TAX GAP AND ECONOMIC PERFORMANCE IN KENYA

BY

SYLVIA KWAMBOKA OMBATI

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SUPERVISOR: DR BARASA

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DECLARATION

I hereby declare that this paper is my original work and has never been submitted to any
institution or university for the award of a degree.

Signed: Date:

Sylvia KwambokaOmbati

X50/5942/2017

The projected has been submitted for examination for approval by the University of Nairobi
supervisor.

Signed: Date:

Dr. Laura Barasa

DEDICATION

I dedicate this work to my dear parents, Mr. Isaac Elijah Ombati and Mrs. LydiahMonyangi

Elijah, my husband David Machoka and my son Chris Ombati who have tirelessly supported me

throughout my education. May God bless you.

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GDP- Gross Domestic Product

KRA- Kenya Revenue Authority

GST-Goods and services tax

VAT- Value Added Tax

ICPAK-Institute of Certified Public Accountants of Kenya

KNBS-Kenya Bureau of Statistics

ARDL-Autoregressive Distribution Lag Model

ABSTRACT

Tax is the main source of revenue for most developing nations and development of any country is dependent on revenue generation. This is because government expenditure is dependent on the availability of revenue. In this study, the researcher sought to find out the relationship between tag gap and real GDP which is a proxy of economic performance in Kenya. Data from KNBS, the Kenya revenue authority and World Bank micro data was used and was analyzed using the Stata software.

Annual time series data spanning from 1987 to 2018 will be used for analysis. Linear regression model was used to come up with autoregressive distribution lag model. The results showed that there was a significant negative relationship between the two variables. Other variables included in the model that affect real GDP include interest rates and inflation rates that affect the explained variable negatively while capital formation and employment levels cause a positive effect on the dependent variable. In conclusion, more enforcement should be put to reduce the tax gap to increase economic performance.

The study will help the government adopt strong fiscal policy measures that put more efforts in increasing tax base to widen tax levels but not increasing tax burden. It will aid the KRA in the digital touch process to ensure maximization of tax revenue collection hence increase in government expenditure leading to economic development. Furthermore, it will help improve the available literature on factors that result to increase in tax gap and come up with strategies of minimizing it. Further areas for research will be proposed at the end of the study.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Tax payment is common and old revenue source in many nations and it is an instrument in public policy. Tax revenue sourced through imposing a charge on an individual or corporate entity is used to finance government expenditure. Acceptance to pay tax makes its meaning generally worthy.

There exist three major tax systemsnamely regressive tax system under which income increases withtax decreases. Progressive system is one in which tax level increases with income. Proportional is another tax system in which all people pay similar tax rates irrespective of their income level.

It should be clear that, before the introduction of income tax, several trials had been put into place concerning tax payment. In the year 1852, the poll tax ordinance was put into place to raise funds to support the rising cost of the administration in Britain. In the evolution of many nations in North America and Europe, taxation was common among these countries. The war against poverty, economic stagnation, crime, diseases among others required citizens to take part in the payment of tax (Elbling, 2009).

Evasion is deliberate and it follows various forms such as custom duty evasion by under invoicing, goods smuggling by the use of unauthorized borders and value added tax evasion among others.

Almost 86.3% of economic work is done by the self-employed in the informal sector out of which less than 30% pay taxes (Focus, 2012). There is need to explore all possible ways to minimize this to improve revenue collection and strengthen our country's fiscal state and GDP. Direct tax may be accustomed to the individuals' features of the taxpayer while indirect one are

imposed on transaction without considering the circumstances of buyers or seller. Examples of direct tax are corporate, income, capital gain and transfer taxes. Indirect taxes include sales tax, VAT and GST.

Avoidance in other words, is giving the least possible amount of tax using all available legal methods. In a few situations, large multinational firms don't adhere to tax payment because of manipulation of their records. On the other hand, tax evasion is an illegal action and is subject to fines and penalties. It entails a deliberate action of non-compliance leading to payment of lower amounts of tax than actually owed (More et al., 2014).

