INTEREST RATE AND PERFORMANCE OF VALUE ADDED TAX IN KENYA

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ABSTRACT

In order to provide basic necessities for its citizens, governments must rely on revenue from many streams, including taxes such, Personal income tax, value-added tax corporate taxes and other levies. In Kenya, the skewness of the tax structure lies strongly favouring value added tax and income Taxes as the two main tax revenue sources. Despite numerous tax reforms undertaken by the government, Kenya has had recurring national budget deficits similar to majority of Sub-Saharan African countries. In the year 2005 the budget deficit was at 0.90% and the trend has been upward to a deficit of 8.06% in the year 2020. Several variables, including interest rates, determine how much VAT is collected. In Kenya, interest rates have been unpredictable which forced the government to cap the interest rates in September 2016 at 14% aiming at protecting borrowers from excessive cost of credit. The capping was however repealed in November 2019 allowing commercial bank to be in control of their loan pricing based on the borrower's risk profile. The purpose of this study was to determine how interest rates affect VAT's performance in Kenya. The Value Added Tax (VAT) receipts collected by the Kenya Revenue Authority from 1990 to 2020 are the primary topic of this descriptive research. Institutional archives provided secondary time series data, including those of the Central Bank of Kenya, the Kenya National Bureau of Statistics, and the Kenya Revenue Authority. Secondary data was collected in the course of the study by using data collection sheets. Descriptive and regression analysis, the study found that interest rate had negative effect on value-added tax collected in Kenya. The study thus recommends that the Government should regulate the rise in the level of interest rate in the country in order not provoke price instability in the country.

Key Words: Interest rate, value added tax, performance.

INTRODUCTION

Tax is compulsory deduction by a government on business profits and workers' income towards state revenue. It can also be viewed as a charge over and above the cost of economic transactions which forms the main source of revenue to any Government due to its stability and predictability in financing development objective (Akinboade, 2015). In the UN conference Doha in 2008, taxation was recognized as the key to domestic resource mobilization (Moyo, 2021). The International Monetary Fund (IMF, 2014), also notes that tax is a major revenue source for most Governments. According to Tiwari and Mutascu (2011), taxation is mandatory and is paid to the Government on demand.

Muhammad et al. (2011) notes that in majority of developing and developed countries, tax is the greatest contributor to Government revenues which are mainly utilized to meet the cost of expenditure by Government including providing social services, infrastructure development, education and health services. In addition, most governments in developing nations routinely run

budget deficits because tax collection is insufficient to cover soaring government spending. This means the Government has to finance the budget deficit with a debt or simply reduce its expenditure. Oeta (2017) states that sources of Government tax revenue can be both custom levies and domestic taxes. Value added tax (VAT) and Income tax are considered domestic taxes while customs levies consist of import duty among others. Value Added Tax is charged on vatable supplies at any point along the value chain.

However, VAT collections are susceptible to a number of potential influencers such as macro factors, which affect the economy as a whole, and micro factor, which are specific to tax authorities (Olufemi & Olatunbosun, 2013). Of keen interest is that a tax system is optimal when it brings to tax as many taxable persons as possible. However, it should also be noted that revenue administration should be characterized by efficiency. In the Middle East, for example, Ajaz and Ahmed (2010) revealed that among the factors that affected VAT performance were corruption, level of economic growth, tax reforms, sector reforms and attitude towards the tax system. Muhammad et al. (2011) noted that fiscal policies had an effect on VAT revenue collection in Pakistan.

Sadekin et al. (2020) noted that existence of a positive bond linking Government budget deficits and collection of VAT. This is because, Government deficits leads to borrowings which may trigger expansion of business activities in a country. Imran & Farzana (2010) however noted that an increase in external debts reduced the amount of tax revenue. This is because where much of the Government expenditure was spent in repaying external loans, few Government investments were done and this slowed the rate of economic development in the country. It has been shown that low economic activities lead to low amounts of tax collection since taxes like VAT are directly related to economic activities (Muhammad, et al., 2011). Imran and Farzana (2010) also noted that high deficits in the national budget of Pakistan could be attributed to the existence of a narrow base of taxation. This implies that Government should widen the tax bases in order to enhance collection of VAT.

