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Effects of Human Development Capital on Tax Revenue Performance in Kenya

Brian W. Singoro
Kibabii University, Bungoma, Kenya

Abstract

Kenya Revenue Authority (KRA) collects more than 95% of all government revenue. Through taxation, government is able to raise revenue that is sufficient for public spending without too much borrowing. Tax is a compulsory payment imposed by the government on the incomes and profits of individuals and corporate bodies. Taxation is the main source of central government revenue. The amount of tax revenue realized or expected by any state is determined and influenced by various economic factors. The factors range from micro to macro-economic. In Kenya, tax revenues have, for quite some time, remained low relative to the effort and tax policies in place. The Kenya government has always been in search for the appropriate policy strategy to enhance tax revenues and boost its revenue profile. This paper therefore attempted to examine the effects of selected relevant macroeconomic policy variables that can serve as foundation variables for achieving such policy objective. The main purpose of this study is to examine the effect of Human Development Index (HDI) on tax revenue performance in Kenya. The approach for this study used annual time series secondary data for the period 2003 to 2018 to estimate a linear model of tax revenue performance and the selected macro-economic factor. The data was sourced from the Central Bank of Kenya, Kenya National Bureau Statistics (KNBS), Ministry of Finance data on National Budgets and other Government records. The study used correlation and regression analysis research design. The findings established that HDI had a positive relationship with tax revenue collected. The R^2 value which is used to show to what percent do the explanatory variables explain the dependent variable was found to be 0.7371 while the p values for all variables were found to be significant at 5% level of confidence. The findings will inform the government on what areas to invest its resources in order to boost and improve tax revenue performance.

Key words: Human development Capital, Tax Revenue

INTRODUCTION

Tax performance

Raising revenue is the most basic task of the state. For any state to perform its function well it needs to raise money e.g. provision of security to its citizens, provide justice or administer a bureaucracy and run other development agendas. Through its key role as the tie that binds the ruler and the ruled, taxation supports representation, accountability, and state capacity. Tax is a compulsory contribution to the government, paid by individuals and corporate entities, which does not bear any relationship to the benefit received (Hyman, 1987). Taxation has been a topic of discussion for decades in the global arena as countries strive to maximize tax revenue collection in order to raise the revenue needed for economic development without eroding the tax base. Evidence from different countries globally shows that most countries rely on foreign direct investment (FDI) and taxation to boost tax revenue collection (Deloitte, 2013). The main challenge of national governments worldwide is to continually increase the welfare of its people through the implementation of appropriate economic policies and programs (Tripath, 2012)

Globally, Countries with a low tax yield or lax enforcement of tax laws have been facing tough times. Such international players as the Organization for Economic Co-operation and Development (OECD), the World Bank and the G20 have been calling for more determined action to combat tax evasion and avoidance. With the world fighting the global financial and economic crisis, there has been a growing pressure on tax havens to increase the transparency of their tax systems and put an end to unfair competitive practices. For instance, from the year 2003-2015 Malaysia, Colombia and Vietnam have been experiencing a decline in tax performance which was a result of Increase in non-tax revenue (Makis Ivanya, 2015). Countries with high tax performance predominate in Western Europe as well as in many formerly socialist states from Eastern Europe and the former Soviet Union. The highest income countries with tax ratios below the trend line) are the USA, Japan, Ireland and Switzerland (European Commission 2014). In contrast South and Southeast Asia., Bangladesh, Pakistan, Malaysia, Cambodia, Indonesia, Laos, Sri Lanka, India, Nepal and the Philippines are among the low performers. Similarly, Many Latin America and Caribbean countries find themselves below the trend line, with Guatemala, Venezuela, Paraguay, Panama, Dominican Republic and Colombia in the group of low tax performers. The only high tax performers in this region are Brazil and Guyana. (Peerson.2013)

Regionally, many of the African developing countries face difficulties in generating revenues for the public purposes. In Africa most of the government budgets have deficits which hinder the government's investments in both human and capital investments which are necessary for economic growth. Programs supported by international monetary fund in sub-Saharan African countries in recent years have incorporated measures to

raise tax revenues and restructure tax system in these countries. Countries with relative high tax revenues tend to have high tax index.