Figure 1 shows GDP to tax revenue trend between the year 2010 and 2014 in Kenya. It is evident that despite the increase in tax revenue, there is a decrease in GDP growth mainly because of failure of meeting the expected tax revenue. This therefore result to increase in the tax gap thus pressure to borrow to enhance economic development.

Figure 1: GDP verses tax revenue

GDP to Tax Revenue Chart
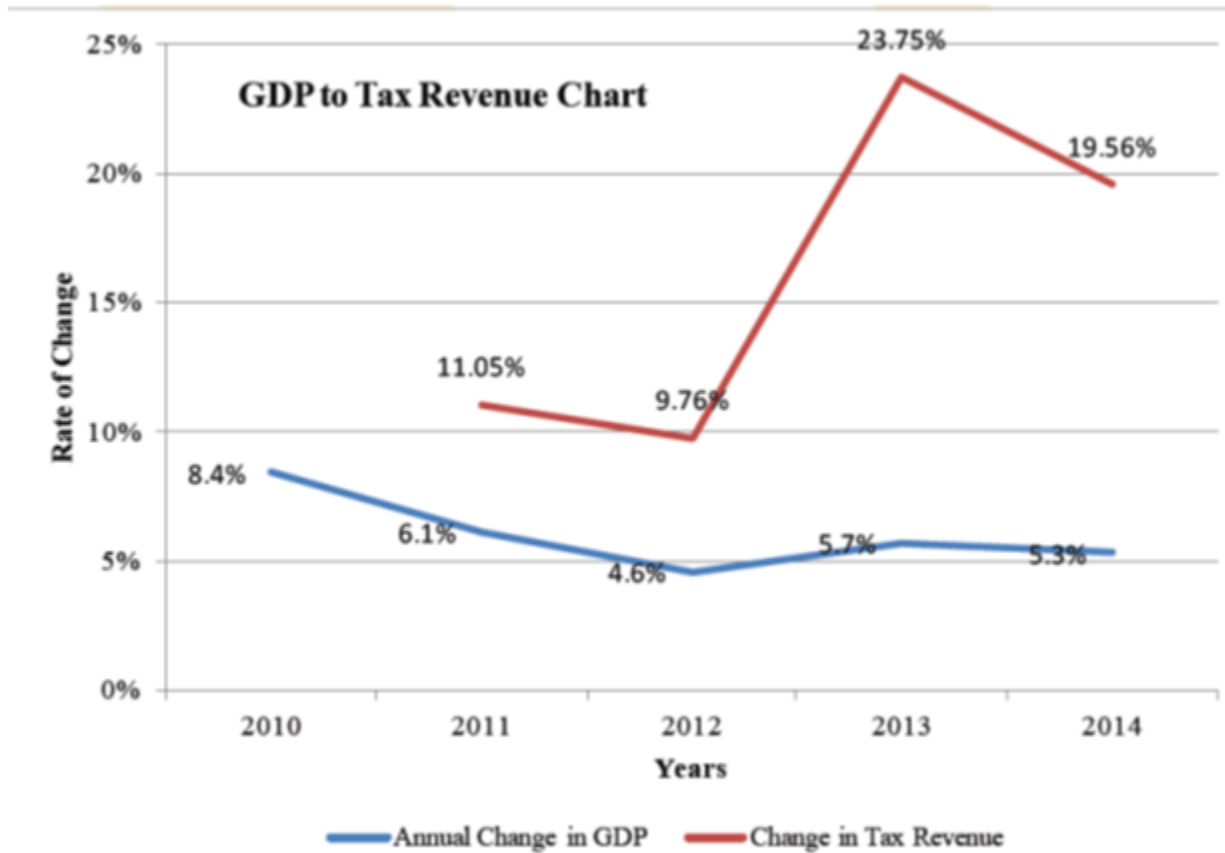
Source: Figures from KNBS & ICPAK Computations

1.2 Problem Statement

Any country's prosperity is dependent on the availability of revenues and resources generated by the government. Poor compliance levels are key concerns in most developing nations because it prevents the authorities in achieving recurrent expenditure in those nations. In Kenya, there is a higher rate of evasion in the informal sector because most enterprises in this sector remain undetected since they are not registered by the authority. Kenya as a developing nation has registered low levels of tax revenue collection because of poor administration, high levels of corruption, and poor tax enforcement strategies among others.