Value Added Tax, as the name suggests, is charged as a tax upon consumption of taxable supplies every time there is value addition at each point along the supply chain. It is perceived to an indirect tax charged upon use of goods or services that are categorised as taxable supplies. In Kenya Value Added Tax was introduced in 1990 with the main aim of replacing sales tax, and the input credit system was adopted at its introduction (Karingi et al., 2005). The Government saw the introduction as a way of increasing revenue by expanding the tax base, which was originally only confined to sale of goods at two levels, including importation and manufacturing levels as envisioned by the former sales tax system. Value Added Tax is charged when there is consumption of taxable supplies whether goods or service and a supply is made in Kenya or imported into Kenya.

The introduction of VAT was part of an overall tax reform package which Kenya embarked on in 1986 through the Tax Modernization Programme (TMP) (Muriithi & Moyi, 2003). Tax Modernization Programme would make the Kenyan fiscal system more progressive, efficient, equitable and more modern. VAT is seen as a better way of collecting taxes both efficiently and effectively as a reform to the sales tax and the indirect tax system. The VAT system has a broader

base and encompasses value added to taxable supplies both product or service supplied by an enterprise at every stage of production all the way to the final distribution. This increases efficiency of the collection system and in turn reduces tax evasion. VAT is one of the major players in revenue collection and mobilization in Kenya. Payment of VAT in Kenya is the responsibility of the seller on certain sales and to some extent it also rests with the buyer as noted by Eissa et al. (2010).

Gitaru (2017) defines revenue collection as the process by which organizations receive funds. In the respect of the Governments, revenue collection is thus the process through which public finance is improved. Tax is noted as the main revenue source for Government. Oeta (2017) states that sources of Government tax revenue can be both inland and customs. Domestic taxes include income taxes, value added tax while custom levies consist of import duty among others. Oeta (2017) further views that other sources of Government revenue such as penalties, grants and fees which are non-tax in nature also have a major and significant role in the funding the huge public budgets. According to Njenga (2018), tax revenue is the main contributor revenue to the Kenyan republic contributing to over 95% of the ordinary revenue for the Government. Malkina and Balakin (2015) notes that, in order for the Government to aid the consumption of public products taxation is mainly the best and practically known way for amassing the required resources.

Profit earned from investing in a borrowed currency is measured in terms of interest. Here, interest rates serve as a source of revenue for the lender or creditor while costing the debtor. According to Chaudhry and Munir (2010), interest rates affect the borrowing and investment activities in an economy. This means that where the interest rates are escalating the rate of investment decreases which may result in low business activities occasioning less tax collection. Various interest rates exist including the lending rate, which is the charge by the commercial banks and other creditors for money lent out. Deposit interest rate is paid out by the financial institutions mainly commercial banks to deposit owners for deposit held by the institution. It represents and income to the deposit owner and expense to the deposit holding institutions. Overdraft interest is the charge to holders of bank account for overdrawing their accounts. The rate is normally above the average lending rate as in includes one-time insufficient fund fee.

One of the frequent frustrations to policy makers in developing countries has been the unpredictable and high lending interest rates by commercial banks and other lending institutions. According to Siriba (2019), high rates are viewed as an obstacle to economic growth by curtailing investment and promoting financial exclusion. So as to put in check the interest rates rampart oscillations, proposals to control interest rates have emerged from time to time. In September 2016, the Kenyan government passed a law capping the interest rates which was intended at protecting borrowers from excessive credit rate. The law imposed a celling putting the maximum lending rate above the Central Bank Rate (CBR) at 4%. The same law also imposed a floor on the deposit rate given by commercial banks at 70% of the CBR reference rate. The capping was however done away with in the November 2019 which allowed commercial bank to be in control of their loan pricing based on the borrower's risk profile.

