget implementation started at slow pace in the early months of the year as the staff in the various ministries and departments were learning on the programme based budgeting. Unclear devolved functions due to lack of specific guidelines on devolved functions and finally, Public expenditure pressures especially on recurrent expenditure thus limiting the financial performance of the County (Alang'o, Birech, & Kevin, 2016).

Statement of the Problem

Government needs to collect revenue to justify the development and re-current expenditure they incur for the service delivery to citizens. County governments are expected to run their services delivery to citizens after collecting revenue. A sustainable revenue collection system is a critical prerequisite for the success of fiscal decentralization in Kenya. In order to fulfil their constitutional mandates, county governments' draw their resources

from equitable share of national revenue, conditional grants and own source revenue (Kabata & Garaba, 2019). In Nandi County, Projected revenue for financial year 2018/19 was kshs. 8,046,964,890 out of which; recurrent expenditure in this 2018/19 budget estimates amounted to Kshs. 5.19 billion translating to 63.4% of the total revenue (Nandi county treasury, 2020). Therefore, the county government of Nandi has unsustainable revenue resource envelope. Without sustainable revenues the county cannot finance their flagship projects, such as accessibility to quality health services, value addition, education, lands, environment and natural resources, investing in infrastructure for enhanced development and creating a conducive business environment. Furthermore, without sustainable revenue the county government of Nandi cannot run its activities as well stay viable in the long run. The situation is worsened by the over-reliance on the National Government for funds to a point of calling for a national poll to have their share increased is a clear indicator that there exist countless challenges in revenue collection at county level (Charter & Tischner, 2017). Numerous studies have been conducted in the area of revenue collection: Kiprotich, Momanyi and Nyandusi (2012) disclosed that Kenya is among many developing countries harassed by the problem of tax non-compliance by the tax payers. Cleland (2014) notices that revenue miss the mark because of poor management, ineffectual financial planning, incorrect organizational design, lack of well-defined and delegated authority and responsibility, an disorganized system of monitoring, evaluation and controlling, waste of resources, ineffective emergency planning, narrow team input in the carrying out of revenue decisions, impractical cost estimates and schedules, lack of customer obligation to revenues, limited customer management and insufficient management information systems. However, none of the studies has focused on relationship between financial planning practices and sustainable revenue collection. Therefore, this study sought to establish the effect of financial planning practices on sustainable revenue collection in County Government of Nandi, Kenya.

1.3 Objectives of the Study

This study was guided by the following general and specific objectives.

1.3.1 General Objective

The study aimed at establishing effect of financial planning practices on sustainable revenue collection in County Government of Nandi, Kenya.

Specific Objectives

- i. To establish the effect of financial forecasting on sustainable revenue collection in County Government of Nandi.

Research Hypothesis

H₀₁: Financial forecasting has no significant effect on sustainable revenue collection in County Government of Nandi.

2.0 Literature Review

Theoretical Review

The study was guided by the following theories; budget theory, model building approach, and accounting theory.

Model Building Approach for Financial Forecasting

This study adopted Model Building Approach developed by Schlosser 1989. This approach makes use of mathematical equations for drawing financial and economic models. These models depict the inter-relationships amongst the various factors affecting the revenue, financial, economy or business. The expected values for dependent variables are then ascertained by putting the values of known variables in the model. The model considers daily changes in past/historical values to compute the likelihood of the variations in values of current portfolio between given time frame. The key assumption in model building approach is that the set of possible future outcomes is fully represented by what occurred in a definite historical time frame/window (Kristensen, Hedegaard & Petersen, 2018).

Model-building approach involves assumptions about the joint probability distributions of the returns on the

market variables. This model is also known as variance-covariance approach. This is more apt for portfolios which has short as well as long positions in their bucket. This consists of commodities, bonds, equities. in the portfolio. Here, the mean and standard deviation are computed from the distribution of the underlying assets returns and the correlation between them. Daily revenue is normally assumed to be multivariate normal which can be the model's biggest drawback. Hence, model-building approach makes it easy to calculate Var. The theory is relevant to this study because the models can be used by county government to depict the inter-relationships financial forecasting and sustainable revenue collection. The expected values for sustainable revenue collection are ascertained by putting the values of revenue collected daily in the model.

The model considered daily changes in revenue collection values to compute the likelihood of the variations in sustainable values of current portfolio between given time frame. Criticism of the Model Building Approach is that it is much more complex to use when a portfolio comprises of nonlinear products such as options. It is also a grim task to relax the assumption that returns are normal without a significant increase in totaling time. It was therefore be useless to choose a financial plan in view of data about late patterns in stock costs. Thus, technical analysis or financial planning relying on budgeting series with a specific end goal to gauge cost or decide when to budget of a certain project or project was not be able to deliver services well (Cleary, et al., 2018).