In Africa In the year 2012, taxes on goods and services accounted for the largest share with 5.2% of African GDP, International trade on taxes accounted for 5% of the GDP and taxes on profits and income accounted for 4.6% of the GDP (World Bank,2014). Some countries in sub Saharan Africa have made progress in improving their tax system in the recent times, for instance Benin has undertaken a comprehensive program of reform of both tax policy and administration resulting in improvement of the tax structure and increase in the tax share to GDP ratio. Similarly, countries such as Ghana, Burundi, Liberia, Morocco and Algeria have been ranked as the high tax performing countries in the recent study conducted in Africa by the World Bank, (World Bank, 2014). Whereas central African countries (for instance, Chad, Sudan, Central African Republic, Nigeria) are counted as low tax performers who have been related to higher death toll in armed conflicts and a larger amount of displaced persons (OECD, 2013).

In Kenya, taxation is the single largest source of government budgetary resources. Between 1995 and 2004, tax revenue constituted 80.4% of total government revenue (including grants). Relatively, the importance of non-tax revenue is also significant in sustaining the public budget although, its importance is much less than the role of taxation given that its share over the same period was 15.1%. Foreign grants play a minimal role as they have averaged only 4.5%. Given its central role, taxation has been applied to meet two objectives. First, taxation is used to raise sufficient revenue to fund public spending without recourse to excessive public sector borrowing (Glenday, 2002). Second, it is used to mobilize revenue in ways that are equitable and that minimize its disincentive effects on economic activities.

Over time, Kenya has moved from being a low tax burden country to a high tax burden country yet the country faces the obvious need for more tax revenues to maintain public services. Given the high tax burden, prospects to raise additional revenue seem bleak. In addition, Kenyans are yet to accept a tax paying “culture”. On one hand, those with political power and economic ability are few and do not want to pay tax. On the other hand, those without political power are many, have almost nothing to tax, and do also resist paying taxes. Since no one enjoys paying taxes, there is mistrust between those collecting taxes and taxpayers. This mistrust generates a game theoretic coexistence between tax agents and tax payers, with agents perceiving taxpayers as criminals unwilling to pay their taxes, and tax payers wary of government agencies" high-handedness in collection of taxes (KRA, 2004). This creates the need for the tax agents to improve their image by building trust and public confidence.

However, the tax system has continuously changed, in pursuit of the objectives of the Tax Modernization Program that came into force in 1986. The challenges that confront the tax authorities today are not much different from the pre-reform challenges. With Kenyan firms reporting that about 68.2% of profit is taken away in taxes, tax competitiveness is low and the country remains among the most tax unfriendly countries in the world. Tax evasion remains high, with a tax gap of about 35% and 33.1% in 2012 and 2013 respectively (KIPPRA, 2014). The tax code is still complex and cumbersome, characterized by uneven and unfair taxes, a narrow tax base with very high tax rates and rates dispersions with respect to trade, and low compliance (KIPPRA, 2004b).

Given the destabilizing effects of the deficits and the fact that the Government, through Sessional Paper No 1 of 1986 (GOK, 1986)), came up with measures to address the problem. The most notable fiscal policy proposals were the Tax Modernization Program (TMP) that was adopted in 1986 and the Budget Rationalization Program that followed in 1987 (Muriithi and Moyi, 2003). The former program was aimed at enlarging the government revenue base whereas the latter involved regulating expenditure through strict fiscal controls. Kenya has various types of tax as a means of collecting revenue and Kenya Revenue Authority keeps on making amendments in order to achieve their target each financial year.

Human **development** ***index (HDI)*** **on Tax Revenue Performance**

Human capital is defined as the knowledge, skills, competence and other attributes embodied in individuals or groups of individuals acquired during their life and used to produce goods, services or ideas in market circumstances (OECD, 2017). For statistical purposes, human capital can be measured in monetary terms as the total potential future earnings of the working age population. However, this only captures part of human capital and is a limited measure. Therefore, in this study we will adopt the Human Development Index since it is a summary measure of average achievement in key dimensions of human development; a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions.

