DETERMINANTS OF CAPITAL EXPENDITURES BY COUNTY GOVERNMENTS IN KENYA: FY 2013/14

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ABSTRACT

County government refers to all levels of government lower than the National Government. The Constitution of Kenya, 2010 introduced devolved system of governance comprising of a national government and forty seven county governments as a way to bring public services closer to the people. However, county governments have static and narrow local revenue bases, high wage bill and poverty rates that limit their abilities to effectively mobilize adequate resources to finance capital programmes. The objective of this study was to investigate determinants of capital expenditures by county governments in Kenya. The dependent variable in this study was county capital expenditure while the independent variables were local revenue performance and wage bill. Relevant literature and theories such as Leviathan Theory and Peacock and Wiseman Theory were reviewed. The study employed a cross-sectional research design to describe the relationship between the selected independent variables and the dependent variable. The target population for the study was the forty seven county governments. The study used secondary data collected from reports by the Controller of Budget, World Bank and Kenya National Bureau of Statistics. A simple regression analysis was used to determine the relationship between independent variables and the dependent variable. Data was analyzed using Eviews and results presented using tables, charts and graphs. The findings of this study indicated that wage bill had a negative statistically significant relationship with capital expenditure. The findings also indicated that local revenue performance had a positive and significant relationship with capital expenditure. A unit increase in local revenue performance caused a variation of 3.550541 units in capital expenditure. Based on the findings of this study, it was concluded that wage bill and local revenue performance, were key determinants of capital expenditure by county governments in Kenya. This study recommended that county should keep the wage bill at sustainable level to create more resources for capital programmes. Counties also should invest in integrated revenue collection and management systems to seal revenue leakages. County government should also improve administrative procedures of tax collection and invest in untapped sources to improve local revenue collection.

Key Words: *Capital Expenditure, County Governments*

INTRODUCTION

The determinants of capital expenditure are important factors that are relevant for managing economic development by county governments. According to Akpan (2008) local government is a separate and distinct layer of government with a reasonable measure of autonomy. This becomes more relevant when development challenges such as poor infrastructure, high level of unemployment and insecurity and are prevalent. These developmental challenges persist in Kenya's county governments, despite the huge capital expenditure that are allocated annually to solve them. Based on this, diverse fiscal policies measures have been adopted by the county governments to manage public expenditures. Some of these policies include reducing total wage bill and revenue mobilization to create additional resources for funding capital programs.

Revenue mobilization in the local government context refers to the sum of legislated income usually in monetary term received from central government or collected from internal sources (Pakpahan et al., 2002). Local authorities in most urban centers in Africa have enacted bylaws to mobilize revenue from various streams. However, local revenue streams have not been sufficient to match the growing needs of the increasing urban population. The growth rate of most cities and towns in Africa has overtaken local authority capacity in terms of financing infrastructure development. Consequently, the capacity of local authorities to provide basic services to growing populace has emerged as a major theme in many academic and political discourses. In particular, fiscal decentralization, devolution of revenue generation, and spending powers to local authorities has evolved into a hotly debated topic of governance in the recent years (Pakpahan et al., 2002).

The determinant of local capital expenditure has featured prominently in public finance discourses. Fan and Rao (2003) assert that the phrase *expenditure* in public expenditure literature is used interchangeably with the term *spending policies.* In essence, this implies that local government expenditure mirrors spending policies employed by local governments. It is against this background that previous studies have focused on identifying determinants of local government expenditure (Yenigul, 2007). These efforts have been accelerated in recent years as a result of mounting pressure from the citizens to make local governments more effective and receptive to public demands.

The Constitution of Kenya (COK), 2010 introduced devolved system of governance comprising of a national government and 47 county governments as a way to bring public services closer to the people. Potter (2001) defines devolution as the process of transferring administrative, political and fiscal responsibilities from central government to sub-national governments. The Fourth Schedule of the COK, 2010 outlines the distribution of functions between national and county governments as well as sources of revenue for the entity. Devolution has therefore decentralized political and economic powers to county governments by promoting democratic exercise of power and ensuring an equitable share of public resources between the two layers of government.

Statement of the Problem

In the last 20 years, fiscal decentralization has gained popularity in public finance literatures and practices (Myles, 2001). Fiscal decentralization has assumed a global appeal as both industrialized and developing countries have public expenditure powers to the local government. In addition, global institutions, for instance, the World Bank and the United Nations highly support fiscal decentralization in order to enhance socioeconomic development, as well as efficiency and accountability in the public sector. As matter of fact, fiscal decentralization, which basically refers to the devolution of revenue and expenditure powers to the county governments, has become a major theme in the global and regional front over the recent years as a means to spur economic growth (Myles, 2001).

It is apparent from the preceding section that regional and county governments play a key role in the provision of public services at local level. However, a substantial part of this allocation was spent on recurrent activities with little spared for capital programmes. For example, in FY2006-2007 the recurrent expenditure (wage bill and operations and maintenance) accounted for 68.2 per cent of the total expenditures of all local governments while the share of capital expenditures was only 15.2 per cent. To address this problem, the newly promulgated Constitution of Kenya required that county government allocate 30 per cent of total resources for capital expenditure. Despite the introduction of legislative measures to address skewed public spending, in FY2013/14, the county governments' recurrent expenditure increased to 92 per cent of the total expenditure, while the share of the capital expenditures declined to 8 per cent (Controller of Budget, 2014).

These developmental challenges persist in Kenya despite the huge county government expenditures that are budgeted annually to solve them. Based on this, county governments must adopt diverse fiscal policies measures in order to manage public expenditures. Some of these policies include increasing tax bases and containing recurrent expenditures, particularly the bloated wage bill. In utilising the option of managing public expenditure, some theories have been postulated to explain the behaviour of government expenditure. Some of them include excessive government revenue-the revenue-spend theory (connoting that the expenditure level in an economy should adjust equivalently to the volume of revenue generated in the economy). Others include the economic growth inducing government expenditure-Wagner theory and the government decentralisation inducing government expenditure-Leviathan theory (Rodden, 2003).