Financial Forecasting and Sustainable Revenue Collection

Achieng (2017) did a study on the determinants of adopting computer integration model on financial forecasting in Kisumu East District, Kenya. The study adopted descriptive survey methodology with both quantitative and qualitative approaches to source and analyze data. The study used stratified simple random procedure. A set of questions and interview guide were administered to respondents to elicit appropriate responses. The findings established that financial support and operational efficiency are lead

determinants of CIM adoption on financial forecasting in Kisumu East District. However, the study did not study the effects on financial forecasting on the revenue collection.

Jacobs, Jones and Neil (2015) did a case study sought to compare the forecasted financial benefits of structured forms of public sector. It contributes to the limited empirical literature on public sector and expands the reported use of the financial benefits forecasting model. The results showed that structured public sector was forecasted to provide approximately twice the financial benefits and five times the efficiency compared to structured public sector across all three task settings. In general, turnover rate more than task difficulty affected the size of the benefits. The study did not show the effects of financial forecasting on revenue collection.

DeFranco (2016) did a study on the importance and use of financial forecasting and budgeting at the departmental level in the public sector. This study surveyed 393 finance controllers on the use of forecasting and budgeting at the departmental level in the public sector. A total of 140 questionnaires (35.62 percent response rate) were returned. The study found that controllers rated staffing properly as the main benefit for preparing forecasts and planning strategically for preparing budgets. While one may suspect that perceptions and practices on forecasting and budgeting are vastly different depending upon the public sector, this study also showed that size, or the number of departments, did not significantly influence the perception of the usefulness or the practices of these two financial functions. However, the study did not show the effects of financial forecasting on revenue collection.

Moldovan and Macarie (2015) investigated reducing Uncertainty in Romanian Public Finances: Forecasting Models for Revenue Collection. The study inquired on which technique can be used in

order to estimate the levels of local revenue collection in Romania. Since the difference between the TMA estimates and the actual data are the only ones that are not significant, the paper argues that the TMA is the best fitted time series techniques for this particular type of data. Furthermore, in order to assess the accuracy of the TMA as a medium-term forecasting technique, revenue collection levels were analyzed according to the type of community for both for the actual 2008-2011 data and a predicted (2012-2015) period. However, the study did not show the effects of financial forecasting on revenue collection.

Willoughby and Guo (2017) investigated the state of the art: revenue forecasting in US state governments. Analysis of 336 forecast errors for the 50 states from fiscal year 1975 through fiscal year 1992 indicated that the revenues collected by the states have been, on average, 2.1 percent more than the revenues that were forecasted. The average forecast error during recessions was near zero, while the average forecast error during economic expansions was quite large. Interviews with state budget officials suggested to the authors that the reason why the forecasts of revenues have been so accurate during economic downturns and so inaccurate during periods of economic prosperity is because states routinely under forecast revenues. However, the study did not show the effects of financial forecasting on revenue collection.

Greoning, Zivanomoyo and Tsurai (2019) investigated the effectiveness of composite forecasting of sales tax revenues in Idaho. Fiscal problems have led to increased reliance on economic and revenue forecasting by state governments in recent years. As a means of improving accuracy, many forecasters use alternative outlooks. Composite modeling goes a step further and allows analysts to systematically combine two or more forecasts. Base line projections are provided by an econometric model and a univariate time series model. The composite forecasts are found to outperform both base line forecasts. The combined forecasts are also found to be more accurate than the executive branch forecasts actually utilized from 2013 through 2016.

However, the study did not show the effects of financial forecasting on revenue collection.

2.3.3 Financial Reporting and Sustainable Revenue Collection

Hawo (2015) did a study on the effect of financial reporting on the financial management of public sector in Kenya. The study adopted a descriptive research in this study with a targeted population of 18 National Government Ministries in Kenya. The primary data was collected using questionnaire that relates to specific objectives of the study. Secondary data involved past reports such as annual budget data, progress reports and internal audits reports since the system implementation started and had key information that was helpful to the research study. The study used both quantitative and qualitative method of data analysis. The study found that organizational accountability systems, cash management and budgeting systems, internal control systems and financial reporting systems positively and significantly influenced the financial management in the public sector. However, the study did not look into the effects of financial reporting systems on the revenue collection.

Owino, Senaji, Eng and Ntara (2017) study examined on the effect of financial reporting in revenue collection processes on organizational performance of Nairobi City County. The design of this research was a descriptive survey research. The population for this study composed of 13 top level managers, 41 middle level managers and 102 low level managers. Stratified proportionate random sampling technique was used to select the sample of 111 respondents. The study used a semi structured self-administered questionnaire to collect data from the respondents. However, the study did not show the effects of financial forecasting on revenue collection.

