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Effect of Tax Audit on Revenue Collection in Rwanda

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Abstract- The purpose of this study was to determine the effects of tax audit on revenue collection in Rwanda. The study is limited to the 110 respondent of Headquarter of the Rwanda Revenue Authority (RRA) in Kigali. The study adopted a descriptive approach. Both Primary and secondary data was used and then analyzed through SPSS version 21. Data analysis involved statistical computations for averages, percentages, and correlation and regression analysis. Ordinary least squares (OLS) regression method of analysis was adopted to determine the inferential statistics. From the findings, tax administration, tax revenue performance, revenue protection system, tax automation to a constant zero, revenue collection would be at 0.347. A unit increase on Tax administration would lead to increase in revenue collection by a factor of 0.162, a unit increase in tax revenue performance would lead to increase in revenue collection by a factor of 0.282, a unit increase in revenue protection system would lead to increase in revenue collection by a factor of 0.194 and unit increase in tax automation would lead to increase in revenue collection by a factor of 0.211. Therefore Tax audit actually has an effect to revenue collection as according to the t–tests there is significance in the correlation between tax collected before the audit and after the audit. This clearly indicates that tax audit increases revenue collection. That in essence means that the more the tax audit conducted the more revenue is collected. There is a need for a study on how the size of a company influences the auditing as there is variation for various organizations based on the size.

Keywords: *tax administration, tax audit, revenue collection, revenue performance.*

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Abstract- The purpose of this study was to determine the effects of tax audit on revenue collection in Rwanda. The study is limited to the 110 respondent of Headquarter of the Rwanda Revenue Authority (RRA) in Kigali. The study adopted a descriptive approach.Both Primary and secondary data was used and then analyzed through SPSS version 21. Data analysis involved statistical computations for averages, percentages, and correlation andregression analysis. Ordinary least squares (OLS) regression method of analysis was adopted to determine the inferential statistics. From the findings, tax administration, tax revenue performance, revenue protection system, tax automation to a constant zero, revenue collection would be at 0.347. A unit increase on Tax administration would lead to increase in revenue collection by a factor of 0.162, a unit increase in tax revenue performance would lead to increase in revenue collection by a factor of 0.282, a unit increase in revenue protection system would lead to increase in revenue collection by a factor of 0.194 and unit increase in tax automation would lead to increase in revenue collection by a factor of 0.211. Therefore Tax audit actually has an effect to revenue collection as according to the t – tests there is significance in the correlation between tax collected before the audit and after the audit. This clearly indicates that tax audit increases revenue collection. That in essence means that the more the tax audit conducted the more revenue is collected.There is a need for a study on how the size of a company influences the auditing as there is variation for various organizations based on the size.

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I. Introduction

For most developing countries, taxation goes hand-in-hand with economic growth and taxes are lifeblood for governments to deliver essential services and to make long-term investments in public goods (OECD, 2010; Paepe & Dickinson, 2014).Some of the countries in Latin America region that are on a fiscally sustainable path, revenues appear inadequate to fund a socially sustainable level of provision of public services (Ter-Minassian, 2012). The United Nations considers that achieving the Millennium Development Goals (MDGs) requires developing countries to raise at least 20% of their gross domestic product (GDP) in taxes. Several Asian and Latin American countries and some of sub-Saharan African countries still mobilize less than 17% of their GDP in tax revenues hence making it difficult to finance public projects. (Paepe & Dickinson, 2014)

Very low tax to gross domestic product (GDP) ratio is a common characteristic of most of the developing countries (Ter-Minassian, 2012). For example, over the past few years, lower than projected tax revenue has forced the government of Tanzania to cut its ambitious plans which reduced its capacity to finance public projects. Similarly, Despite the fast economic growth of Uganda, its tax to GDP ratio is still low (11% in 1997 to 13% now)(Mwenda M., 2015); and even Kenya the leading country in East-Africa, the tax to GDP ratio is still lower than the East African region ratio target of about 25%(African Economic Outlook, 2015).

Kircher (2008) stated that tax audit is the examination of an individual or organization's tax report by the relevant tax authorities in order to ascertain compliance with applicable tax laws and regulations of state. He further reported that tax audit is a process where the internal revenue service tries to confirm the numbers that you have put on your tax return. Ola (2001) stated that the process of tax audit involves tax returns that are selected for audit using some selection criteria. Thereafter, the underlying books and records of the taxpayers are examined critically to relate them to the tax return filed. Tax audit is important because it assist the government in collecting appropriate tax revenue necessary for budget, maintaining economic and financial order and stability, to ensure that satisfactory returns are submitted by the tax payers, to organize the degree of tax avoidance and tax evasion, to ensure strict compliance with tax laws by tax payers, to improve the degree of voluntary compliance by tax payers and to ensure that the amount due is collected and remitted to government.