Despite these theoretical underpinnings and the growing literature on public expenditure vis-à-vis its marginal development outcome, the determinants of county government expenditure in Kenya has not received a thorough empirical investigation. For instance, Torome (2013) adopted a descriptive research design to study the relationship between revenue mobilization and service delivery in 35 local authorities in Kenya. He concluded that revenue mobilization had the highest impact on service delivery (Torome, 2013). Similarly, Maina (2013) used descriptive research design to study factors affecting revenue collection in Municipal Council of Nyeri. However, the descriptive research design adopted in both studies presents the possibility for error and subjectivity. Overcoming a research bias is extreme difficult for a descriptive research approach and may influence the outcome of the research. Another major limitation of both studies is that they used a small sample size which can produce false-positive results, or over-estimate the magnitude of an association between dependent variable and independent variable.

Though these studies have their merits, they severely suffer from the heterogeneity of the underlying data set, different estimation techniques, different time periods and different variable measurement techniques that can yield different results (Hall & Lavrakas, 2008). From the above discussions, it is evident that none of the studies have concentrated on studying determinants of capital expenditures at county government level. It is against this background that this study therefore sought to fill the existing knowledge gap by using a larger sample and employing cross-sectional study design to study determinants of county government capital expenditures. This study therefore sought to answer the question; what are the determinants of capital expenditures in the county governments in Kenya?

Objectives of the Study

The general objective was to study determinants of capital expenditures by county governments in Kenya. The specific objectives are To determine the relationship between local revenue

performance and capital expenditures in county governments in Kenya

Research Questions

1. What is the relationship between local revenue performance and capital expenditures in county governments in Kenya?

2. What is the relationship between wage bill and capital expenditures in county governments in Kenya?

Scope of the Study

This study focused on Kenya's 47 county governments over the FY 2013/14 period. The choice of this period was constrained by availability of data since county governments have been in operation for the last two years and FY203/14 offers a complete data set on public expenditure. This study therefore utilized secondary data published by the Office of the Controller of Budget and other data sets from Kenya National Bureau of Statistics for the selected period under review.

LITERATURE REVIEW

Theoretical Framework

The study of local government expenditures is one of the major themes in public economics literature. It is generally perceived that the public is familiar with certain aspects of government expenditure policies. This perception stems from the fact that capital expenditure at local level generates public services such as public parks, public health facilities and other social amenities that are of immense benefit the local community (Yenigul, 2007). All these facilities and services encompass local government expenditures. Therefore, the following subsections discuss the relevant theories and empirical studies that are relevant to explore determinants of capital expenditure in county government.

Leviathan Theory

The Leviathan Theory is one of the public expenditure theories which postulate that the cumulative government's involvement in the economy will diminish as public spending and taxes are reduced, holding other factors constants. The theory stems from the fact that the national government is perceived as *revenue maximizing leviathan* that aims to optimize revenue via fiscal devolution of the central government control on taxation (Rodden, 2003). The Leviathan Theory asserts that public spending by the national government will be lower in a highly devolved system of governance because decentralized units (county governments) will be responsible for revenue mobilization and public expenditure at local level. In essence the partial transfer of these functions to sub government units eases pressure on the national government (Rodden, 2003). In Kenya context, the leviathan trait is aptly reflected in the Fourth Schedule of the Constitution of Kenya (COK), 2010 which outlines distribution of functions between the national government and the county governments. In effect, the national government has 35 functions while county governments have 14 functions. Some of the national government functions include; national referral health services, defense, monetary policy, education policy, national statistics, energy policy, and disaster management among others. County government functions include; preprimary education, control of drugs and pornography, trade development, rural roads development, cultural services, and county health services among others (COK, 2010).

Peacock and Wiseman Theory

The Peacock and Wiseman theory which focuses on growth of public expenditure was developed by Peacock and Wiseman in their study of public expenditure in the United Kingdom for the period 1890 –1955. The theory postulates that the general public is basically tax averse while the government on the other hand has a natural desire for public spending. During periods of

shocks like calamities and war, the government would swiftly increase the public spending which would be accompanied by upward shift in taxes. According to Peacock and Wiseman, the tax payers (residents) would tolerate tax incremental in such period. This situation is known as displacement effect, though it's meant to be a temporary phenomenon it usually takes on a long term trend (Wiseman & Peacock, 1961).

This theory explains how public expenditure in Kenya has taken unrelenting upward trajectory. Every time Kenya has experience shocks such as resettlement of Internally Displaced Persons (IDPs), and enlargement of the public sector to accommodate the many ministries intended to serve the citizens, the tax intensity and scope danced in tandem with the public expenditure. The theories also explain the increments in public expenditure from Kshs.227.3 billion in FY2012/13 to Kshs.1.3 trillion in FY2013/14 representing a 571 percent increase. The sudden increase in public expenditure is attributed to the operationalization of the new 47 county governments and independent offices and commissions in 2013 (Controller of Budget, 2014). The major limitation of Peacock and Wiseman theory is that it ignores the fact that government can finance an upward displacement in public spending using other sources of incomes such as external borrowing, donor funds or even sale of government fixed asset. For example, the government received Kshs.351.2 billion in form of external borrowing and grant to finance public expenditure in FY2013/14. In this case, revenue from borrowing and grants were used to partially finance the public expenditure.

Conceptual Framework
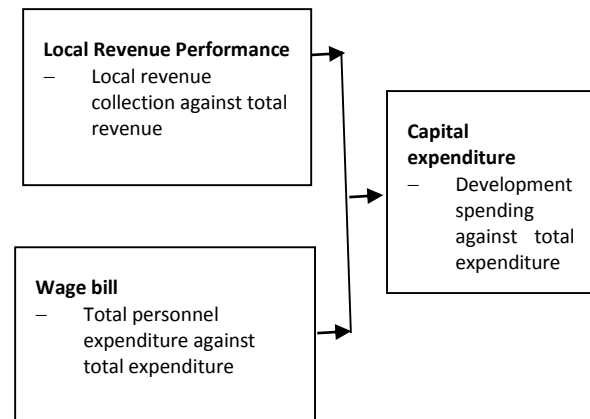
Independent Variables   Dependent variable

Figure 1: Conceptual Framework

Empirical Literature

The following subsection is an empirical literature of the determinants of capital expenditures relevant to this study.