Monari (2015) did a study on the factors influencing effective financial reporting in government sector- A case of Kitui central ministerial departments in Kenya. The research design was a descriptive research design, which involved measurement, classification, analysis comparison and interpretation

of data. The research has shown that 75.3% of the respondents felt that the public are not involved in the formulation of budgets as well as during the project proposals writing. Also 66.7% of the respondents had the view that the public had no access to the financial reports of the Government fiscal management both in terms of expenditures and budgets. The study however did not study the effects of financial reporting on revenue collection.

Lee, Shin, Vetter and Kim (2017) focused on management of income statement variables to report small positive earnings numbers. Results indicate that revenue reports are highly associated with three-day market returns and provide information incremental to that contained in the revenue reports. The use of grossed-up and barter revenue is common for certain public sectors, but not pervasive across sectors. Evidence suggests that the value relevance of revenue for governments reporting grossed-up and barter revenue declined subsequent to the crash in April 2016. However, the study did not show the effects of financial forecasting on revenue collection.

Zhang (2015) examine how revenue recognition timing affects attributes of reported revenue, using a sample of software firms that adopted Statement of Position 91-1 in the early 1990s. The findings showed that early recognition yields more timely revenue information, as evidenced by higher contemporaneous correlation with information impounded in revenues. However, such early recognition diminishes the extent to which accounts receivable accruals map into future cash flow realizations and lowers the time-series predictability of reported revenue. Overall, the results suggest early revenue recognition makes reported revenue more timely and more relevant, but at the cost of lower reliability and lower time-series predictability. However, the study did not show the effects of financial forecasting on revenue collection.

2.3.4 Public Participation Practices and Sustainable Revenue Collection

Nuluva (2015) did a study to establish the factors affecting revenue collection in local government authorities and its objectives were to strengthen revenue collection and identify new sources of revenue. The study found that 63.8% of the participant agreed that LGAs charges low revenue collection rates while 60% of the participant agreed that weather condition is among the factor affecting revenue collection. The data were analysed by multiple regressions, using Independent Variable. The findings showed a significant relationship. Nuluva (2015) in his study however failed to show the influence of public participation as it is the case of the current study.

Owino et al., (2017) did a study to find out how public participation affects revenue collection in the city council of Nairobi. The study was a case study. Primary information was obtained through the questionnaire from the selected departments. The target respondent was from the department concerned with revenue collection. The researcher analyzed data quantitatively by describing and summarizing it using descriptive statistics to enable the researcher to describe distribution of scores. Statistical quantitative data was analyzed in a system way in order to come up with some conclusions and recommendations. The study findings revealed a significant influence of public participation on revenue collection. The study however by Owino et al., (2017) was done in Nairobi city council, while the current study is done in Kenya.

Ataro, Muturi and Wandera (2016) did a study on factors Affecting Revenue Collection Efficiency in County Governments in Kenya. Case of Trans -Nzoia County. The researcher used stratified sampling technique to select employees from the various departments. Stratified sampling techniques identified subgroups in the population and their proportions and selects from each subgroup to form a sample. The findings the study was that land rates are the main sources of revenue collection. The study found out that respondents know internal control

systems. The study established that Training of staff enhance the efficiency of the revenue collection as well-trained staff was in a position to perform their duty in a professional manner. Ataro, Muturi and Wandera (2016) however on their study focused much on other factors while the current study is much on public participation.

Harelimana (2018) determined the effects of tax audit on revenue collection in Rwanda. The study adopted a descriptive approach. Both Primary and secondary data was used and then analyzed through SPSS version 21. From the findings, tax administration, tax revenue performance, revenue protection system, tax automation to a constant zero, revenue collection would be at 0.347. A unit increase on Tax administration would lead to increase in revenue collection by a factor of 0.162, a unit increase in tax revenue performance would lead to increase in revenue collection by a factor of 0.282, a unit increase in revenue protection system would lead to increase in revenue collection by a factor of 0.194 and unit increase in tax automation would lead to increase in revenue collection by a factor of 0.211. However, the study done by Harelimana (2018) was a case of Rwanda and it focused on tax audit unlike the current study which is done in Kenya and focuses on Public participation.