The main cause of evasion in the informal sector is because of a high tax burden in Kenya. Additionally, compliance cost in the informal sector is higher. From the 2012 Kenyan Economic Survey, the informal sector contribution to GDP was about 25%. Potential GDP increased from 7.58% in the year 2002 to 16.61% in 2008 with a corresponding tax as a percentage of GDP increase from 2.52% in 2002 to 7.66% in 2008. It implied that there was increase in the shadow economy which is left out in taxation making Kenya unable to attain its targeted revenue collection.

Mistrust and inappropriate structural dialogue are the major causes of failure of the informal economy contributions towards tax collection. Although the payment of tax is unavoidable for social welfare provision, most people and companies desire to reduce their tax liabilities thus ending up avoiding tax payment legally or evading illegally. Other causes of larger tax gap include poor tax systems, corruption, low income, high tax levels, among others. Due to these noncompliance acts, revenues generated from tax collection have failed to assure a strong role in a nation's management fiscal policy. To attain better economic performance of any nation, these acts need to be reduced.

Evasion and avoidance acts in Kenya have resulted to low revenue collection thus a continuous increase in tax gap which further affects the Kenyan economy. Therefore, this study aims at evaluating the effect of tax gap on the Kenyan economic GDP.

1.3. Objectives of the Study

The general objective of this study is to evaluate the relationship between real GDP and economic performance. The specific objectives include:

i. To establish the effect of tax gap on economic performance in Kenya.

ii. To come up with policy recommendations on how to minimize tax gap in Kenya.

1.4. Significance of the study

This study is of great importance to tax administrators, officers from the revenue authority, lecturers and researchers on tax relations since it lays foundation for further research. The researchers' suggestions also benefit tax officials, payers, and revenue collectors. By selecting some of the ideas from the researchers' findings and implementing them appropriately, the government will also gain from this research.

1.5. Scope of the Study

The research is restricted to tax collected by the KRA which include cooperate income taxes, stamp duties,VAT, capital gain tax, sales tax and non-residence deriving income in Kenya since 1987 to 2018.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The study aims at establishing therelationship between tax gap and economic performance in Kenya. This chapter entails theoretical literature that covers theories on these non-compliance practices and empirical review is concerned with documented work.This part of the literature review looks at some of the related works done by previous authors of the topic. The theories help one be clear with the problem and know other researchers' views concerning the subject matter.

Generally, it is the duty of the government to provide most public services such as health, transport, security, education, foreign affiliation among others. By provision of these services, it generates income through taxation thus raising revenue used to finance government expenditure, income redistribution and economic welfare promotion. Thus, taxation is among the main sources of government income and expenditure in any economy.

2.2 Theoretical Review

2.2.1 The Basic Model of Tax Evasion / Theory of Individual Choice

This model was proposed by Allingham and Sandmo in 2005, thus giving it the title the A-S model. The aim of the model was to bring into attention that for a taxpayer to fill in tax return, he or she ought to decide between indicating the total sum of income or if he or she opts to indicate part of the income, there will be punishment by the tax authority. This makes it clear that compliance depends on law enforcement and fear of punishment in case of detection.

The main assumption of the model is that the taxpayer is risk averse and his or her argument of utility is based on the income received. The aim of the tax payer is to maximize

utility revenue under the risk condition. That a rational person will always refer to the utility oaf maximizing avoidance by comparing the benefit of a successful avoidance and probability of detection.

The parameters in the model include personal income, tax rates and penalties. Through comparative statics, you can evaluate the effects of the model parameters on an individual decision to pay tax. This attitude to pay tax by individual is what creates the difference between expected and actual tax payment. If the attitude is positive, then there will be less or no tax gap and if it is negative, then there will be large tax gap.