The revenue collected from taxes is put to use by the government to provide citizens with basic necessities. The second major contributor of government revenue in Kenya is Value Added Tax

coming after Income tax. For many years Kenya, just like its counterparts in Sub – Saharan Africa has been operating a deficit budget. Despite the various tax collection enhancement strategies specifically focusing on the VAT, the country has on year to year been unable to meet its VAT collection target. Kenya has consistently recorded the negative variance in its VAT collection which has stood between 1% and 6% for the year 2014/15 to 2019/20 and the highest being 21% in the FY 201/13. Various studies have been carried out in Kenya on tax revenue collection. According to research by Aloo (2012), currency exchange rates had a significant and positive effect on value-added tax collection in Kenya.

Study by Asirigwa (2011) on the factors that determine collection of VAT revenue in Kenya revealed that inflation rates and foreign exchange rates had positive but non-significant effect on VAT collection. Based on his research into the factors that influence VAT receipts, Wawire (2011) concluded that GDP has a bearing on VAT tax receipts in Kenya. The study was general in nature focusing on macroeconomic effect of VAT. Majority of the studies failed to consider the influence of interest rates on VAT collection, ignoring the fact that VAT is a consumption tax and that interest's rate affect individual and firm's consumption by influencing the rate of investment and also savings. In essence, the purpose of this research was to examine how interest rates influence the success of value-added tax collections in Kenya.

Literature Review

The study adopted the ability to pay theory. Arthur Cecil Pigou is credited with developing this concept. The Ability-to-Pay theory holds that a Taxpayer's ability to make payments for taxes should be proportionate to the amount of tax levied on the said Taxpayer all other things held constant (Bardini, 2011). According to the theory an economic entity having high income should be taxed more while an entity with low income should pay less tax other things remaining constant. The theory also known as voluntary exchange theory states that taxes are based on Taxpayers' capacity to pay. Taxpayers view the tax paid as a sacrifice and this brings up the issue on how the sacrifice by each Taxpayer should be measured. The theory posits that those people who are rich and with more income should pay more taxes while those people who are poor should be pay less taxes. In other words, tax payment should not be a burden. Chigbu, et al. (2012) view that the ability to pay theory was progressed to cover the gaps that existed in the taxation theory of benefit and sacrifice. The principle of ability to pay is the most accepted and recognized principle of taxation, since it focuses on individual's ability and capacity to pay tax.

The importance of a just tax system is highlighted by this theory, making it central to the research. The theory views that lower income earners should pay less tax in order to enhance their compliance. From the theory it can be suggested that taxpayers paying VAT should make their payments unconditionally as the tax is based on their paying capacity as stated by Chigbu, Eze and Ebimobowei, (2012). However, it is critical to note that VAT is levied equally in disregard to the level of income of a particular Taxpayer. Nevertheless, VAT forms part of the overall price of a good or service and the Taxpayer has a decision to make as regards to the goods or service s/he chooses to consume. It is also essential to key that taxation is a compulsory levy where taxpayers may not enjoy a direct benefit which is commensurate to tax paid by them.

A project on the factors determining the collection of VAT in Kenya was conducted by Asirigwa (2011). The study set out to determine how various variables (including inflation rates, exchange rates, number of tax rates, and VAT standard rates) affected Kenya's ability to collect VAT. For this project, descriptive research was conducted, and a multiple regression model was built. Conceptually, the study scopes on data for a period of fifteen years. Dates ranging from 1995/96 to 2009/10 were used to compile the variables' sets of numbers. The information gathered was analysed using SPSS. The results showed that fluctuating exchange rates and inflation impacted VAT collections negatively. The interest rate was not taken into account, but the study did offer valuable information on other macroeconomic variables. Similarly, given that it was conducted nine years ago, there is now an urgent requirement for a comparative follow-up study.