Mujahid and Siddiqui (2019) examined the effect of tax amnesties programs on tax revenue percentage to GDP and on macro-economic performance with the interaction of tax to GDP. Panel data of 28 years from 1990 to 2017 were collected from 24 countries and run a different test to support our results. Results showed that the tax amnesty scheme affect GDP per capita, and FDI but not through an increase in taxes but some other reason. Successful Tax amnesty may benefit reduce the unemployment rate and improve tax to GDP in long-run with increased tax compliance is still workable. Mujahid and Siddiqui (2019) on their study however never showed public participation practices of which the current study is trying to find out.

Conceptual Framework

The study was based on a conceptual framework showing the relationship between the dependent and independent variables. In this study the independent variables financial forecasting measured by revenue performance trends, budgeting, capital budgeting and valuation; The dependent variable was sustainable revenue collection measured ability to effectively grow, ability to develop the county projects, ability to function effectively for a long period of time.

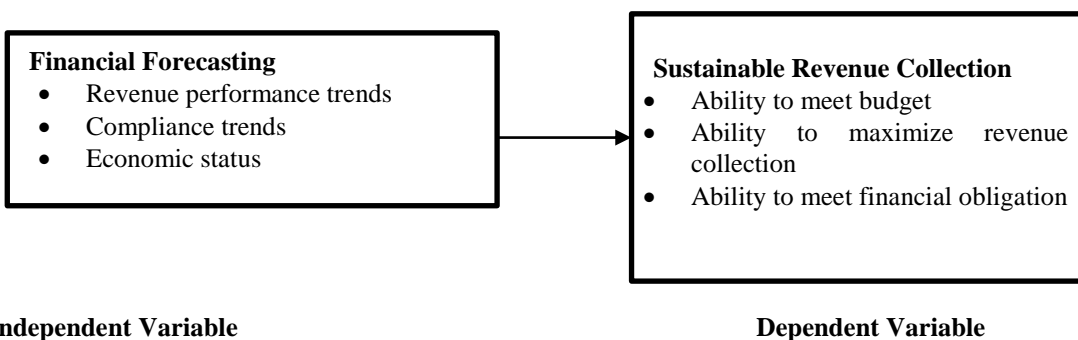


Figure 2.1 Conceptual Framework

3.0 Research Methodology

Research Design

This study was guided by descriptive survey research design to achieve the objectives of the study. Descriptive survey research design is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way (Nardi, 2018). The subject is being observed in a completely natural and unchanged natural environment. This design helped the researcher to collect quantitative data.

Target Population

Population is a well-defined or set of people, services, elements, and events, group of things or Table 3.1 Accessible Population.

households that are being investigated (Kungu, Desta & Ngui, 2014). This ensures that population of interest is homogeneous. The study targeted Nandi county employees responsible for planning and revenue collection in the department of finance and economic planning. However, the accessible population was 237 employees comprising of 12 county treasury, 16 planning and budgeting officers, 8 sub county revenue officers, 10 Kapsabet municipality revenue officers, 36 Sub County and ward administrators, 12 accountants and 143 revenue collectors. The accessible population are presented in Table 3.1.

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Target	Number of Officers
County treasury	12
Planning and budgeting officers	16
Sub county revenue officers	8
Kapsabet municipality revenue officers	10
Sub county and ward administrators	36
Accountants	12
Revenue collectors	143
Total	237

Source: Nandi County Human Resource Registry (2021)

Sample Size and Sampling Techniques

Churchill and Brown (2014) noted that the correct sample size in a study is dependent on factors such as the nature of the population to be studied, the purpose of the study, the number of variables in the study, the type of research design, the method of data analysis and the size of the accessible population. Sample size was calculated using Krejcie & Morgan (1970) derived from formula for finite population which is calculated as:

$$S = \frac{X^2NP(1-P)}{d^2(N-1) + X^2P(1-P)} \dots \text{Eq. 3.1}$$

Where:

S represent required sample size

X represent Z value (for example 1.96 for 95% confidence level)

N represent population size

P represent population proportion (expressed as decimal) (assumed to be 0.5 (50%))

d represent Degree of accuracy (5%), expressed as a proportion (.05); It is margin of error

$$S = \frac{1.96^2 * 237 * 0.5(1-0.5)}{0.05^2(237-1) + 1.96^2 * 0.5(1-0.5)} \dots \text{Equ 3.2}$$

$$S = \frac{227.6}{1.504}$$

$$S = 151$$

The sample size for the study was therefore 151 respondents as shown in Table 3.2.

Table 3.2 Sample Size

Category	Target population	Proportionate Sample Size
County treasury	12	8
Planning and budgeting officers	16	10
Sub county revenue officers	8	5
Kapsabet municipality revenue officers	10	6
Sub county and ward administrators	36	23
Accountants	12	8
Revenue collectors	143	91
Total	237	151

Sampling means selecting a given number of subjects from a defined population as representative of that population. The study used stratified random sampling technique to constitute the sampling unit of the study. A stratum was formulated based on department of finance and economic planning. Proportionate sampling was used to distribute the

sample between strata. The sample per strata was further randomly selected to enhance distribution representation and avoid bias in sampling.