2.2.2 The Fiscal Exchange Theory

Government expenditure in the provision of public goods makes citizens observe the available tax rules. This only occurs when the government offers the public goods in a commendable manner thus creating a direct link between the government and tax payers in the long run.Knowledge and awareness about tax are positively correlated with compliance. Tax payers' attitudes towards taxation ought to be inspected to counter tax gap levels. That when myths and unclear perceptions are substituted with facts, the attitudes of the payer towards compliance will be affected.

Additionally, misunderstanding majorly contributes to the assessments and impartiality. Personal attitudes and other people's attitudes towards evasion are all significant. When the government spends income in providing social amenities for example transport, health, security and electricity, compliance level will be positively affected. That will result to increase in revenue collection reducing the level of tax gap which will intern affect the level of economic performance positively.Therefore, taxpayer's insights are hypothetically important in determining the compliance levels (Alm et al., 2010).

2.2.3 The Shadow Economy

The shadow economy also called the underground economy consist of the activities taking place in any economy that are illegal. These activities include counterfeiting, sell of prohibited goods in a country, smuggling among others. According to Tanzi and Shome (1993), tax collectors' act of corruption play a role in underground economy sustainability thus resulting to non-compliance activities of evasion and avoidance leading to a large tax gap. This economy results to depression of the GDP. By reducing the underground economy, increases revenue collection thus rise in expenditure which will lead to improvement in the economy.

Additionally, there exists the 'Jua Kali" industry that produces and sells goods to consumers without keeping records thus resulting to tax evasion in the economy. This can lead to higher tax rates thus inefficiency and inequity in the economy.

The major causes of the underground economy include security and tax burdens, tax morale, state institutions quality and the labor market rules. Reduction in the tax burden is likely to lower the shadow economy thus increase in tax revenue collection which will reduce the tax gap (Schneider, 2013).

2.3 Empirical Literature

Kuria (2016) study on compliance and tax payers' attitudes in Kerugoya town of two hundred and sixty taxpayers in both medium sized and small sized enterprises. They did a cross sectional study and made a conclusion that the Kenyan tax system was biased. Some of the causes of large tax gap include; failure to understand the tax rules, the feeling that the tax rates are unfair and peer pressure. Their conclusion is that there is a strong relationship between compliance levels and attitude with 0.846 correlation coefficient.

According to Ndinda (2012) study on tax evasion and avoidance as a factor impacting 'creative accounting practice' in Kenyan companies.Through the use of descriptive statistic, it is clear that the presentation of false statements of accounts, record destruction, and false entry making among others result to tax noncompliance acts. When comparing the noncompliance rates in developed and developing nations, it is clear that the rate is higher in developing countries. This is because of the existence of few large firms and enterprises, low tax morale, many poor people and lower usage of tax specialists (Maurin, Sookram, and Watson, 2003).

Magiya (2016) did a research on the effects of electronic taxation on Kenyan audit firms. By employing a linear regression probit model, he identified evasion as a major problem in Kenya. That even after change of administration designs between the years 1996 and 2005, still tax competitiveness in Kenya was low. High tax evasion levels result to a large tax gap thus poor economic performance. Tax code is burdensome as a result of thin tax base, high tax rates, partial and uneven taxes, poor tax system, among others, affect growth and result to low revenue collection.

Desai and Dharmapala (2012) explored the function of high powered motivations by the management on the decisions on sheltering and diversions on rent. Their findings were that high powered incentives have larger positive impact on sheltering in well monitored firms as compared to poorly governed ones. Chen et al. (2002)came up with an evasion model with incomplete contracts. Since rules need the agents to involve themselves in illegal acts, it is impossible to have a contract that covers the agent in cases where there is detection of evasion.

Using data from 4, 538 firms in 23 transition nations; Nur-Tegin (2008) examined causes of tax compliance among businesses in these transition economies like China. These determinants are both standard causes of compliance including the tax rates and detection

probability, and modern factors including governance trust, costs of compliance and corruption. The author's findings are highly similar with theoretical predictions. The most interesting thing is that corruption fighting in of greater importance in preventing evasion than other measures such as the rates of tax.