Omolo (2012) conducted a study to analyse the factors that affect taxation in Kenya. The project was to find out the extent to which GDP, exchange rates, change in oil prices and change in tax rates affected revenue collection. The study collected data from the years 2007 to 2011. Using descriptive statistics to analyse the data, the study found that fluctuations in oil prices and exchange rates had a statistically meaningful, beneficial impact on tax revenue generation. On the contrary, the study established that change in tax rates and GDP negatively affected tax revenue collection.
With the goal of pinpointing the impact of inflation rate, exchange rate, and income level on tax revenue in Nigeria, Olufemi and Olatunbosun (2013) conducted a research project on the Macroeconomic determinants of tax revenue in the country. The research project obtained secondary data for 42 years between 1970 and 2011. The study used descriptive statistics where data was analysed into a regression model. The main finding of the empirical analysis was that tax revenue is extremely sensitive to shifts in the research variables, including the exchange rate, income level, and inflation rate. The study also discovered that the presence of macroeconomic volatility had a significant and negative impact on tax revenue collection. This demonstrates the importance of macroeconomics variables in boosting VAT revenue generation.

Research conducted by Birungi (2015) in Rwanda examined the impact of various macroeconomic factors on tax collections. The goal of the research was to determine if macroeconomic variables such as inflation, interest, exchange rate, and GDP growth rate affected tax revenue. Descriptive research was conducted, and as a result, a regression model was built. For this study, researchers drew on secondary data gathered over a nine-year period, from 2006 to 2014. Revenue collection was found to be weakly but positively influenced by changes in GDP, interest rates, and exchange rates. It was also established that inflation rates negatively affected revenue collection. The researcher concluded that GDP, inflation, interest rate and exchange were not significant predictors of Government revenues because of their weak relationship to the revenue collected. Despite the importance of the study's findings—macroeconomic factors and their impacts on revenue collection—the data were gathered through research conducted in Rwanda; a similar study of the variables is therefore required to be conducted in Kenya.

Wawire (2017) undertook an investigation of determining factors leading to tax revenue collection, the VAT case. The purpose of this research was to analyse the impact that Kenya's GDP had on VAT revenue generation. A regression model was used as a means of establishing the relationship between the study components. The study collected data from secondary sources from 1963 to 2008.

This research showed that GDP has an impact on Kenya's VAT tax collected. This research was important because it provided information on the trends of GDP and VAT and the relationship between the two; however, it did not specifically deal with interest rate which is the focus of the contemporary study.

RESEARCH METHODOLOGY

This study employed a descriptive research strategy. The focus of this research strategy is on quantifying how often a specific phenomenon occurs. Its goal is to gather information, examine that information, and determine what factors led to the current state of affairs (Mugenda & Mugenda, 2003). Notably, questions like "how" and "how much" can be answered by a descriptive research design (Creswell, 2011).

The study employed multiple linear regression model in ascertaining the influence of interest on VAT performance in Kenya. The model is set as;

$$VAT_t = \beta_o + \beta_1 IR_t$$

Where;

VAT_t = Performance of VAT at period t

β_o = the constant in the model that represents VAT when the study variable is missing.

β_1, β_2, β_3= Coefficients of the determinants of the selected macroeconomic factor

IR_t = Interest rate at period t

X_t = Dummy Variable depicting the effect of the VAT Act 2013.

t = 1990, …....., 2020

E_t = error term of the model

The study employed a 95% confidence interval with a 5% error margin for analysing the data. This criterion is crucial as it establishes the standards by which the study's central question was evaluated. Notably, the model was supported and used to generate solutions to the research aim when the ANOVA test and F-test suggest values lower than alpha (in this case, 0.05). Coefficient of determination (R^2) values was calculated to assess the overall impact of interest rates on VAT performances. The R^2 indicated the extent of variations in the predicted variable (Performance of VAT) as was predicted by changes in predictor variable.

Descriptive and inferential statistics were used while analysing data in this study. In descriptive statistics, calculations are used to characterize a pattern and then build upon that trend for future predictions and broad generalizations. Measures of central tendency, such as median, mode, and mean, and dispersion measures such as standard deviations, were utilized in the application of descriptive statistics.