Local Revenue Collection

A robust revenue mobilization system for local governments is an important precondition for the success of fiscal devolution (Bird, 2008). Apart from generating revenues, local revenue mobilization can potentially enhance administrative and fiscal accountability by empowering communities. However, the local revenue mobilization is usually low and inadequate to cover expenditures at local level. The national government tax administrative systems in most developing countries have undergone both structural and legislative reforms to adapt to a changing environment (Keen, 2002). On the contrary, local tax systems in developing countries have largely remained static, especially in Africa. The reluctance to introduce reforms in local tax systems is attributable to political and economic factors. With regard to the former, central governments institutions have resisted the decentralization process for fear of losing power and relevance. The economic factor is concerned with the aim of addressing fiscal deficits and constraints since local revenue mobilization is characterized by inefficiencies and high collection costs (Fjeldstad & Chambas, 2014).

The common characteristics of local tax systems across developing countries are large number of fees, levies and taxes. In some African countries, local governments appear to mobilize revenue from whatever charges, fees and taxes they deem necessary with little regard to economic distortions and distribution effects that these measures cause. The large number of charges, fees and taxes is a fundamental problem from different angles, including the development of a transparent, accountable and efficient local revenue mobilization system. In addition, usually results in to exaggeration of the local revenue potential. In many cases, there is a weak coordination between central governments and local governments with respect to taxation in most African countries. This is attributable to capacity challenges at both levels of government (Fjeldstad & Chambas, 2014).

Studies have been done in the past to establish the relationship between local revenue mobilization and performance. For example, Torome (2013) used purposive sampling method to select 35 municipal councils in Kenya to study the relationship between revenue mobilization and performance of local authorities in Kenya. Using a logit regression analysis, he established a positive relationship between local revenue mobilization and local government performance. Brooksons (2002) examined the capacity of local authorities in terms of revenue enhancement and analyzed trends in financial efficiency and accountability in Tanzania. The study sought to establish the degree of fiscal autonomy, financial management and method of revenue collection. Using a simple regression model, he found that local government reforms improved financial management and revenue mobilization of local governments. Maina (2013) employed a descriptive research design to study factors affecting revenue collection in local authorities in Kenya. The study used disproportionate stratified sampling method to select 130 chief officers, public officers and civic leaders to participate in the study. The regression analysis revealed that Local Authority Information Financial and Operations Management System

(LAIFOMS) and employee skills had a strong impact on local revenue collection.It is apparent that local revenue mobilization is an integral factor in local government service delivery efforts. This is more so especially in the Kenyan context where county governments have added responsibilities compared to defunct local governments. While recognition of the importance of devolution of functions to county governments is welcomed, it is imperative that this should be equally accompanied by financial empowerment of the devolved units. These calls for adoption of sound measures including local tax reforms and automation of revenue collection by county governments to enable them amass adequate resources to effectively dispense public services at the local level (Odhiambo, 2005).

Wage Bill

A considerable portion of wage employment in developing nations, including Kenya, is in the public sector. One of the key issues of public debate and attention in Kenya is the public-private sector wage differentials at a time when the public sector wage bill has surpassed that of its comparators in the region (Ramoni-Perazzi & Bellante, 2007). Wage differentials have severe implication on overall productivity in the public sector and the capacity of the sector to implement capital programmes. The current public sector wage bill to ordinary revenue is 50.2 per cent, while the ratio to recurrent expenditure is estimated at 64.1 per cent compared to the recommended 34.5 per cent for countries in Sub-Saharan Africa. Similarly, wage bill to GDP ratio has gradually increased from 10.7 per cent of Gross Domestic Product (GDP) in FY2008/2009 to 12.1 per cent in FY2012/2013. The escalating wage bill has a direct impact on the performance of the national economy. For instance, it may result in diversion of development funds to consumption at the cost of development, thus slowing down economic growth (KIPPRA, 2013).

Another challenge facing both national and county governments is the low creation of jobs relative to the growth in the labor force, resulting

in unemployment and underemployment; (Munga et al., 2012); and growing wage gaps (Omolo & Omiti, 2004). The share of informal sector employment has grown to 81.9 per cent between 2004 and 2011, meaning that formal sector employment stands at 18.8 per cent.

The total public service wage bill, including military and local authorities rose from Kshs.165.9 billion in 2004 to 291.4 billion in 2011. The wage bill as a share of GDP was 11.2 per cent in 2007/2008 and 9.5 per cent in 2010/2011. The ratio of wage bill to GDP is an indicator of the public service personnel cost as a percentage of the total economy. The national government wage bill as a percentage of total recurrent revenue and grants was 43.3 per cent in FY 2007/2008 and 37.9 per cent in FY2010/2011.The changes in the public wage bill are, nonetheless, projected to be on an upward trend owing to several government reforms including implementation of the COK, 2010 and ensuing transfer of devolved functions to county governments. In 2009, the cross-country comparison of the wage bill as a percentage of total revenue was 41.2 per cent for Ghana, 38.6 per cent for Liberia and 26.8 per cent for Senegal (KIPPRA, 2013).

The growth in the wage bill has remained higher than that of GDP, yet the opposite should be the case, with GDP growth surpassing wage bill growth. A wage bill of 9.5 per cent of GDP in 2011 is higher than for some comparator nations, but should be sustained at a rate no exceeding 10 per cent. An international comparison reveals that Egypt (7.2%), Mauritius (5.2%) and Malaysia (5.1%), have wage bill to GDP ratios below 10 per cent (KIPPRA, 2013). Similarly, county governments are grappling with a bloated wage bill as substantial resources are diverted to pay for personnel costs. For example, in FY2013/14 the county governments wage bill accounted for 40.1 per cent of the total expenditure. This could be attributed to the transfer of staff from national government as well as uncontrolled employment of staff by county governments. The high share of wage bill had a negative impact on

capital projects as development expenditure accounted for a paltry 9 per cent of the total expenditure during the period under review (COB, 2014).

Critique of Existing Literature Relevant to the Study

It is apparent from the literature review that there is no general consensus on the most appropriate framework for studying determinants of local government expenditures notwithstanding various fundamental theories utilized in analysis. Consequently, the current literature has a diverse quantity of research undertakings on determinants of local government spending policies. Therefore, it is clear that no single theory/model is generally accepted for ascertaining which of the factors takes precedence over others (Stegarescu, 2004)). In light of this, the ensuing paragraphs will briefly focus on relevant studies and inclusion of research work is based on the criteria of relevancy to this study.