The HDI was created to emphasize that people and their capabilities should be the ultimate for assessing the development of a country, not economic growth alone. The HDI can also be used to question national policy choices, asking how two countries with the same level of GNI per Capita can end up with different human development outcomes. (Organization for Economic Co-operation and Development ,2017)

In 2017, Norway had the highest ranking of 0.953 with a population of about 5.4million closely followed by Switzerland with a human development index of 0.944 and a population 8.4million. The countries with the lowest HDI were South Sudan, Central African Republic and Niger with HDIs of 0.388, 0.367 and 0.354 respectively. Europe and Central Asia regions had the highest HDI of 0.777 followed by Latin America and the Caribbean with a HDI of 0.758. Sub-Sahara region had the lowest with a HDI of 0.537 (UNDP, 2018). The global HDI value in 2017 was 0.728, up about 21.7 percent from 0.598 in 1990 the average annual HDI growth for different regions is as follows Arab sates 0.84, East Asia and the Pacific regions 1.30, Europe and the Central Asia regions 0.62, Latin America and the Caribbean regions 0.71, South Asia 1.39 and Sub-Saharan Africa 1.12. Worldwide, the average HDI value for women (0.705) is 5.9 percent lower than that for men (0.749). Much of the gap is due to women's lower income and educational attainment in many countries. The gender gap is widest in low human development countries, where the average HDI value is 13.8 percent lower for women than for men. Among developing regions, the gender gap is narrowest in Latin America and the Caribbean (2.3 percent) and widest in South Asia (16.3 percent) and the Arab States (14.5 percent) **(**OECD, 2017**).**
In East Africa, the relationship between income inequality and its effect on human capital development can be deduced to be a negative relation since the higher the income inequality the faster the rate at which the rich acquire more skills, access better health care services and better nutritional food. This interferes with the average human development index since the rich are few the HDI is recorded low.

Statement of problem

Revenue structures of most developing countries have not been as productive as desired, as depicted in the revenue levels attained. The growth in revenue in these countries has failed to measure up with government expenditures. Tax revenue shortfalls result in huge imbalances between the demand and supply of public budgetary resources. These countries have then had to reform their tax structures, with the general objectives of revenue adequacy, economic efficiency, equity and fairness, and simplicity. Drummond (2012) posits that mobilizing more revenues is a priority for most of sub Saharan African (SSA) countries. Countries have to finance their development agendas, and weak revenue mobilization is the root cause of fiscal imbalances in several countries.
The Kenya government has always been in search for the appropriate policy strategy to stimulate its tax revenues and boost the revenue profile. A significant number of research studies have been conducted on government revenue and economic variables and determinants. Okech and Mburu (2011) carried out an analysis on the responsiveness of tax revenue to changes in national income in Kenya between 1986 -2009 and concluded that the Kenya tax system is neither income elastic nor buoyant. Tax revenue targets have been increasing year after another as evidenced by the annual government budget. However, this has not been fully achieved as reflected by revenue shortfalls and fiscal imbalances. This study therefore sought to fill this research gap by answering one question: What is the relationship between Human Development Index (HDI) and tax revenue performance in Kenya.

Objective of the study

To determine the relationship between Human Development Index (HDI) and tax revenue performance in Kenya.

Research Hypothesis

$H0_1$: There is no statistically significant relationship between Human Development Investment and tax revenue performance in Kenya.

Scope of the Study

The study has covered a period of sixteen years, starting from 2003 to 2018, with the variables measured at a national level .The period covered was extensive and therefore more likely to give accurate results.

Justification of the study

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It is apparent that many studies have been done on tax performance in relation to macroeconomic variables like; GDP, exchange rate to name but a few. The studies have failed to look at how HDI influence tax performance in Kenya. This study aims to fill this knowledge gap.