Government revenue includes all amounts of money (i.e. taxes and/or fees) received from sources outside the government entity. Large governments usually have an agency or department responsible for collecting government revenue from companies and individuals. Government revenue may also include reserve bank currency which is printed. This is recorded as an advance to the retail bank together with a corresponding currency in circulation expense entry, that is, the income derived from the Official Cash rate payable by the retail banks for instruments such as 90 day bills. There is a question as to whether using generic business-based accounting standards can give

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a fair and accurate picture of government accounts, in that with a monetary policy statement to the reserve bank directing a positive inflation rate, the expense provision for the return of currency to the reserve bank is largely symbolic, such that to totally cancel the currency in circulation provision, all currency would have to be returned to the reserve bank and cancelled, (Bringham et al, 2008).

Tax audit affects revenue collection in that it promotes voluntary compliance of taxpayers which increases revenue. It also determines the accuracy of returns so as to ensure the right taxes are submitted. With tax audit tax liability can be easily declared and matters that need adjustment are identified. It also helps in collecting tax interests and penalties which thereby increase revenue collection. Tax audit also helps to implement changes to eradicate evasion. Thus, tax audit is positively related to Revenue collection.

In the same region, according to African Economic Outlook (2015), Tax to GDP ratio for Rwanda was 13.9% (2013) and 14.8% (2014) which was lower than the 14.9% and 15.4% target respectively. This is still lower than Sub Saharan Africa (SSA) average of about 20% (The Government of Uganda, 2012) and the East African region target of about 25% (2014). In comparison with other East African Countries like Kenya which has a Tax to GDP ratio of about 20.1% (2014) and Tanzania 18.6% (2014), the Tax to GDP ratio for Rwanda is still low.

The low tax to GDP ratio for Rwanda shows that a lot of tax remains uncollected, despite the fact that the government has put in place a number of interventions to increase the ratio and reduce the aid dependency. These measures include Taxpayer education in form of dialogues with stakeholders, seminars, and others to mobilize tax, to reduce tax evasion and to increase tax compliance; and also online facilities like e-filing and e-payment, e-clearance, e-billing machine and online registration were farther introduced to simplify the process of paying taxes, reduce costs, reduce time taken by taxpayers for declaration and payment of tax, and to increase domestic revenue (Kagarama Bahizi, 2013).Developing countries across the world typically suffer from insufficient supply of internal resources. Despite much effort, many countries fail to raise sufficient revenues to finance the government budgets and to support the development needs of the country. This incapability is a major hindrance for the government's regular operations and for the capacity to accelerate economic growth initiatives (Haque, 2012; Hadler, 2000).

According to the report by Rwanda Auditor general's (2015), the failure to collect all potential revenue, could be linked to Tax Administration system characterized by lack of proper tracking of registered taxpayers for domestic taxes and gaps in existing databases of taxpayers; failure to register some taxpayers and yet RRA was aware of their existence; failure to verify majority of declarations and to follow up taxpayers who had not filed their returns or remained inactive since the time of their tax registration; capacity challenges in tax audits leading to low tax audit coverage and many contested audit results which resulted in reduction in amounts of tax assessed in 145 cases by RRA appeals committee (43% of all contested cases); and weak revenue protection system which is highly dependent on informers instead of generating and reviewing exceptional reports from existing systems to provide more preventive revenue protection strategies.

Low tax to GDP has been linked to poorly administered tax system characterized by low tax audits, complicated tax system and thereby discouraging compliance and contributes to difficulties in raising tax revenues in Latin American region (Aggrey, 2011;Ter-Minassian, 2012). In Nigeria and Zimbabwe, the research findings show that those working in informal sector do not find the need of paying tax whereas it is the largest and growing component in economy and this leads to the revenue loss (Dube, 2014; Abiola & Asiweh, 2012). Could the tax revenue performance in Rwanda be due to the above stated inadequacy in other countries? This research will be relevant since it will seek to establish the relationship between Tax audit and Revenue collection in Rwanda Revenue Authority.

Taxes are the main revenue for the government and thus the department or agent concerned should ensure they are collected the right way. While the principal source of a government's revenue should be taxation, in Rwanda this is often not the case. The country relies on foreign sources of finance namely foreign loans and aid due to its poor tax administration capacity and collection ability. Weaknesses in revenue administration lead to inadequate tax collections. Financing of the resulting budget deficit through borrowing or monetary expansion can cause an unsustainable increase in public debt and inflation, respectively. In the alternative, revenue shortfalls shrink the budgetary resource envelope, thus, affecting the government's ability to implement its policies and programs and provide public services. Unexpected decline in revenue collections also cause budget cuts that result in major inefficiencies in the public expenditure management.