RESULTS AND DISCUSSION

In order to understand the general characteristics of the data collected, descriptive statistics were computed to characterize a pattern and then build upon that trend for future predictions and broad generalizations. Measures of central tendency, such as median, mode, and mean, and dispersion

measures such as standard deviations, were utilized in the application of descriptive statistics. The summary statistics of the data collected is presented in Table 1.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
VAT	30	4.858107	.5364	3.7841	5.6123
IR	30	18.23292	5.6302	11.9875	30.0947

Source: Research Data (2022)

Value added tax (VAT) was measured in log. Taking the logarithmic transformations of data helps to make the data more consistent and comparable by normalizing it to a more manageable scale (Wilcox, 2017). This made it easier to analyze and interpret the data, as well as reduce the impact of outliers that may skew the results of certain calculations. Based on the findings presented in Table 4.1 on Value added tax (VAT), the average annual VAT that Kenya had collected from 1991 to 2020 was 4.858107. Over the same period, the minimum VAT collected was 3.7841 and the maximum value was 5.6123. In addition, the standard deviation (0.5364) was small (<1) suggesting that the individual annual Vat had small deviations from the mean value. To establish the trend in VAT, a line graph was drawn. Figure 1 presents the line graph on VAT trend in Kenya between 1991 and 2020.