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LITERATURE REVIEW

Theoretical literature

Several theories of taxation exist in public economics. Most governments collect revenues from various sources to provide public services or to finance transfer payments. Taxation is the most common source of revenues in developing economies. Some of the theories on taxation have been expounded below;

The benefit theory

The Benefit theory mentions that the corporate or individuals should be taxed in proportion to the benefits they earn from the Governments in public services and that taxes should be paid by those who receive the direct benefit of the Government programs and projects out of the taxes paid. It was designed in the seventeenth century by English philosophers Hobbes (1588-1679) and Locke (1632-1704), and Dutch jurist Grotius (1583-1645). This theory has been subjected to severe criticism on the following grounds: If the state maintains a certain connection between the benefits conferred and the benefits derived, it will be against the basic principle of the tax. A tax, as we know, is compulsory contribution made to the public authorities to meet the expenditures of the Government and the provisions of general benefit. There is no direct substitution in the case of a tax. Secondly, the majority of the expenditure earned by the state is for the general benefit of its citizens, therefore, it is not possible to estimate the benefit enjoyed by a particular individual every year (Saleemi, 2005). The implication of benefit theory is that there is a direct correlation between revenue and expenditure in budget. It also approximates market behavior in allocation procedures of the public sector.

The expediency theory of taxation

This theory asserts that every tax suggestion must go by the test of practicability. It must be the only consideration when the authorities are choosing a tax proposal. Economic and social objectives of the state should be treated as irrelevant. This proposition has a truth in it, since it is useless to have a tax which cannot be levied and collected efficiently. There are pressures from economic, social and political groups. Every group tries to promote and protect its own interests and authorities are often forced to reshape tax administration structure to accommodate these pressures. In addition, the administrative set up may not be efficient to collect the tax at a reasonable cost of collection. Taxation provides a powerful set of policy tools to the authorities and should be effectively used for remedying economic and social ills of the society such as income inequalities, regional disparities, unemployment, and cyclical fluctuations and so on. Theory on Taxation (TOT) should result from a balance of the forces (Bhatia, 2009).

The cost of service theory of taxation

The cost of service theory is based on the opinion that if the state charges the actual cost of a service from the people, it will satisfy the idea of justice or equity in taxation. The cost of service principle can no doubt be applied to some extent in those cases where the services are rendered out of prices and are a bit easy to determine. However, most of the expenditure incurred by the state cannot be fixed for each individual because it cannot be exactly determined. For example, it is not easy to measure the cost of service of the police, armed forces, judiciary, etc., to different individuals. This theory implies that TOT should be charged basing on the cost of the services to be rendered to the payers. This may be difficult to achieve (Kaplow, 2010). In many countries including Kenya the cost of some services rendered is not easy to determine, thus most of the expenditures incurred by the state cannot be exactly determined. For example, how can state measure the cost of service of police, armed forces and judiciary to individuals? Therefore, the implication of this theory is that there is peace, security and order in the country.

Empirical review

Nwakanma and Nnamdi (2013) examined the relationship between taxes and human development index in Nigeria for the period 1970-2010. Based on the Ordinary Least Squares methodology, the study revealed that Petroleum Profit Tax, Company Income Tax and Excise Tax respectively exhibit a positive relationship with the level of HDI. Also, a negative relationship exists between corporate tax and Human Development Index. The Johansen maximum likelihood procedure shows that a long-run relationship exists among the variables. The study recommended that there is need to develop a federal fiscal system that could guarantee the full potential of taxation in achieving HDI in Nigeria. Few studies have been conducted in Kenya investigating the impact of HDI on tax revenue. This study intents to contribute to the existing literatures by find out how taxes is influenced by the human development index in Kenya.

Edeme (2014) analyzed the effects of sectoral public spending as fiscal policy on human development in Nigeria using data from 20 states for the period1999-2012. Data on each state were generated from various issues of the Accountant-Generals' Reports, Central Bank of Nigeria Annual Report and Statement of Accounts and United Nations Development Program Reports. For robustness of the analysis, total, recurrent and capital public spending on education, health, agriculture, rural development, energy, housing, environmental protection and portable water resources are employed as predictors of human development. The result depicted that there is a positive functional relationship between education, health, agriculture, rural development, energy, housing, environmental protection and portable water resources expenditure and human development which is an indication that expenditure on these sectors fosters human development and concluded that the relative effect of capital expenditure in improving human development was greater than that of recurrent expenditure. From the above findings, study analyzes the effects of public spending on improving human development in Nigeria and not the influence of human development index on tax performance. The current study aims to fill this niche by investigating the impact of human development index on tax revenue performance in Kenya within the period under the study.