Data Collection Instruments

This study used questionnaires to collect data from respondents. A questionnaire is easy to administer.

Questionnaires also reduce bias since the researchers' own ideas would not affect the responses in a certain manner unlike if it could a face-to-face study. The questionnaire was constructed using a Likert scale with close-ended questions (Kombo & Trumph, 2012).

Pilot Study

Pilot study was carried out in Uasin Gishu County government to enable validity and reliability of research instruments to be determined. The respondents to be used in pilot test represented 10 percent of the units to be used in data collection. The study therefore used 15 respondents to test the degree of accuracy of the instrument to be used to collect data. Those selected for the pilot test was not included in the main study.

Reliability of Research Instruments

Reliability is defined as the extent to which an experiment, test, or measuring procedure yields the same results on repeated trials. A statistical coefficient Cronbach's alpha (α) was used as a measure of internal reliability (Cronbach, 1971). Reliability coefficient of 0.7 or more indicates high reliability of the data (Mugenda, 2011). Cronbach's alpha reliability coefficient ranges between 0 and 1. Reliability coefficient of 0 implies that there is no internal reliability while 1 indicated perfect internal reliability. The optional value of 0.7 was used as a cutoff of reliable research instruments.

Validity of Research Instruments

To establish the validity of the research instrument, content validity was used. The researcher sought the opinions of experts in the field of study especially the study's supervisor and lecturers. This facilitated the necessary revision and modification of the research instrument thereby enhancing validity.

Data Collection Procedures

After receiving a research approval from the University, the researcher sought permission from the directorate of revenue collection at County Government of Nandi office and clearance from the County secretary. The researcher came up with a data

collection schedule and visited the headquarters and the sub counties to administer the instruments. The researcher with the help of one research assistant administered the written questionnaires to the respondents. The researcher assured the respondents of strict confidentiality in dealing with the responses.

Data Processing and Analysis

In this study, quantitative and quantitative data was collected. The questionnaires were checked and cleaned to ensure completeness of the information to be obtained once collected from the respondents. Thereafter, the data was coded prior to entering into the computer. The data was analyzed using descriptive and inferential statistics using Statistical Package for Social Sciences (SPSS) version 20. The mean, mode, standard deviation and variance were used in descriptive statistics.

The findings were presented using frequency tables. Multiple regression was used to explore the effect of independent variables on dependent variable. The regression model to be used in this study is;

$$Y = \beta_0 + \beta_1 X_1 + \epsilon \dots\dots\dots \text{Equation 3.3}$$

Where;

Y represents Sustainable revenue collection in County Government of Nandi

β_0, β_1 , represent Model coefficients

X_1 represents financial forecasting

ϵ represents Error term (variables not included in the model) the level of significance for this study was at 95%

4.0 Research Findings and Discussion

Response Rate

Questionnaires were distributed to 151 respondents. A total of 26 questionnaires were not returned. Only 125 questionnaires were reasonably and adequately completed representing 82.8% response rate (Table 4.1). This response rate was deemed satisfactory as suggested by Field (2013) who recommends 75% as a rule of the thumb for minimum responses. Further, regarding the works of Jaworski and Kohli, 1993; Patra et al., 2010, this response rate is considered satisfactory and is comparable to research on similar topics in marketing.

Table 4.1 Response Rate

Responses	No.	Percentages
Administered questionnaires	151	100
Unreturned	26	82.8
Usable questionnaires	125	17.2

Pilot Study Results

The most standard test of inter-item consistency reliability is Cronbach's alpha coefficient. Sekaran and Bougie (2010) noted that it designates the degree to which an instrument is error free, consistent and

stable across time and also across the various items in the scale. Hence, the Cronbach alpha coefficient test was engaged to measure the internal consistency of the instruments used and the coefficient alpha of these variables were reported in Table 4.2.

Table 4.2 Reliability Test Results

Variables	Cronbach's Alpha	N of Items
Financial forecasting	0.8500	3
Sustainable revenue collection	0.8800	3

As shown in Table 4.2, the Cronbach alpha test showed values ranging from of 0.850 (financial forecasting) to of 0.8800 (sustainable revenue collection). These findings were in line with the rule of thumb proposed by Hair et al. (2010) where coefficient of 0.60 is regarded to have an average reliability while coefficient of 0.70 and above indicates that the instrument has a high reliability standard. Therefore, all items were included in the research instrument.