According to Gamannossi (2017) review on personal evasion of taxin the United Kingdom, evasion focuses on motives of agents to evade taxes. However, various studies show that the causes of corporate evasion are different from those causing personal evasion as a result of the urge to into consideration the major agent problem. Family run firms with fewer severe principal agent problems are less destructive than non-family run firms (Chen et al., 2010).

Among the factors affecting tax compliance levels include morale of people which increases self-enforcement of compliance in tax. However, self-esteem is not easy to accomplish especially in those nations that lack habits and culture of tax payment.Poor quality of services in payment for tax payment is another cause of noncompliance. Mostly, citizens avoid services or gains from tax paid. In case the government fails to offer services and public goods or rather it offers them inadequately, people may fail to bear the consequence thus large tax gap (Everest-Phillips, 2008).

High compliance costs also affect the level of tax payment. These are the costs incurred by taxpayers to get the crucial information, fill out tax form that can result to tax evasion and avoidance. Everest-phillips (2008) explains Yemen's local tax mapping that found more than1500 various tax rates. This situation resulted to business fear about the administration burden than the tax burden. This case, it's clear that the costs of compliance is greater thus the probability of taxpayers to comply with great variety lowers tax.

Low levels of identifying and prosecuting unsuitable tax practices is another cause on noncompliance. A working entity for investigating tax is important for purposes of prosecution and detection of fraud cases. Absence of enough capacities in administration of tax lowers the probability to be detected influencing the decision of payers as to whether to take part in evasion or not. Not forgetting the legal framework which is of great importance for enforcing activities. Additionally, the legal basis is a significant pre-requisite for any implementation activity. For instance, the level and amount of consequences incurred after evading tax is directly linked to the extent of compliance (Devos, 2014).

According to non-economic and economic tax compliance theories,among the aspects that impact the individual tax compliance decision include: fines and penalties, tax burden, social normal, state services among others. Higher rates of taxes and unfair tax systems also have an influence in tax compliance levels of individuals (Helhel& Ahmed,2014).

Following a theoretical analysis on income tax evasion, every person aims at maximizing the utility of the expected gamble by comparing the risk of detection and punishment with the benefit of a successful evasion (Reichhardt& Reichhardt, 2005). Thus a conclusion that evasion depends on the tax fines rates and punishment in case of detection. According to the expected utility theory, most nations set low penalty levels thus rational individuals evade taxation because it is unlikely for them to be caught.

Alm et al. (2010)posit that in the shadow economy, the main cause of rise in this economy is the increase in taxation burden in most nations. In cases of these higher taxation burden, tax payers react by reporting low incomes other than the true one. Also, uncertainty decreases the rate at which individuals file and report compliance. While theoretical result claim that compliance increases with tax increase, empirical work shows that compliance decreases

with increase in tax rates. This calls for further analysis to be clear about relationship between compliance and tax rate.

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CHAPTER THREE*:* RESEARCH METHODOLOGY

3.1 Introduction

This chapter entails concepts and theories underlying the study, methods to be used in the research to aid the researcher comprehend how to systematically and theoretically analyze the sources of data, methods of sampling to be used, sampling size and the sampling size. The researcher is also able to determine the methods of data collection, instruments, techniques as well as procedures and be able to explain the relationship between the variables.

3.2 Theoretical Framework

Smith and Todaro (2006) found out that between 1995 and 1997, averagely 18.2% GDP of revenue was collected in developing nations while in the developed ones, it was 37.9%. It was because of increased expenditure in provision of public goods and higher capacities to generate this revenue. The causality of high revenue generation is larger for development but sensible expenditure on capital and human development causes the causality to behave in an opposite way.

Tax non-compliance has been a major challenge facing the revenue collection authorities to realize their annual targets in most countries. This condition has made it hard to make correct estimates given that few countries realize tax surplus. Nur-Tegin (2008) looks at many causes of compliance in tax where he fails to consider the firm's financial condition which is a major determinant of avoidance and evasion of tax.

Desai and Dharmapala (2006) brings forth the firms aim for financing as a major cause for the noncompliance acts. If financial restraints become tighter after deteriorations in internal or external financing conditions, noncompliance acts become more attractive and firms opt to evade more taxes.