Dan (2016) observed that several countries of the world, developed and developing countries including Nigeria engage in deficit budgeting as a fiscal policy tool and empirically examines the causal relationship between budget deficits and human development in Nigeria for the period 1980 to 2013. This study utilized endogenous lag models using the Keynesian model based on vector error correction (VEC). The study found a unidirectional long-run causality existing between budget deficits and human development in Nigeria, with causality running from budget deficits to Human Development Index, aligning with the Keynesian views. The study recommends amongst others that budget planning as an instrument for fiscal policy enhances human development.

Abraham and Ahmed (2011) argued that sustainable economic growth leads to economic development and they employed error correction methodology to examine the relationship between economic growth and human development in Nigeria. Gross Domestic Product (GDP) was used as a proxy for economic growth while the Human Development Index (HDI) was used as a proxy for human development. Secondary data were collected from 1975 to 2008 from the Central Bank Statistical Bulletin, UNDP yearly Report and World Fact Book and concluded that policies aimed at accelerating growth would have a negative impact on human development in the short run but in the long run positive. This implies that economic growth leads to human development and that macroeconomic policies aimed at achieving sustainable economic growth should be maintained.

Kizilkaya, Koçak and Sofuoğlu (2015) examined the impact of taxes, government expenditures, income and infrastructure (electricity consumption) on the human development from 1998-2007 for 14 OECD countries. Panel unit root, panel co-integration, panel FMOLS, panel DOLS and panel vector error correction based causality methods was used in the study. The study revealed that taxes have a negative impact on human development while government expenditures as fiscal policy variables have positive and significant impact on human development and concluded that government should give importance to public policy, especially to education and to health care section. The above research, however, used a panel data from various countries and the research recommendations were general and not tailored to address specific issues within the individual countries. This study intends to investigate how tax revenue performance is affected by HDI in Kenya.

RESEARCH METHODOLOGY

Research Design

The study builds on existing research studies and methodologies using correlation research design. Several pre-diagnostic tests were performed which included; summary descriptive, correlation test using pairwise correlation, unit root test using Augmented Dickey Fuller, determination of optimum lags and finally co-integration test using Johansen Co-integration. Vector Auto-regression (VAR) was used in the regression analysis of the time series data captured over the period under study since co-integration was not present among the variables. Post diagnostic tests of the model under the research study were also performed which included; test for multicollinearity, skewness kurtosis test for data normality, test for model stability and serial correlation among the variables and finally test for heteroscedasticity in the error term. The main advantage of using this design is to enable the researcher to identity the factors and measure their performance.

Study Period

This study covered the actual Kenya's tax revenue performance and quarterly, Human Capital Development, Infrastructure Development Index, Exchange rates for a period of 15years from 2003 to 2018. Being a case study of Kenya, there was no sampling hence the study focused on the population not a sample size.

Data Collection

The main source of data was from secondary sources .Secondary data were sourced from KRA, World Bank, Kenya National Bureau of statistics and other websites. Data on tax revenues per annum for the period under study was obtained from the annual records of revenue maintained by the Kenya Revenue Authority. Data was collected from the authority because it is the agency responsible for collecting taxes and hence it maintains records of tax collected. Data on average annual rates of inflation was obtained from the records maintained by

the Kenya Bureau of Statistics, which is a semi-autonomous government agency that is responsible for the collection, compilation and dissemination of public data for statistical use, hence the data is reliable.

Model specification

To investigate the dynamic relationship among tax revenue variable and the selected four macroeconomic variables Human Capital Development (HDI), Infrastructure Development Index (INF), Exchange rate (ER). This study specified a model which expresses tax revenue as a function of these macroeconomic variables. The model is specified

TAX REVENUE = f (HDI, INF, ER) …… (1)

The Analytical model

To establish if there is a relationship between macro-economic factors (HDI, INF, ER) and tax revenue performance in Kenya, the researcher will conduct a multiple regression analysis using the following model;

$Y= \alpha + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t+} \varepsilon t$

Where; Y = tax revenue performance which will be measured using tax revenue figures from the year 2003-2018 available on KRA website.