Fabricant and Fisher emerged as early economists to study determinants of fiscal policy (Casadesus-Masanell & Spulber, 2010). Using a single equation regression analysis, Fabricant (2003) found that population density, degree of urbanization and personal income explained 72 per cent of the variation in state per-capita expenditures. Further, he found that personal income had the highest impact among the three variables while urbanization had the least impact on state expenditures. Using the same variables, Fisher carried out another study using 1960 data on state expenditure and reported similar results as Fabricant (Casadesus-Masanell & Spulber, 2010). However, the explanatory power of the variables was lower than Fabricant since they accounted for 53 percent of variations in state per capita expenditures.

Helsley (2003) used a multiple regression method based on the median voter theory to study determinants of local public services. They used a sample comprising of 826 municipal units and used 1960 data to select 10 states with a population range of between 10,000 and

150,000. The independent variables used in the study were the tax share of residents with a median income and the number of households in a municipal unit. They found a negative relationship between the number of households and state per capita expenditure. They concluded that declining population was associated with rising state per capita expenditures due to inertial effects (Helsley, 2003).

The dependent variable was per-capita total local government expenditures while the main independent variable was population density. Torome (2013) used a purposive sampling method to select 35 municipal councils in Kenya to study the relationship between revenue mobilization and performance of local authorities in Kenya. Using logit regression analysis, he established a positive relationship between local revenue mobilization and local government performance.

Research Gaps

It is apparent irrespective of the level of government that information on public expenditure determinants is valuable for many reasons. Despite these theoretical underpinnings and the growing literature on public expenditure vis-à-vis its marginal development outcome, the determinants of county government expenditure in Kenya has not received a thorough empirical investigation. For instance, Albala and Mamatzakis (2001) employed time series data for the period 1960-1995 to estimate a Cobb-Douglas production function that incorporated public infrastructure for Chile and found a positive and significant correlation between public infrastructure and economic growth. The study reported that public investment crowds out private investment. One major weakness of the study was that it omitted impact of important variables such as education, health care and public order and security. Were (2001) conducting a research on impact of external debts on economic growth and investment in Kenya, found out that current investment in human capital development to be growth

supporting. However, lagged public spending in human capital was found to adversely affect growth. The major flaw of the study was that the time series data used was for a short period of time and it took into account investment in human capital ignoring investment in physical infrastructure.

Dzambaska (2012) set out to determine how government size affected the economic growth by looking at OECD countries in the period 1970–1999. The study employed panel data to demonstrate a negative and statistically significant correlation between government size and economic growth. The only countries which did not fall under the above conclusion were USA, Sweden and Norway with their coefficients turning out to be statistically insignificant. Maingi (2010) while investigating the relationship between public spending and economic growth in Kenya found that substantial public expenditure on infrastructure development enhance economic growth. On the other hand, public spending on wages, foreign debts and security impeded economic growth.

METHODOLOGY

Research Design

The study adopted a cross-sectional study design. This design was relevant to this study because it allowed for the description of the relationship between the selected independent variables and the dependent variable in a particular point in time

Population

The population for this study therefore was the 47 county governments which were created from the defunct local authorities. Following the promulgation of the COK, 2010 and the subsequent General Election in 2013, the 47 county governments became operational thus replacing local authorities. Given the small size of county governments, the study conducted a census rather than sampling to collect the quantitative data. Therefore, no sampling method was adopted in this study.

Data Collection Instruments

This study used secondary data to strengthen the research findings and to make recommendations. Secondary data was considered as the major source of information in this study. Thus published data on local revenue performance and capital expenditure for FY2013/14 was collected via document review of published report from the Office of the Controller of Budget. Data on local revenue performance is the aggregate of annual local revenue collected by the 47 county governments for the FY2013/14. Similarly, data on capital expenditure represented annual aggregate development expenditure for 47 county governments for the FY2013/14.

Data Analysis and Presentation

The secondary data was analyzed using e-views. Multiple regression analysis was used in this study to explain the empirical results. It was used to explore the relationship between the dependent variable and the independent variables identified in the study. This method provided the researcher with information about the model as a whole and the relative contribution of each of the variables that make up the model. As an extension of this, multiple regression allowed the researcher to test whether adding a variable contributed to the predictive ability of the model, over and above those variables already included in the model. The model used in this was a modification of the model applied by Fabricant (2003) who sought to identify the determinants of state per-capita expenditures through a panel data analysis. The modified model is specified below:

$Y = a + b_1X_1 + b_2X_2 + \varepsilon$

Where;

Y = Aggregate Capital Expenditures (measured in Kshs)

X_1 = Local Revenue Performance (measured as local revenue collection/total revenue X 100)

X_2 = Wage Bill (measured as percent of personnel expenditure to total expenditure)

b_1 and b_2, = Coefficients of Independent Variables X_1 and X_2

a = Constant Term of the Model

ε = Error Term of the Model

In order to test the significance of the model in measuring the relationship between independent variables and the dependent variable, F-statistics was computed and interpreted at a significance level of 0.05. The study was tested at 95% confidence level and 5% significant level.

Data presentation is a process of putting the findings of experiments into graphs, charts and tables.

RESEARCH FINDINGS AND DISCUSSION

Descriptive Statistics

The results in the table below indicate the descriptive statistics of the study variables. These include the mean, median, maximum and minimum values and measures of normality.

Table 1:   Descriptive Statistics of Variables

	Cap Exp	Wage bill	Local rev per
Mean	20.15457	21.00285	0.102465
Median	20.15421	20.95263	0.062318
Maximum	21.70955	23.05642	0.564063
Minimum	17.28875	19.53761	0.013780
Std. Dev.	0.882020	0.632019	0.105237
Skewness	-0.783622	0.317737	2.505772
Kurtosis	4.225580	4.425167	10.00713
Jarque-Bera	7.751678	4.768402	145.3386
Probability	0.020737	0.092163	0.000000
Observations	**47**	**47**	**47**

The study used natural log of capital expenditure and wage bill because their values were large compared to other variables. The mean value of capital expenditure was 20.154 while the maximum and minimum values were 21.70 and 17.29 respectively. The standard deviation of capital expenditure was 0.882. The Jarque-Bera test indicates that capital expenditure was not normally distributed since the p-value value is less than 0.05.

The mean value of wage bill was 21.00 when converted to Kenyan shillings it corresponds to value of Kshs. 1.42 billion. This implies that county governments spend an average of Kshs. 1.42 billion on wage bill. The maximum value of the wage bill was Kshs. 10.31billion which was spend by the Nairobi County while the minimum wage bill was Kshs. 0.305 billion spend by Nyamira County. This distribution was normally distributed as indicated by the value of Jarque-Bera since the p-value value is greater than 0.05.