In addition to that, companies' external financial constraints depends on the rates of interest and the collateral levels. According toLevin (2006) estimates on tax evasion amounts in Kenya and Tanzania through measurement error calculation in trade flows. There was a conclusion that the Kenyan and Tanzanian tax evasion practices are factors that result to poor tax performance thus deteriorating economic growth and development.

3. 3 Econometric Specification

The decision on tax compliance depends on tax structure and tax enforcement variablesPaper (2004). This study will estimate the relationship between tax noncompliance acts, inflation rate and interest rate on economic GDP which is a proxy for economic performance by the use of Linear Regression Model given by:

$$GDP_t = f(TaxGap_t, Inf_t, Interest_t \, Capital_t Unemployment_t)$$

Where GDP_t is the Gross Domestic Product at time t, $TaxGap_t$ is the difference between the expected and the actual tax payment representing the noncompliance acts, Inf_t is the inflation rate at time t, $Interest_t$ is the lending interest rate at time t and $Unemployment_t$ is the the labor force levels.

Writing our empirical model such that the explanatory variables will have a joint effect on the explained variable, the model becomes;

$$GDP_t = \beta_0 + \beta_1 \, TaxGap_t + \beta_2 \, Inf_t \beta_3 \, Interest_t + \beta_4 Capital_t + \beta_5 Unemployment_t$$

Where the variables are previously defined, ε_t is the error term and $\beta_0, \beta_1, \beta_2, \beta_3 \beta_4$ are parameters to be estimated.

However, because of using time series data, data will be described in terms of its past values through the use of Autoregressive model. However, the variables may be integrated of different orders, therefore the use of Autoregressive Distribution Lag Model (ARDL) to test for co-integration will be relevant.

3.4 Data Sources and Type

Data from Kenya Revenue Authority (KRA), the Kenya National Bureau of Statistics (KNBS) as well as World Bank micro data between the years 1985 to 2018 will be relevant. It will be secondary and time series data. The data will be analyzed using STATA software and results will be presented in graphs to show the relationship between the variables,(Nur-Tegin, 2008)**.**

3.5Definition and measurement of Variables

Variable	Description and Measurement	Expected sign
Economic GDP	It measures a country's economic activities within a given period of time.	Positive(Length, 2016)
Tax gap	This is the difference between the expected tax payment and the actual tax payment representing tax noncompliance acts.	Negative(Al-shawawreh & Al-smirat, 2016)
Inflation rate	The average rate at which the price of goods in an economy	Negative(Ayyoub, 2011)

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	increases.	
Capital stock	Sum of assets used to perform economic work.	Positive ((Link & Capital, 2008)
Interest rates	That percentage of money lent charged by the lender.	Negative(College, 2001)

3.6 Econometric Issues

Some of the issues that expected to be experienced by using time series data include non-stationarity of variables which can be tested through the use of Dickey-Fuller test and removed through differencing. The number of lags to include in differencing depends on the order of integration. For example if a series integrated of order two, you difference it twice to make it stationary.

Autocorrelation is another problem which is serial correlation of the disturbance of the error term across time period. The test of autocorrelation will be carried out using the Durbin Watson test and solved by the use of Augmented Dickey Fuller Test. The first remedial measure is to check whether there is omission of one or more explanatory variables. If this does not solve the serial correlation problem, then apply the differencing procedure to all independent variables and rerun the model by deleting the intercept from the model. The number of lags to include should ensure that there is no autocorrelation.

CHAPTER 4: RESULTS AND DISCUSSION

4.0 Introduction

This section contains the empirical outcomes and their interpretations. It also presents the relevant tests and model results as well as their discussion. Because the variables are different, they may be integrated of different orders therefore differencing is mandatory to make the variables stationary. All the explanatory variables are expected to have an important either positive or negative impact on the variation of the explained variable.

4.1 Results

The summary of all the main variables under study is presented in descriptive statistics as shown in table 1 below.