α = Constants.

$\beta_1 \ldots \beta_3$ = the slope which represents the degree with which tax revenue performance changes as the independent variable change by one unit variable.

X_1 = Human Development Index (independent variable). Annual figures for the year 2003-2018 will be retrieved from KNBS website.

X_2 = Infrastructure Development Index (independent variable) will be measured using……. The annual figures for the year 2003-2018 are available on KNBS website.

X_3= Exchange Rate (independent variable). Annual figures from the year 2003-2018 will be retrieved from World Bank website.

ε = error term

t = time series

Data Analysis

Data was first tested using the pre diagnostic tests for consistency in measurement and outliers were removed after confirmation. The data was also refined run using STATA 13 software for analysis. The software is preferred for time series analysis as it can be used to conduct various tests.

Pre- Diagnostic Test

Linear relationships on the explanatory variables were tested using the pairwise correlation matrix. Unit root tests was carried out to appraise the effect of shock and to avoid spurious regression related to non-stationary variables by using Augmented Dickey Fuller test (ADF) statistics. The null hypothesis is H0: $\delta = 0$ the alternative hypothesis is H1: < 0. If the computed ADF statistics is greater than the ADF critical value at a given significance level, do not reject the null hypothesis because unit root exists. If the computed ADF statistics is less than the ADF critical value, reject the null hypothesis because unit root does not exist thus the series is stationary. If the series are not stationary at given significance level, then all the series are differenced once to make them stationary (Gujarati, 2009). The Stationarity of Human development index was achieved at levels but for the others it was achieved at second difference.

Optimum lag length was determined by checking the majority of the statistics (FPE, AIC, HQIC, SBIC) which suggested only four lag lengths. Co-integration tests deal with the relationship of many variables whereby each has a unit root. The regression of two non-stationary time series variables would lead to spurious results. One way to guard against spurious regression is to find out if the time series are co-integrated.

Co-integration test was performed in the chapter using the Johansen Co-integration test and it was fond out that there were no co-integrating equations by checking at the trace statistic against the critical value at 5% level of confidence. This study used ordinary Vector Auto-regression for determining long-term and short-term causality. Regression analysis was later performed in STATA version 13. The following necessary tests were conducted to ensure data accuracy and reliability.

Post Diagnostic test

Normality test was used to determine if a data set was well-modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed. Skewness Kurtosis was used to test for normality and it was established that the probability chi2 value of skewness was above 0.05 for all variables which is an indication that the amount and direction of distribution of variables around their means were asymptotically normally distributed. The Kurtosis probability chi2 value for all variables was above 0.05 hence the variables around their means were asymptotically distributed. Autocorrelation occurs in time series data when the error is occurring at one period crosses over into another period. It may also occur when the error term relating to any observation is influenced by the error term relating to any other observation. The error term in the linear regression requires that successive values of the error term be sequentially independent (Mukras, 1993). The OLS estimators remain unbiased, consistent and asymptotically normally distributed in the presence of autocorrelation, but the estimators become inefficient. This study used Breusch-Godfrey LM test to

check for the presence of autocorrelation. The test involved testing of the null hypothesis of absence of autocorrelation against the alternative hypothesis of the presence of autocorrelation. That is;

H0: ρ >= 0.05

H1: ρ < 0.05

The null hypothesis states that the error term is free from autocorrelation while the alternative hypothesis shows the presence of autocorrelation in the error term (Gujarati, 2009). The results in the next chapter showed that a statistic of 0.9910 was obtained which shows absence of serial correlation and hence no need for correction of the serial correlation.