The mean of local revenue performance which was calculated by dividing local revenue over total revenue was 0.102465. The county with the highest local revenue performance was Nairobi at 0.564063 while Wajir County had the lowest local revenue performance at 0.01378. This implies that Wajir collected the least local revenue of all the 47 Counties. This distribution was not normally distributed as indicated by the value of Jarque-Bera.

Graphical Analysis of Study Variables

This section provided the graphical representation of the study variables. The graphs were used to show how capital expenditure, wage bill and local revenue performance were varying in different counties using a line graph.

Graphical Analysis for Capital Expenditure of Counties in Kenya

The results in the figure 1 show how capital expenditure varied in different counties in Kenya.
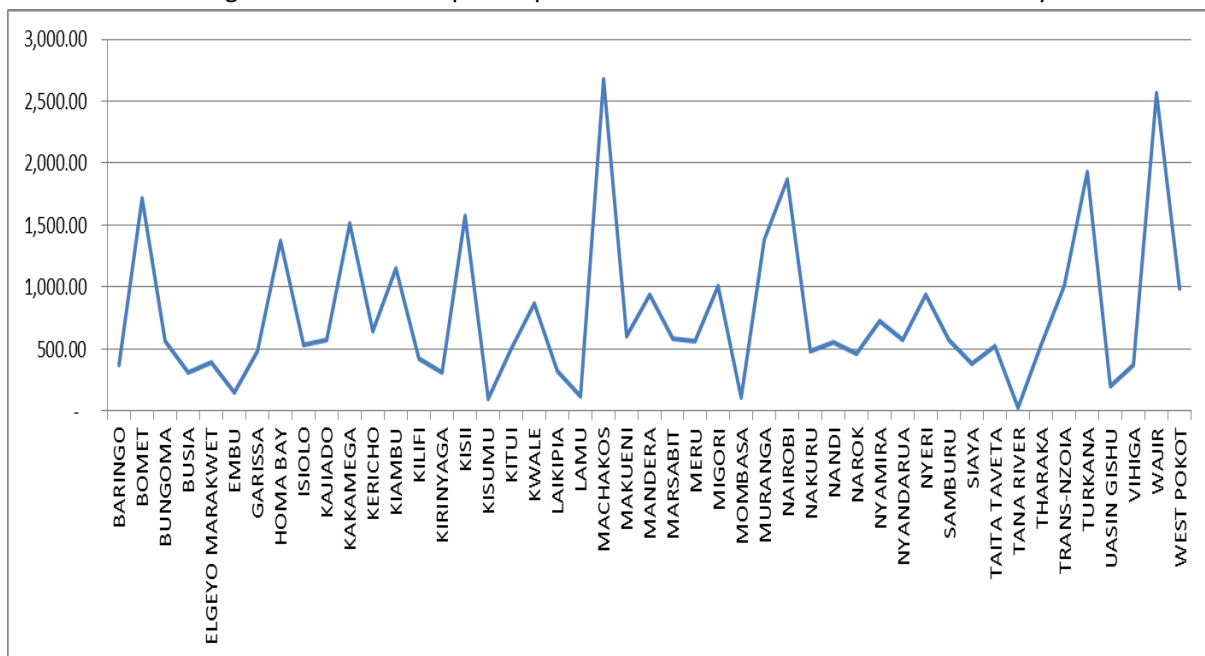

Figure 1: Graphical Analysis for Capital Expenditure (Kshs. Millions)

Capital expenditure refers to the value of goods and services provided by the county government to its area of jurisdiction. The results in the figure 1 indicate that the county with the least capital expenditure was Tana River County at Kshs. 32.4

million. This could be attributed to incidences of insecurity in the region in recent time. On the other hand the findings indicate that Machakos County spent the highest on capital expenditure at Kshs. 2.68 billion. Other counties with the

highest capital expenditure included Wajir County Kshs. 2.5 billion, Turkana County Kshs.1.9 billion, Nairobi County Kshs. 1.8 billion and Bomet County at Kshs. 1.7 billion.

Graphical Analysis of Local revenue Performance of Counties in Kenya

The study also analyzed local revenue performance of the county governments in Kenya. Local revenue performance was calculated by dividing local revenue over total revenue. Figure 2 shows the graphical representation of local revenue performance of all the 47 counties in Kenya.
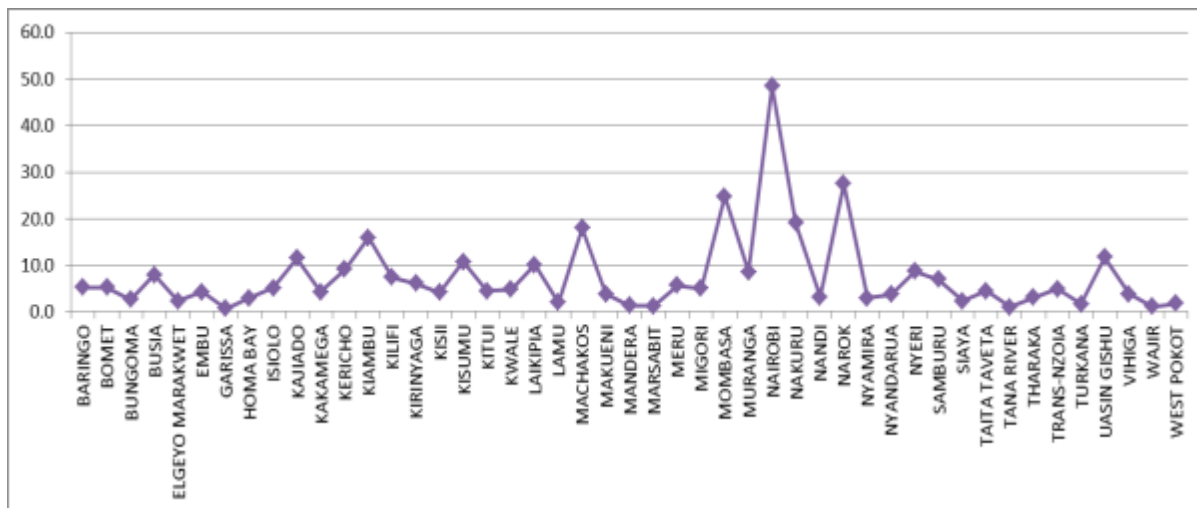

Figure 2: Graphical Analysis of Local revenue Performance

The findings in the figure above show that local revenue performance in most of the counties was low. The findings indicate that Nairobi County, Narok County and Mombasa County had the highest local revenue performance. Nairobi County and Mombasa County are urban cities with various viable streams of local revenue. Counties with the least local revenue performance were Wajir, Tana River and Garissa. The low local revenue performance could be attributed to the static and narrow revenue streams in these counties. Further these counties are located in arid and semi-arid regions where climate conditions are unfavorable for economic activities. The implication of these findings is that county governments need to review their tax legislations and systems to improve local revenue collection.