Demographic Information

The study takes into consideration the respondents personal characteristics to give general information about respondents and to assist the researcher understanding on the findings. Variables included here are gender, age bracket and the highest level of education.

Gender of the Respondents

The study put into account the gender of the respondents. The study results are presented in Table 4.3.

Table 4.3 Gender of the Respondents

Gender	Frequency	Percent
Male	78	62.4
Female	47	37.6
Total	125	100.0

From the results, 78(62.4%) of the respondents were male and 47(37.6%) of them were female. The results indicate that there is an almost equal representation of both male and female employees though female employees comprise the majority.

organization is likely to be greater. Basically, there is a distinctive set of skills brought about by the diverse workforce.

Since both male and female individuals are given a chance to share their knowledge, the outcome for the

Age Bracket of the Respondents

The respondents also sought to determine the age brackets of the respondents. Table 4.4 presents the study results.

Table 4.4 Age Bracket of the Respondents

Age	Frequency	Percent
20 years and below	13	10.4
21-30 years	61	48.8
31-40 years	23	18.4
40 years and above	27	21.6
Total	125	100

From the results, 13(10.4%) of the respondents indicated that they were aged between 20 years and below, 61(48.8%) were aged between 21 years to 30 years, 23(18.4%) indicated between 31 years to 40 years and 27(21.6%) were aged above 40 years. This implies that most of the respondents were aged between 21 years and 30 years.

Level of Education

Furthermore, the study sought to determine the level of education of the respondents. Table 4.5 presents the study results.

Table 4.5 Level of Education of the Respondents

Level of Education	Frequency	Percent
Certificate	14	11.2
Diploma	49	39.2
Degree	47	37.6
Masters	13	10.4
Phd	2	1.6
Total	125	100.00

From the results, 14(11.2%) of the respondents have a certificate, 49(39.2%) diploma level, 47(37.6%) had degree level, 13(10.4%) of the respondents had master's level 2(1.6%) of the respondents had PhD. It is evident that the employees possess the requisite skills to perform their duties effectively.

statements relating to financial forecasting. A 5-point Likert scale was used where SD symbolized strongly disagree, D symbolized disagree, UD symbolized undecided, A symbolized agree and SA symbolized strongly agree. The results were as presented in Table 4.6.

Descriptive Analysis Results

In this study descriptive statistics for independent variables and the dependent variable were analyzed through use of mean, frequencies, percentage and standard deviation as shown below.

Financial Forecasting

The second specific objective of the study was to establish the effect of Financial Forecasting on sustainable revenue collection in Nandi County government. The respondents were requested to indicate their level of agreement on various

Table 4.6 Financial Forecasting

Statements		SA	A	UD	D	SD	Mean	Std. dev.
1. Revenue performance trends has helped the county set achievable revenue targets	F %	47 37.6	56 44.8	15 12	3 2.4	4 3.2	4.11	0.935
2. Compliance trends helps the county predict its revenue collection	F %	45 36	23 18.4	43 34.4	10 8	4 3.2	3.76	1.124
3. Economic trends across the county have enable the county government to prepare more realistic estimates	F %	32 25.6	58 46.4	13 10.4	15 12	7 5.6	4.04	1.125
Valid N		125					3.98	

Table 4.6 shows that 113(82.4%) of the respondents agreed with the statement that Revenue performance trends has helped the county set achievable revenue targets. However, 7(5.6%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that revenue performance trends has helped the county set achievable revenue targets (Mean, =4.11, Std. dev=0.935). Also, 68(54.4%) of the respondents agreed with the statement that ccompliance trends helps the county predict its revenue collection. However, 14(11.2%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation thatCompliance trends helps the county predict its revenue collection (Mean, =4.11, Std. dev=0.935).

Finally, 90(72%) of the respondents agreed with the statement that economic trends across the county have enable the county government to prepare more realistic estimates. However, 22(17.6%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation thatEconomic trends across the county have enable the county government to prepare more realistic estimates (Mean, =3.76, Std. dev=1.124). The study results also show that effect of Financial Forecasting has a positive influence on sustainable revenue collection in Nandi County government. This implies that Revenue performance trends have helped the county set achievable revenue targets. Also, a Compliance trend helps the county predict its revenue

collection. Finally, Compliance trends help the county predict its revenue collection.

The study results concede with Jacobs, Jones and Neil (2015) who showed that structured public sector was forecasted to provide approximately twice the financial benefits and five times the efficiency compared to structured public sector across all three task settings. In general, turnover rate more than task difficulty affected the size of the benefits. The study results also concede with DeFranco (2016) who found out that controllers rated staffing properly as the main benefit for preparing forecasts and planning strategically for preparing budgets. While one may suspect that perceptions and practices on forecasting and budgeting are vastly different depending upon the public sector, this study also showed that size, or the number of departments, did not significantly influence the perception of the usefulness or the practices of these two financial functions.