Multi-collinearity arises from the presence of interdependence or lack of independence among independent variables in a multivariate regression model. Multicollinearity poses difficulties only when inter-correlation among the independent variables is high. The degree of multicollinearity is what matters since multicollinearity is common among variables. To test for the presence of multicollinearity, this study used Variance Inflation Factor (VIF). For VIF values greater than 10, multicollinearity is deemed to be present (Nachtscheim, 2004). From the study findings in the next chapter it is evident that there was Multicollinearity among all variables (HDI, INF, ER). This is because all the variables had a VIF of greater than 10. Heteroscedasticity takes place when the variance of the error term keeps changing for all the values of independent variables. The unbiased character of the OLS estimator is not affected by the presence of heteroscedasticity though it renders it inefficient. This is because in small samples OLS estimator we will not have the minimum variance among the class of unbiased estimators and in large samples it will be asymptotically inefficient. This study used the Breusch-Pagan test to check for the presence of heteroscedasticity (Gujarati, 2009).

RESULTS AND DISCUSSION

Table 1 Descriptive Statistics

Variables	Observations	mean	Std. Dev.	Min	Max	skewedness	kurtosis
Tax Revenue	16	329300.1	200551.2	91661	708427	.5456068	1.964897
HDI	16	5.405	.4016798	4.68	5.9	-.3838459	1.889071
INF	16	15.24437	6.764746	7.85	25.3	.400115	1.501697
ER	16	84.225	11.80675	67.3	103.4	.3452256	1.889897

Source: Author's Computation based on STATA 2019

From the above table, it is clear that there is high spread of data among variables. From its nature, it was so anticipated since time series data especially those, which include aggregates follows a random or stochastic process. The tax revenue performance had an average value of 329300.1, least value of 91661, maximum value of 708427, standard deviation of 200551.2, and skewness value of .5456068 and Kurtosis value of 1.964897. Human development Index had an average value of 5.405, least value of 4.68, the maximum value of 5.9, the standard deviation of .4016798, skewness value of -.3838459 and Kurtosis value of 1.889071. From table 4.2, data for tax revenue was widely spread than other variables 200551.2 million USD. This is mainly because of the fluctuations in the tax revenue collection over the period of study. A lot of factors played in contributing to the low revenue collection year's back such as low foreign direct invest high rates of unemployment, political instability. It also had a large mean which is an indication of the fact that economy revolve around tax collection. Analysis of skewness showed that tax revenue performance, is asymmetrical to the right around its mean, while human development index is negatively skewed. Consequently, human development index has the highest peaked regressor compared to other variables development

Regression analysis

Table 2 Regression Analysis

Dltxr	Coefficients	Std. Err.	Z	P>|z|	[95% Conf. Interval]
lhdi	.4507323	.0588646	7.66	0.000	.3224775 .5789872
linf	.3089879	.0133781	2.91	0.000	.0098397 .0681362
Ller	-.2038345	.0939479	-2.17	0.577	-.150861 .2585289
Cons	1.583694	.1693715	9.35	0.000	1.214665 1.952723
Number of obs = 16 F(4, 37) =631.72		Prob > F = 0.0000 R-squared = 0.9937 Adj R- squared= 0.9921			Root MSE = 0.00466

Source: Author's Computation based on STATA 2019

From table 2, the results reveal that the model was good in terms of goodness of fit and overall significance with a (R^2) of 0.9937 and a probability value of 0.0000. These means that 99.37% of the variation in tax revenue is explained by the explanatory variables in the model while the other proportion 0.63% is explained by other factors not considered by this study. Probability value of (0.0000) implies that the variables in the model are jointly significant in explaining tax revenue at 5% level of significance.

Interpretation of results

The coefficient is positive hence the effect of human development index on tax revenue performance is statistically significant and exhibited positive sign as was expected. An increase in human development index by one unit would increase tax revenue performance by .4507323 units. This observation can be explained by the fact that, as more resources are geared towards equipping people with requisite skills and knowledge that help to become human capital, then in result there will be more productivity in the economy which will translate to higher tax revenue for the government in terms of corporate tax .As growth and development of the economy both in the private and public sector increase in Kenya, more tax is derived by taxing the corporate yielding more revenues for the government in form of Corporate Tax.

SUMMARY, CONCLUSION AND POLICY RECOMMENDATION

Summary of findings

The empirical results show that units increase in Human Development Index (HDI) would result to an increase in tax revenue performance. This observation can be explained by the fact that, as more investors are attracted into the country due to favorable business environment, low domestic interest rates and political stability, more industries are set up that contribute to increase in employment opportunities for the skilled, semi-skilled and unskilled labour force. This contributes to increase in both income and corporate tax.