Graphical Analysis for Wage Bill of Counties in Kenya

The study also analyzed the wage bill of the county governments in Kenya. The wage bill refers to expenditure on salaries and allowances for public servants. Figure 3 shows the graphical representation of wage bill.
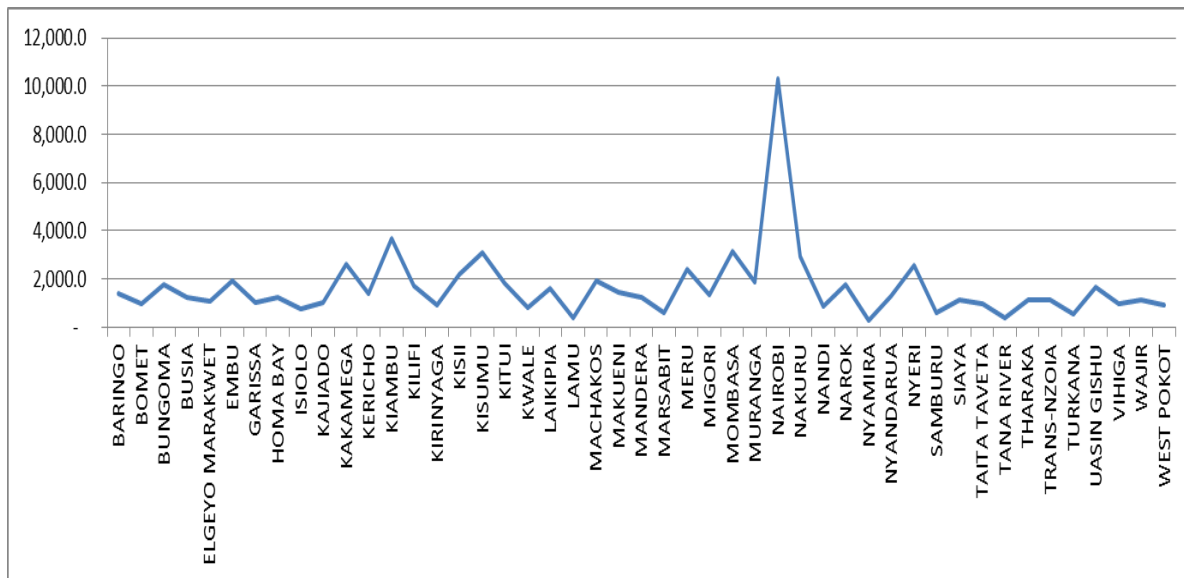
Figure 3: graphical representation of the wage bill (Kshs. Millions)

The findings in the figure above show that majority of the counties had a wage of about Kshs. 1.2 billion. The findings also show that Nairobi County had the highest wage bill at about Kshs. 10.3 billion. The county with the lowest wage bill was Nyamira County followed by Lamu and Tana River Counties.

Pre-Estimation Tests

Prior to running a regression model pre-estimation tests were conducted. The pre-estimation tests conducted in this case were the unit root tests and multicollinearity tests. This is usually performed to avoid spurious and biased regression results from being obtained.

Test for Multicollinearity

According to William *et al.* (2013), multicollinearity refers to the presence of

correlations between the predictor variables. In severe cases of perfect correlations between predictor variables, multicollinearity can imply that a unique least squares solution to a regression analysis cannot be computed (Field, 2009). Multicollinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors (Belsley *et al.*, 1980). The results in Table 2 present a correlation matrix results and according to Field (2009), multicollinearity exist if there is a correlation of above -0.7 and + 0.7 hence the findings in the table below indicates that there is no Multicollinearity.

Table 2: Correlation Matrix

	LNCAPEXP	LNWAGEBILL	LOCALREVPER
LNCAPEXP	1		
LNWAGEBILL	0.19177	1	
LOCALREVPER	-0.32221	0.66596	1

Unit Root Tests

Most economic variables are usually non-stationary in nature and prior to running a

regression analysis. Unit root tests were thus conducted using the ADF test to establish whether the variables were stationary or non-

stationary. The purpose of this is to avoid spurious regression results being obtained by using non-stationary series. Results in Table 3 indicated that all variables are stationary. This called for first differencing of this non-stationary variable to make them stationary.

Table 3: Unit Root Tests at Level

Variable name	ADF test	1% Level	5% Level	10% Level	Comment
LNCAPEXP	-7.516510	-3.51152	-2.926622	-2.601424	Stationary
LNWAGEBILL	-6.185491	-3.81152	-2.926622	-2.601424	Stationary
LOCALREVPER	-5.615833	-3.81152	-2.926622	-2.601424	Stationary

Table 7 displays the unit root tests after first differencing. It is clear from the results in table 4 that all the variables become stationary (unit root disappears) on first differencing.

Table 4: Unit Root Tests at First Difference

Variable name	ADF test	1% Level	5% Level	10% Level	Comment
LNCAPEXP	-7.516510	-3.51152	-2.926622	-2.601424	Stationary
LNWAGEBILL	-6.185491	-3.81152	-2.926622	-2.601424	Stationary
LOCALREVPER	-5.615833	-3.81152	-2.926622	-2.601424	Stationary

Post-Estimation Tests

After running the specified regression model the test for normality, Heteroskedasticity and autocorrelation were conducted so as to ensure all the Ordinary Least Squares assumptions are not violated. Co integration test was also conducted to check whether the error term generated from the long run model was stationary. A stationary error term implies that co-integrated relationship exist between long run variables. In addition the presence of co-integration indicates that there exists an underlying short run relationship.

Test for normality

The test for normality was examined using the graphical method approach as shown in the Figure 3. The results in the figure indicate that the residuals are normally distributed.