Table 1: Descriptive Statistics and correlation matrix

Variables	Mean	Std. dev	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)
(1) Real GDP	82.931	31.184	52.569	158.131	1.00					
(2) Tax gap	5.484	174.661	2.167	153.195	-0.22	1.00				
(3) Inflation	11.740	9.067	1.559	45.987	-0.33	0.08	1.00			
(4) Interest rates	18.952	6.538	12.532	36.241	-0.40	-0.01	0.32	1.00		
(5) Capital formation	9.573	0.461	8.471	10.994	0.99	-0.29	-0.31	0.38	1.00	
(6) Unemployment rate	82.931	31.184	52.569	158.131	0.09	0.02	-0.29	0.23	0.02	1.00

Table 1 shows summary of descriptive statistic and correlation matrix for the variables used in the study. The mean value for tax gap is 5.484 which is very low implying that tax gap affects the Kenyan real GDP at a very low rate. Additionally, inflation rates and interest rates have low average values meaning their effect on GDP is equally low. However, capital formation has a higher mean value thus higher effects on the explanatory variable.

From the correlation matrix, it is clear that the is an inverse relationship between real GDP and tax-gap, inflation rates, and interest rates but a positive association between real GDP and capital formation as well as unemployment levels. While real GDP, interest rates and capital formation are normally distributed as their kurtosis values are close to 3, tax gap and inflation are not normally distributed. In addition, real GD, inflation, interest rates are positively skewed while tax gap is negatively skewed.

Before establishing the relationship between economic performance and tax-gap, two pretest were done which include the unit root test and lag length selectin criteria to ensure consistency of the variables. From the Varsoc run in Stata, all the information criterion had that the number of lags to include were one. The next test was the unit root test by employing Augmented Dickey Fuller test. The study showed that real GDP was integrated of order two therefore had to be differenced twice to make it stationary. Interest rates, inflation, unemployment and capital formation are integrated of order one therefore were differenced once to make them stationary. The tax gap variable is stationary.

4.2 Empirical Results

Among the tests done in this study include unit root test using the Dickey Fuller test. The outcome was that real GDP inflation rate, interest rates, capital formation and unemployment

levels were integrated of order one but tax gap was integrated of order two. Therefore, all the variables were made stationary before regression. Autocorrelation was the next test through the use of Durbin Watson statistic and the result was that there was no serial correlation of the disturbance term across time period.After making the variables stationary, real GDP variable was regressed on tax gap, inflation rate, interest rates, gross capital formation and unemployment levels. From the estimations, tax gap, interest rates, capital formation and unemployment levels were statistically significant. This is evident because their p-values were less than 0.05 at 5% significant levels.

Table 2: Linear regression Coefficients

Real GDP	Coef.	St.Err.	t-value	p-value	[95% Conf]	Interval
Tax-gap	-0.010*	0.004	0.720	0.011	0.002	0.017
Inflation	-0.041	0.075	0.553	0.586	-0.112	0.194
Interest rate	-0.263	0.106	2.481	0.020	-0.481	0.046
Capital formation	0.063**	0.001	5.763	0.000	0.060	0.066
Unemployment	5.197***	1.406	0.707	0.001	2.317	8.077
Constant	11.017	13.226	0.836	0.412	-16.076	38.109
Mean dependent var	82.929	SD dependent var	31.184			
R-squared	0.990	Number of obs	34.000			
F-test	573.031	Prob> F	0.000			
Akaike crit. (AIC)	183.697	Bayesian crit. (BIC)	192.855			

*** p<0.01.

** p<0.05.

* p<0.1.

The empirical model equation is estimated through the use of linear regression model and the outcomes of the estimation summarized in table 2 above.

The coefficient of tax gap, interest rates and inflation are negative and statistically significant coefficients. This indicates that a rise in the variables leads to a decrease in GDP as per (Raczkowski, 2018) study and is consistent with the prior findings of (Magiya, 2016). Capital formation has a significant positive coefficients implying an increase in the stock increases GDP thus supporting the findings that there is a bidirectional positive relationship between the two variables in sub-Saharan Africa countries.