Conclusions

From the results and findings, there is a link between Human Development Index (HDI) and tax revenue performance. These findings indicate that Human Development Index (HDI) is statistically significant with a positive relationship with tax revenue performance. Therefore the null hypothesis that states that both HDI have no statistical significance to tax revenue performance was rejected .In conclusion for the Kenya government to achieve both the big 4 agendas and the vision 2030 major funding from revenue collection is essential so as to reduce borrowing of development funds that results to increase in country's debt burden. However, in order to increase tax revenue performance, the human development capacity should be increased in order to increase the labour force output. Similarly, better policies have to be put in place by the Kenya tax revenue commission in order to achieve maximum revenue collection. Herein are the recommended policies and suggestions from the study findings.

Recommendations

Based on the study findings, it has been depicted that Kenya's tax revenue performance is positively affected by Human Development Index; therefore, the government should create more job opportunities to the unskilled and semiskilled labour force by supporting the growth of the informal sector such as Jua Kali sector. Similarly, favourable environment to foreign direct investors should be created as it will help to multiply opportunities for the skilled labour force.

The government should further direct more funds to the educational programs in order to make education affordable, thus reducing the illiteracy levels .Similarly, technical institutions should be expanded to cater for more training of the informal labour workforce. This will improve efficiency of the labour force and, in the long run, increase the tax revenue.

Limitation of the study and suggestions for further research

A major limitation of the study is the problem of data reliability. Different data sources give different data for the same variable.

The study recommends other studies to build on the study findings by incorporating the omitted variables that affect tax revenue performance such as exchange rates, trade liberalization and other variables apart from those considered in the model specification.

The study has used time series analysis and Vector Error Correction Method of estimation. A similar study can be done using panel data analysis and compare data from different countries as opposed to one country as is the case in this study.

REFERENCES

Musgrave, R. A., & Musgrave, P. B. (2004). Public Finance in Theory and Practice. (4th ed). McGraw Hill Higher Education, New York.

Gupta, A.S. (2007). Determinants of tax revenue in developing countries, IMF working paper (wp/07/184).

Musgrave, R. A., & Musgrave, P. B. (2004). Public Finance in Theory and Practice. (4th ed). McGraw Hill Higher Education, New York.

Abraham, T. W and Ahmed, U. (2011). Economic growth and human development index in Nigeria: An error correction model approach. International Journal of Administration and Development Studies, University of Maiduguri, Nigeria. article March 2011. Available at file:///C:/Users/Mr.%20Lawrence/Downloads/AbrahamandUmarIJADSUNIMAID%20(1).pdf.

Kizilkaya, Y, Koçak, A. and Sofuoğlu, A. (2015). The role of fiscal policies on human development : An empirical approach. Available at file:///C:/Users/Mr.%20Lawrence/Downloads/TheRoleOfFiscalPoliciesOnHumanDevelopment%20(5).pdf 29/7/2018

Hyman, D. N. (1987). Public Finance: A contemporary Application of Theory of Policy (2nd ed.). Chicago: The Dryden Press.

Fernandez, E., & Mauro, P 2000, The role of human capital in economic growth: The case of Spain, IMF Working Paper 2000

Fitzsimons, P. (1999). Human capital theory and education. The Encyclopedia of Education. London: Macmillan.

De la Fuente, A. & Ciccone, A. (2002). Le capital humain dans une e ´conomie mondiale sur la

De la Fuente, A. & Ciccone, A. (2002). Le capital humain dans une e ´conomie mondiale sur la connaissance. Rapport pour la Commission Europe ´enne, Brussels.

Woodhall, M. (2001). Human capital: educational aspects, International Encyclopedia of the Social & Behavioral Sciences.

Rastogi, P. N. (2002). Knowledge Management and Intellectual Capital as a Paradigm of Value Creation. Human Systems Management, 21(4). 229-240.

World Bank. 2017. World Development Indicators [database]. Washington, DC.