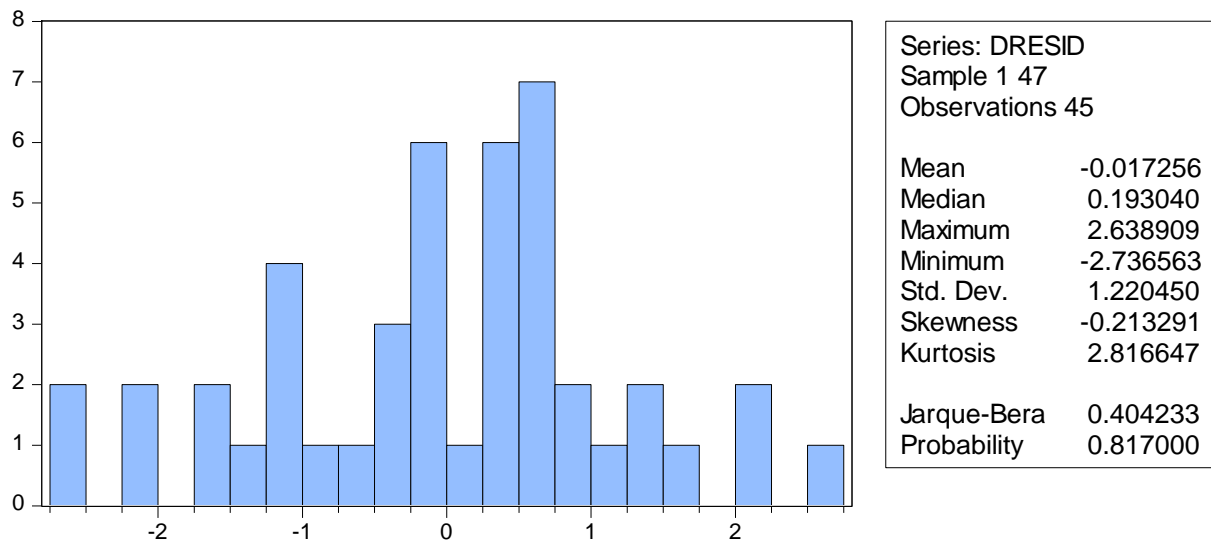|	
Series: DRESID	
Sample 1 47	
Observations 45	
Mean	-0.017256
Median	0.193040
Maximum	2.638909
Minimum	-2.736563
Std. Dev.	1.220450
Skewness	-0.213291
Kurtosis	2.816647
Jarque-Bera	0.404233
Probability	0.817000

Figure 3: Histogram of Residuals

To further establish whether the residuals are normally distributed the study adopted the Jarque-Bera test which is a more conclusive test than the graphical inspection approach of testing for normality. The results of the Jarque-Bera test are shown above. The null hypothesis under this test is that the residuals are not significantly different from a normal distribution. Given that the p-value is greater than 0.05 for the residual, the null hypothesis is accepted and thus the conclusion that the residuals are normally distributed.

Test for Heteroskedasticity

Ordinary least squares (OLS) assumption requires that the error term should have a constant variance (i.e. they should be Homoskedastic). The White's test was used to test for the same where the null hypothesis of the test is that error terms have a constant variance (i.e. should be Homoskedastic).

Table 4: Tests for Heteroskedasticity

Heteroskedasticity Test: White

F-statistic	0.982282	Prob. F(14,31)	0.4924
Obs*R-squared	14.13546	Prob. Chi-Square(14)	0.4397
Scaled explained SS	17.66612	Prob. Chi-Square(14)	0.2224

The null hypothesis is accepted given that the reported p-value 0.4397 in table 4 was greater than the critical value and thus concluded that the observations have constant variance or do not have the problem of Heteroskedasticity.

Test for autocorrelation

The test for autocorrelation was performed to establish whether residuals are correlated across time. OLS assumptions require that residuals should not be correlated across time and thus the Breusch–Godfrey test which is also an LM test was adopted in this study. The null hypothesis is that no first order serial /auto correlation exists. The results of the Table 5 indicated that the null hypothesis of no autocorrelation is not rejected and that residuals are not auto correlated (p-value=0.4076). The null hypothesis is that there is no serial correlation of any order.

Table 5:   Serial Correlation Tests

Breusch-Godfrey Serial Correlation LM Test:

| F-statistic | 0.918492 | Prob. F(2,39) | 0.4076 |
| Obs*R-squared | 2.069233 | Prob. Chi-Square(2) | 0.3554 |

Co integration test

Co integration test was performed using two step Engle granger test and Johansen co integration test. In the two step Engle granger test, residual of the long run model are generated (step one). In the second step the residuals are converted in their first lag and unit root test is conducted on the lag residuals. Results of Engle granger presented in table 6 reveals that the lag residual is stationary at level this is evidence of co integration relationship between the long run and short run.

Table 6: Co integration test

Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.367065	0.0000
Test critical values:	1% level	-3.596616	
	5% level	-2.933158	
	10% level	-2.604867	

The Johansen co integration test was conducted since it's more accurate and superior to Engel granger test of co-integration. Johansen results indicate that the null hypothesis of at most 5 co-integration equations was rejected at 5% significance level. The trace statistic for the null hypothesis for the existence of at most 5 co- integration equations was larger than the set critical value at 5%. This implies that more than 5 co-integrating equations existed this further implies that all the variables in the model converge to an equilibrium in the long run (i.e. are co integrated) as shown in Table 7.

Table 7: Johansen Test for Co-integration

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.616986	118.4889	69.81889	0.0000
At most 1 *	0.490844	76.26283	47.85613	0.0000
At most 2 *	0.412973	46.56277	29.79707	0.0003
At most 3 *	0.303567	23.12464	15.49471	0.0029
At most 4 *	0.151067	7.206123	3.841466	0.0073

Regression Results on the Determinants of Capital Expenditure

This section contains the results of long run model of determinants of capital expenditure by county governments in Kenya. The variables used in this analysis were in there raw forms. The results of the regression models adopted are presented in Table 4.6. The R squared of 0.41 indicates a satisfactory goodness of fit. The model implies that 41% of the variation in capital expenditure is explained by the independent variables. The overall model was significant as demonstrated by an F statistic of 21.29 (p-value= 0.026). This further implied that the independent variables had good joint explanatory power on capital expenditure.