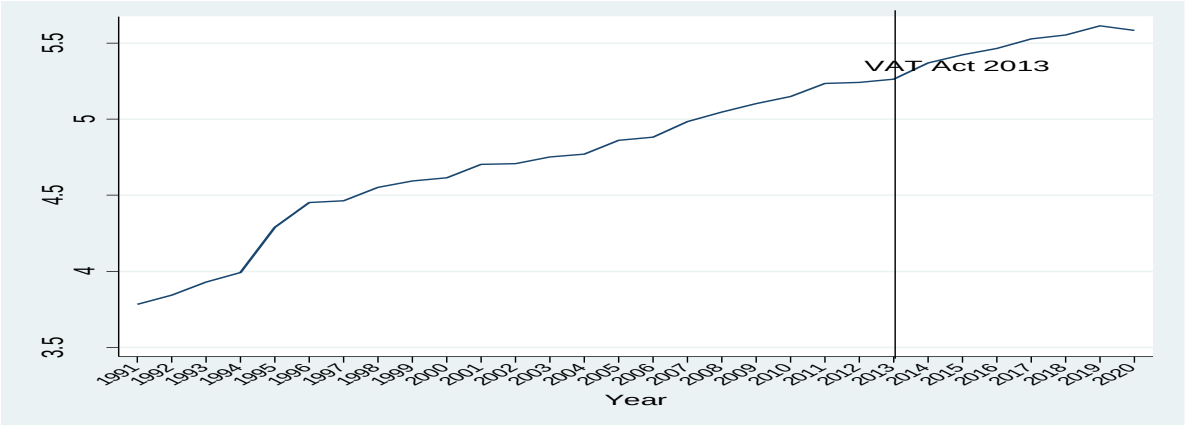


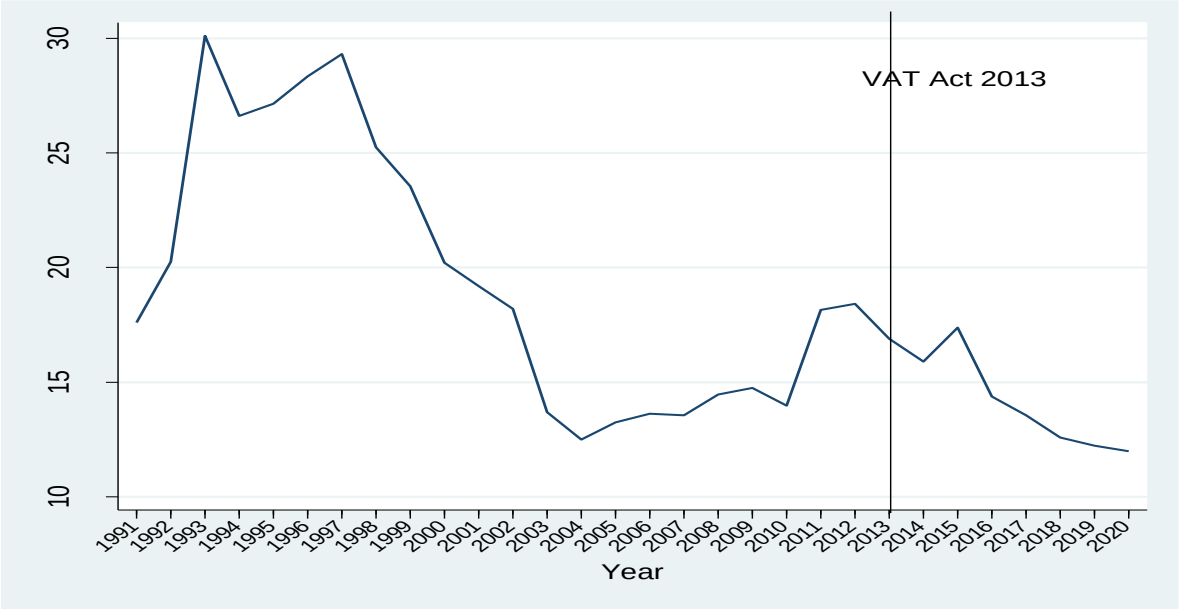
Figure 1: Trend Analysis on VAT
Source: Research Data (2022)

From the findings presented in Figure 1, it is seen that the VAT collected by Kenya has been increasing annually. The least VAT was collected in 1991 it increased over the years. From the graph, it is seen that introduction of VAT in 2013 had no effect on VAT, it continues to increase. There was a slight decline in 2020; this could be explained by the government move through the Finance Act 2020 that amended the VAT standard rate from 16% to 14% and this was in response to the Covid-19 pandemic, a move that was seen to ease the tax burden to the citizen and make available cash flows for consumption and reduction of general prices.

Interest rate (IR) was measured as monthly weighted average lending rate by the Kenyan Commercial Banks. The findings in Table 1 show that the average interest rate recorded by commercial banks between 1991 and 2020 was 18.23. Over the same period, the highest interest rate was 30.09 and the lowest rate was 11.91. The huge difference between maximum and minimum

rates suggests that the interest rate varied from year to year. This is also supported by a large standard deviation (5.63) which implies that individual interest rates recorded had great deviations from the mean value recorded. In identify a trend in interest rate over the same period, the study drew a line graph presented in Figure 2.

Figure 2: Trend Analysis for Interest Rate



Source: Research Data (2022)

The graph in Figure 2 shows that interest rates on lending by the Kenyan Commercial Banks between 1991 and 2020 fluctuated. The highest rate of interest was recorded in 1993; As explained by Ngugi (2001), interest rate liberalization was mounted amidst increasing inflationary pressure and deteriorating economic conditions which was attributed to the expansionary fiscal policy, which saw an increase in money supply. As a result, the financing of the fiscal deficit shifted to the domestic market using treasury bills and this accelerated the increase in interest rates so, the lending rate went up. It is not clear whether introduction of VAT Act in 2013 had any effect on monthly weighted average lending rate by the Kenyan Commercial Banks.

To determine the nature, strength and direction of relationship between study variables, correlation analysis was conducted. The coefficients range between 0 and 1 and they were interpreted as weak if they were below 0.3, moderated if they were 0.3-0.5 and any value above 0.5 was considered strong. Table 2 presents the correlation analysis results.

Table 2: Correlation Analysis

	VAT	IR	IFR	X_t
VAT	1.0000			
IR	-0.6903*	1.0000		
	0.0000			

Source: Research Data (2022)

The findings presented in Table 2 show that interest rate had negative significant relationship with Value Added Tax (r=-0.6903, P<0.05). The inverse relationship implies that increase in interest rate will have a strong, negative and significant effect on the VAT collected. This agrees with Ogbonna and Appah (2012) that escalating interest rates and inflation rates slows economic growth and this has the effect of reducing activities in the economy. According to Chaudhry and Munir (2010), interest rates affect the borrowing and investment activities in an economy. This means that where the interest rates are escalating the rate of investment decreases which may result in low business activities occasioning less tax collection. This is in agreement with the findings of our study.