Sustainable Revenue Collection

The study also sought to establish the effect of financial planning practices on sustainable revenue collection in Nandi county government, Kenya. The respondents were requested to indicate their level of agreement on various statements relating to sustainable revenue collection. A 5-point Likert scale was used where SD symbolized strongly disagree, D symbolized disagree, UD symbolized undecided, A symbolized agree and SA symbolized strongly agree. The results were as presented in Table 4.8.

Table 4.8 Sustainable Revenue Collection

Statements		SA	A	UD	D	SD	Mean	Std dev.
1. Sustainable revenue collection has ensured that the county meets its Budget estimates	F	65	53	1	1	5	4.38	0.877
	%	52	42.4	0.8	0.8	4.0		
2. The county has met its financial obligation over the financial years	F	55	57	2	6	5	4.22	0.974
	%	44	45.6	1.6	4.8	4.0		
3. The county government has Maximized its revenue collection over the financial years	F	59	55	5	1	5	4.30	0.907
	%	47.2	44	4.0	0.8	4.0		
Valid N		125					3.98	

Table 4.10 shows that 118(94.4%) of the respondents agreed with the statement that Sustainable revenue collection has ensured that the county meets its Budget estimates. However, 6(4.8%) of the respondents disagreed. Further the study findings showed in terms of means and standard deviation that Sustainable revenue collection has ensured that the county meets its Budget estimates (Mean, =4.38, Std. dev=0.877). Also, 112(89.6%) of the respondents agreed with the statement that the county has met its financial obligation over the financial years. However, 11(8.8%) of the respondents disagreed.

Further the study findings showed in terms of means and standard deviation that the county has met its financial obligation over the financial years (Mean, =4.22, Std. dev=0.974). Finally, 114(91.2%) of the respondents agreed with the statement that the county government has Maximized its revenue collection over the financial years. However, 6(4.8%) of the respondents disagreed. Further the study findings

showed in terms of means and standard deviation that the county government has Maximized its revenue collection over the financial years (Mean, =4.30, Std. dev=0.907).

Inferential Statistics

This section presented the results of correlation and regression analysis. The section was meant to establish the effect of independent variable on dependent variable.

Correlation Analysis Results

The researcher sought to establish the bivariate nature of both dependent and independent variables. Before running the regression analysis, the researcher sought the correlation in order to check whether there was association between variables. To achieve this, Pearson’s product moment correlation was carried out because all the variables were in interval scale. The correlation results are presented in Table 4.9.

Table 4.9 Multiple Correlation Results

		Sustainable revenue collection	Financial forecasting
Sustainable revenue collection	Pearson Correlation	1	
	Sig. (2-tailed)	.000	
Financial forecasting	Pearson Correlation	.791**	1
	Sig. (2-tailed)	.000	

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

The study findings in Table 4.9 revealed that there was a significant positive and strong correlation

between financial forecasting and sustainable revenue collection (r=0.791, p<0.01). Thus, financial

forecasting contributes 79.1% to sustainable revenue collection. Financial reporting contributes 74.8% to sustainable revenue collection.

Multiple Regression Analysis

To determine the effect of financial planning practices on sustainable revenue collection in County Government of Nandi, Kenya, the researcher used multiple regression analysis.

Table 4.10 Regression Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.838 ^a	.703	.693	.54755	1.823

Financial budgeting, financial forecasting, financial reporting and public participation practices were found to be satisfactory variables in affecting the sustainable revenue collection. This is supported by coefficient of determination also known as the R square of 70.3%. This means that the independent variables explained 70.3% of the variations in the dependent variable (sustainable revenue collection). The results further implied that the model applied to link the relationship of the variables was satisfactory.

Adjusted R² is a modified version of R² that has been adjusted for the number of predictors in the model by

Table 4.11: Multiple Regression Model Goodness of Fit Test Results

	Sum of Squares	df	Mean Square	F	Sig.
Regression	85.066	4	21.267	70.934	.000 ^b
Residual	35.977	120	.300		
Total	121.043	124			

Table 4.11 shows the Analysis of Variance (ANOVA) of regression analysis between three independent variables including financial budgeting, financial forecasting, financial reporting, public participation practices and a dependent variable; sustainable revenue collection. In regression, the value of sum of squares is 85.066, the value of degrees of freedom is 4, the value of mean square is 21.267, the value of F is 70.934, and the significance

Regression Model Summary

The results presented in Table 4.8 present the fitness of model used of the regression model indicated by the coefficient of determination (R²) and correlation coefficient (R).

less than chance. The adjusted R² of which was slightly lower than the R² value was exact indicator of the relationship between the independent and the dependent variable because it is sensitive to the addition of irrelevant variables. The adjusted R² indicates that 69.3% of the changes in sustainable revenue collection are explained by the model.