Table 4.9 Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNWAGEBILL	-0.913609	0.352716	-2.59021	0.0195
LOCALREVPER	3.550541	1.672324	2.12311	0.0509
C	14.70506	7.300935	2.01415	0.0205
R-squared	0.412527	Mean dependent var		20.16403
Adjusted R-squared	0.385944	S.D. dependent var		0.889353
S.E. of regression	0.877740	Akaike info criterion		2.679390
Sum squared resid	31.58754	Schwarz criterion		2.878155
Log likelihood	-56.62596	Hannan-Quinn criter.		2.753848
F-statistic	21.29942	Durbin-Watson stat		2.075227
Prob(F-statistic)	0.026149			

Optimal model

Capital Expenditure **=** 14.70506 + (-0.913609) *Wage Bill* + 3.550541 *Local Revenue Performance* + ε

Local Revenue Performance and Capital Expenditure

Further, the findings of this study indicated that local revenue performance was positively and significantly related to capital expenditure (B=3.550541, p=0.0509). A unit increase in local revenue performance will cause a variation of 3.550541 units in capital expenditure. This implies that county with high local revenue collection also have enough resources to channel to capital projects.

The findings of this study are consistent with Bird (2008) who concluded that a robust revenue mobilization system for local governments is an important precondition for the success of fiscal devolution. Further, the findings of this study are consistent with Torome (2013) who established a positive relationship between local revenue mobilization and local government performance. Similarly, Brooksons (2002) and Maina (2013) reported similar results when they found that reforms in local tax systems and administration had a positive impact on local revenue mobilization.

Wage Bill and Capital Expenditure

The findings of this study indicate that wage bill has a negative statistically significant relationship with capital expenditure (B=-0.913609, p=0.0195). An increase in the wage will have a corresponding decrease in capital expenditure because most of the revenue will be used on recurrent expenditure compared to investing in capital for long term projects. A unit increase in wage bill will cause a negative variation of 0.9136 in capital expenditure.

The findings of this study are consistence with those of KIPPRA (2013) that showed that the escalating wage bill has a direct impact on the performance of the national economy. For instance, the findings showed that huge wage bill result in diversion of development funds to recurrent expenditure (salaries and allowances) at the cost of development, thus slowing down economic growth. COB (2014) also noted that high share of wage bill had a negative impact on capital projects as development expenditure accounted for a paltry 9 per cent of the total expenditure during the period studied. Similarly, KIPPRA (2013) reported that county governments are grappling with a bloated wage bill as substantial resources are diverted to pay for personnel costs. For example, in FY2013/14 the county governments wage bill accounted for 40.1 per cent of the total expenditure.

SUMMARY OF FINDINGS

This section presents the summary of the findings in line with the objectives of the study.

Effect of Local Revenue Performance

The first objective of the study was to investigate the effects of local revenue performance on capital expenditure of county government in Kenya. The findings of this study indicated that local revenue performance was positively and significantly related to capital expenditure. A unit increase in local revenue performance will cause a variation of 3.550541 units in capital expenditure. This implies that county with high local revenue collection have adequate resources to channel towards capital projects such as roads and healthcare infrastructures. The findings of this study validated the findings of Bird (2008) and Torome (2013) that concluded similar studies and found out a positive relationship between local revenue mobilization and local government performance.

Effect of Wage Bill

The second objective of the study was to determine the effect of wage bill on capital expenditure of county governments in Kenya. The findings of this study indicated that wage bill has a negative statistically significant relationship with capital expenditure. An increase in the wage will have a corresponding decrease in capital expenditure because most of the revenue will be used on recurrent expenditure compared to investing in capital for long term projects. A unit increase in wage bill will cause a negative variation of 0.9136 in capital expenditure.

The findings of this study are consistence with those of KIPPRA (2013) that showed that the escalating wage bill has a direct impact on the performance of the national economy. For instance, the findings showed that huge wage bill result in diversion of development funds to consumption at the cost of development, thus slowing down economic growth. COB (2014) also noted that high share of wage bill had a negative impact on capital projects as development expenditure accounted for a paltry 9 per cent of the total expenditure during the period studied. This study adds to the existing knowledge about the influence of wage bill on capital expenditure of county governments. The study used secondary data which is more factual. Therefore, the findings of this study validated the finding of other previous study conducted in this field.

Conclusions

The study conducted empirical analysis of determinants of capital expenditure by county government in Kenya. The determinants investigated include wage bill and local revenue performance. Data analysis was conducted using secondary data collected from Kenya National Bureau of Statistics and CBK. The results of this study revealed that wage bill has a negative and significant relationship with capital expenditure by county governments in Kenya. The findings also showed that there existed a positive and significant relationship between local revenue performance and capital expenditure by county governments in Kenya. Based on the findings above this study therefore concludes that wage bill and local revenue performance are key aspects that determine capital expenditure by county governments in Kenya.

Recommendations

Based on the findings of this study, the following recommendations can be made for policymakers and relevant stakeholders.

Local Revenue Performance

County Governments should invest in integrated revenue collection and management systems that promote efficiency, effectiveness and accountability in revenue collection. Besides the automation interventions, County Governments will need to design schemes of service for revenue collectors and their supervisors, indicating minimum levels of qualification, entrenching penalties in the event of corruption, and facilitating regular and targeted capacity building. It will also be critical for counties to invest in effective revenue collection operations, including field transport and security and ensure cost effectiveness in deployment of revenue collectors and supervisors. Ultimately, County Governments can establish designated pay points at the various service delivery areas. This would improve efficiency in revenue collection, while reducing administration costs. The system should also include an integrated audit and control module to enable revenue monitoring at all levels of revenue collection, reporting, transfer to the County Revenue Fund Account, and utilization.

Wage Bill

This study recommends that county should keep the wage bill at sustainable level to create more resources for capital expenditure. Further, county governments should initiate resource mapping of the available human resources and build capacity of the existing staff rather than hire new employees. Where there is inadequate capacity, county governments should liaise with the National Government through the Ministry of Planning and Devolution for possible staff secondment. There is also need to conduct regular audit of the payroll system to weed out 'ghost workers' and retired staff.

Suggestions for Further Studies

This study recommends that future research should focus on factors that enhance county government revenue collection. In particular, future studies should focus on how automation of revenue collection system and internal control system affect local revenue performance. Further, this study could be repeated after several years when sufficient data is available to allow for time series analysis.

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