CHAPTER FIVE: CONCLUSION AND POLICY IMPLEMENTATION

5.1 Introduction

Following the objectives of this project, this chapter provides answers to the research questions. The conclusions and answers obtained upon regressing the relevant variables and this chapter aims at discussing the results. The major aim of this research was to show the relationship between tax-gap and economic performance represented by real GDP. Therefore, this chapter presents the findings arrived at from data analysis in chapter four. It entails summary of findings, conclusion, policy implementation and areas that need further research.

5.2 Summary of Findings

Tax-gap being the main explanatory variable has a negative coefficient meaning that there is inverse relationship between the two variables. This indicates that if tax-gap if encountered well so that there is no gap, then there will be increase in real GDP. The negative relationship between tax-gap and real GDP affirms the findings of (Al-shawawreh & Al-smirat, 2016)as in the definition and measurement of variables. Interest rates coefficient have the largest negative effect on the variation in the real GDP.

The probability Ratio on the model is 0.000 implying that the model as a whole is statistically significant that is the model is of good fit and that the results can be relied upon confidently.

5.3 Conclusion

This study sought to explore the relationship between real GDP and tax gap and come up with policy recommendations. To begin with, the study employed a classical linear regression based on OLS estimation method to know the relationship between tax-gap and real GDP in

Kenya. The results from Stata analysis revealed an inverse relationship between the two variables. There was also a negative relationship between real GDP and interest rates as well as inflation rates. However, there was a positive significant relationship between the dependent variable and capital formation as well as unemployment levels.

Therefore, the results support my hypothesis that tax gap and economic performance are related. It implies that the government should put more efforts as far as the tax revenue is concerned so as to reduce the degree of tax noncompliance acts so as to increase the level of revenues collection. By lowering the tax gap levelswill in turn increase the real GDP of Kenya thus increase economic performance levels.

All the variables apart from inflation rate are statistically significant at 5% significant level thus the results can be relied upon. The results have both an economical importance as economist can use them to predict their future impact on real GDP. KRA should aim at countering noncompliance acts so as to increase the amount of revenue collection.Interest rates have a negative significant impact on economic performance therefore the Government should aim at reducing this rates so as to increase real GDP of Kenya.

Capital formation has a positive and significant effect on Economic performance. The government gains as it should aim at increasing all ways that lead to capital formation so as to increase real GDP. From the Granger Causality test, it is clear that all the variables granger cause real GDP. This is evident since the p-value which is 0.000 is less than 0.05 at 5% significant level then the null hypothesis of non-causality is rejected.

5.4 Policy Recommendations

From the study findings and discussed above, the following policy recommendations should be adhered to by the government of Kenya to reduce tax-gap levels so as to boost economic growth by assuring a strong fiscal policy.

To begin with, the Government should adopt strong fiscal policy measures that put more efforts in increasing tax base to widen tax levels but not increasing tax burden. This is attainable by reducing the consumption of goods that exert negative externalities. Appropriate tax system such as progressive tax should be enhanced by tax authorities so as to reduce the levels of non-compliance acts. Furthermore, more enforcement should put as far as KRA digital touch is concerned. Through this, there will be maximization of tax revenue collection hence increase in government expenditure leading to economic development in Kenya.

Next the Government should use relevant strategies that can minimize the negative relationship between real GDP and tax-gap so as to spur economic performance. Tax reforms that exist such as filling of returns should be monitored accordingly so as to increase tax collection levels. There is need for coming up with statistical way of analyzing tax reforms so as to manage their impact as far as tax collection process is concerned to achieve high economic performance levels.

Finally, the findings imply that if the government can change the long-run economic performance achievement levels by generating revenue from income, VAT, and sales tax without necessarily increasing tax rates. This is attainable through improving tax systems, employing tax systems appropriately and eliminating all forms of fraud and non-compliance acts.

5.5 Areas for Further Research

      Further research is key to explore the impact of present economic growth on future revenue and the effect of taxation on welfare. There is also need to study structural changes that impact the relationship between real GDP and tax-gap through the use of structural regression models**.** It is as a result of existence of various structural changes that impact the association between these variables. Another area that requires further study is the use of time analysis to predict future trends as far as tax revenue patterns are concerned.

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