4.7.4 Regression model Goodness of Fit

The analysis of variance was used to test whether the model could significantly fit in predicting the outcome than using the mean as shown in Table 4.11.

value is 0.000. On the other hand, in residual, the value of sum of squares is 35.977; the value degrees of freedom are 120. Further, the results implied that the independent variables are good predictors of sustainable revenue collection (p<0.05).

Multiple Regression Coefficients

In addition, the β coefficients for independent variable were generated from the model. The t-test

was used as a measure to identify whether the independent variables is making a significant

contribution to the model. The study results are presented in Table 4.12.

Table 4.12: Multiple Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	.628	.211		2.976	.004
Financial forecasting	.315	.083	.388	4.377	.000

Regression of coefficients results in Table 4.12 shows financial forecasting has a positive and significant effect on sustainable revenue collection ($\beta_2=0.315$, $p=0.000$). A unit increase in financial forecasting caused 0.315 units increased in sustainable revenue collection. β -value for all the independent variables had a positive coefficient, depicting positive relationship between dependent and independent variables as summarized in the model as:

$$Y = 0.628 + 0.315X_2 \dots\dots\dots \text{Equation 4.1}$$

Where:

Y represents sustainable revenue collection

X_1 represents financial forecasting

Hypothesis Testing

The study hypothesized that there is no significant effect of financial budgeting on sustainable revenue collection. The study findings depicted that there is no significant effect of financial forecasting on sustainable revenue collection. The study findings depicted that there was a significant effect of financial forecasting on sustainable revenue collection ($\beta_2= 0.315$ and p value <0.05). Therefore, study rejected the null hypothesis: H_{02} : that there is no significant effect of financial forecasting on sustainable revenue collection and concluded that financial forecasting has a statistically significant effect on sustainable revenue collection. The study results agreed with DeFranco (2016) study found that controllers rated staffing properly as the main benefit for preparing forecasts and planning strategically for preparing budgets. Moldovan and Macarie (2015) who noted that in order to assess the accuracy of the TMA as a medium-term forecasting technique, revenue collection levels was analyzed according to

the type of community for both for the actual data and a period.

Willoughby and Guo (2017) results indicated that the revenues collected by the states have been, on average, 2.1 percent more than the revenues that were forecasted. The average forecast error during recessions was near zero, while the average forecast error during economic expansions was quite large. Greoning, Zivanomoyo and Tsaurai (2019) who noted that the composite forecasts are found to outperform both base line forecasts. The combined forecasts are also found to be more accurate than the executive branch forecasts actually utilized.

5.0 Summary, Conclusions and Recommendations Summary of the Study Findings

This section presents the summary of effect of financial forecasting on sustainable revenue collection.

Financial Forecasting

The study sought to determine effect of financial forecasting on sustainable revenue collection in Nandi County. The descriptive statistics showed that revenue performance trends have helped the county set achievable revenue targets. Compliance trends helps the county predict its revenue collection. Economic trends across the county have enable the county government to prepare more realistic estimates. The correlation results showed that there was a significant effect of financial forecasting on sustainable revenue collection in Nandi County. This implies that revenue performance trends have helped the county set achievable revenue targets. Also, compliance trends help the county predict its revenue

collection. Finally, Compliance trends helps the county predict its revenue collection.

Conclusions of the Study

The study concluded that financial reporting was found to have a positive and significant effect on sustainable revenue collection. The county government prepares monthly financial reports to help in decision making. Also, the county government analyses quarterly reports in reviewing performance.

Recommendations of the Study

Based on the study findings and conclusion the study made the following recommendations; The study also recommends that the county government of Nandi should have a systematic financial forecasting to ensure that there is sustainable revenue collection. Having systematic financial forecasting will ensure the county set achievable revenue targets and prepare more realistic estimates. The county can predict its revenue collection. The study further recommends that the county government should establish well established financial reporting which will ensure sustainable revenue collection. Adopting monthly financial reports will help in decision making. Analysing quarterly reports in reviewing performance will improve sustainable revenue collections in the county.

Suggested Areas for Further Research

Since the study found out that financial budgeting contributed the least to sustainable revenue collections among the study variables, further researchers should focus on how to improve this variable. Further, researchers should research on strategies to improve financial budgeting which in turn can improve sustainable revenue collection in the counties.

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