Having established that interest rate, have significant relationship with VAT collected, the study sought to determine the amount of influence they each had on VAT. Multiple regression analysis was therefore computed. Simple linear regression analysis was used to examine how interest rates, influence the success of value-added tax collections in Kenya. The findings of regression analysis guided in answering the research questions. Table 3 presents results on significance of the model.

Table 3: Model Significance

Source	**SS**	**Df**	**MS**	Number of obs	= 30
				F (3, 26)	= 26.07
Model	6.26262999	3	2.08754333	Prob > F	= 0.0000
Residual	2.08201969	26	0.08007768	R-squared	= 0.7505
				Adj R-squared	= 0.7217
Total	8.34464968	29	0.287746541	Root MSE	= .28298

Source: Research Data (2022)

Coefficient of determination (r-squared) was used to determine the amount of variation in value-added tax collected in Kenya that can be attributed to changes in interest rates. Based on the findings, the value of r-squared was 0.7505; this means that at 95% confidence interval, 75.05% change in value-added tax collected in Kenya can be explained by changes in interest rates. The remaining 24.5% suggest that there are other factors that can be used to explain variation in value-added tax collected in Kenya that were not discussed in this study.

The model developed was considered to be a perfect fit if its significance value was below o.o5. As shown in Table 3, Prob>$F_{3,26}$(26.07) = 0.0000 was less than the selected level of significance (0.05) suggesting that the model was significant. This suggests that the model as constituted was fit to predict value-added tax collected in Kenya.

Since the study found that the interest rates, significantly predict value-added tax collected in Kenya, beta coefficients were determined to show the amount of effect each variable had on value-added tax collected in Kenya. Coefficients table is presented in Table 4.

Table 4: Regression Coefficients

VAT	Coef.	Std. Err.	T	p>|t|	[95% conf. Interval	
IR	- 0.0379	.0106877	-3.55	0.001	-.0599134	-.0159757
_cons	5.6101	.212968	26.34	0.000	5.172408	6.047932

Source: Research Data (2022)

The results in Table 4 were fitted in the following regression model.

$$Y = 5.6101 - 0.0379\ IR_{it} + \varepsilon$$

The coefficient for interest rate (IR) was -0.0379 postulating that holding all other factors constant, a unit increase in interest rate would result in 3.79% decrease in value-added tax collected in Kenya. The variable was significant since the p-value obtained (0.001) was less than the significance level of 0.05. On the basis of these results, the study concluded that interest rate has negative significant effect on value-added tax collected ins Kenya. The findings are in line with those of Chaudhry and Munir (2010) who observed that where the interest rates are escalating the rate of investment decreases which may result in low business activities occasioning less tax collection. According to Siriba (2019), high rates are viewed as an obstacle to economic growth by curtailing investment and promoting financial exclusion; which agrees with the findings of present study.

Conclusions

Regarding the effect of interest rates (Monthly weighted average lending rate by the Kenyan Commercial Banks) on the performance of Value Added Tax in Kenya, the study found that interest rates have strong negative relationship on value-added tax collected in Kenya. Also, the study found that an increase in interest rate leads to a decrease in value-added tax collected in Kenya. Based on these findings, the study reached the conclusion that interest rate has negative significant effect on value-added tax collected in Kenya.

Recommendations

Government should regulate the rise in the level of interest rate in the country in order not provoke price instability in the country. The study also recommends that when adjusting tax rates, it is important to consider the effect it will have on the consumer as any reform made to adjust the rates affects revenue collected. There is need to put into consideration the welfare of the households when undertaking tax reforms to win the support of tax payers in implementation of the reforms as opposed to just focusing on improving the revenue generation capacity of a tax system. In order to be more effective in the administration of VAT, all the VAT Agencies should be connected with Information Communication Technology. This integration would allow for better tracking and monitoring of tax payments, as well as improve the speed and accuracy of data collection and analysis.

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