The Government of Rwanda continued to carry out tax reforms over the years with an aim of improving taxation efficiency and increasing the amount of revenue raised to finance the government expenditure. In year 2000, The Rwanda Revenue Authority (RRA) embarked on the decentralization process and further strategies were implemented such as Taxpayers education and electronic tax system to mobilize and increase tax revenue collections.

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However, despite the RRA employed strategies, the failure to collect all the potential tax revenue is persisting, and the tax-to-GDP ratio is lower than their target, EAC and SSA average ratio. The low tax to GDP ratio implies that a lot of tax remains uncollected and so tax revenues collected are inadequate to finance government budget. For example, from 2012 to 2014 the tax to GDP ratio is averaged to14.06% compared to EAC average of about 18%. Therefore, it is evident that the tax that remains uncollected is causing inadequacy in the meeting of the government budget thus making it insufficient. This problem could be linked to inadequate tax registrations, tax audits, tax automation and Revenue protection system (Auditor General of Rwanda, 2015).

Reform of the revenue administration that include efficient and effective tax audit may be needed to enable it to keep up with the increasing sophistication of business activity and tax evasion schemes. With globalization, goods and services are produced by taxable entities in multiple countries. This presents vast opportunities for manipulating transactions to reduce the tax burden. The existence of corruption, tax havens and increasing use electronic financial transactions pose major challenges in enforcing the tax laws. Without a matching increase in the professional and technological capacity of the revenue administration, its chances of monitoring taxable activity and countering tax evasion are seriously reduced. For this reason, tax audit plays an important role to increase the revenue administration capacity. As tax audit is one of the tools of revenue administration, this study focuses on its significance and practice in Rwanda taking RRA as the case study.

In Rwanda, tax evasion is explained by different economic and non-economic factors contributes to lowering the ratio of tax revenues to GDP (15% for 2014/2015), which is less than a half of the ratio computed for major industrialized countries members of OECD (Vito and Howell, 2001). Following this, one may ask, why this low tax to GDP ratio for Rwanda? Is it due to the structure of the economy? Is it due to inefficiency of the tax administration in tackling exhaustively all tax revenue potential? Or it is due to low technical compliance rate of taxpayers into tax net and non-compliance of informal sector accounting more than 40 per cent of the GDP? The researcher will therefore conduct the study to examine the effect oftax audit on revenue collection while looking through the relationship between them.

II. Objectives

The main objective of the study was to establish the effect of tax audit on revenue collection in Rwanda. Specifically:

1. To measure the effectiveness of Tax Administration in RRA
2. To determine the level of Tax Revenue Performance of RRA.
3. To establish the relationship between Tax Administration and Tax Revenue collection of RRA.

III. Literature Review

Awe (2008) defines auditing as an independent examination of the books and accounts of an organization by a duly appointed person to enable that person give an opinion as to whether the accounts give a true and fair view and comply with relevant statutory guidelines. The American Accounting Association (2011) in its Statement of Basic Auditing Concepts in Hayes, Schilder, Daseen&Wallage (2009) described auditing as: a systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events to ascertain the degree of correspondence between these assertions and established criteria and communicating the results to interested users. Akinbuli (2010), Hayes et al (2009) reported that several theories of auditing were made to specify and determine the audit functions. Some of these theories include: Classical theory of tax compliance (Toggler, 1970), theory of planned behavior (Ajzen&Fishbein, 2010), economic deterrence theory (Becker, 2008) and policeman theory (Loewenstein&Nachmias, 2005).

There are several theoretical and empirical studies on tax audit and tax compliance. These studies provide mix reactions on the relationship between tax audit and tax compliance. Alm& McKee (2006) investigates the application of experimental methods to examine the individual compliance responses to a "certain" probability of audit, and conclude that the compliance rate rises if an individual knows he will be audited and the rate falls if he knows he will not be audited. Slemrod, Blumenthal& Christian (2011) examines randomly selected taxpayers and inform them that their filling will be "closely examined' and found evidence of taxpayers' behavior changes in response to an increased probability of audit, although the responses are not uniform among different groups of taxpayers. Mittone (2006) investigates that early experience of audits in taxpayers' "tax life" is a more effective way to increase compliance than later audits. Also, Kastlunger, Kirchler, Mittone, & Pitters (2009) study of experimental research also suggests that, although the effectiveness of audits and fines cannot be completely confirmed, early audits in taxpayers' "tax life" have a positive impact on compliance

In a study by Wahyuni(2013), the data used are 789 firms of observation years during 2000-2010 in Indonesia. From this amount, 291 samples are high profile industry. Consistent with expectation, the results of this study find that (1) auditor specializations are factored into the firm's bond rating by credit rating

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agencies; (2) auditor specialization is negatively and significantly related to the cost of debt financing; (3) the relation between auditor specialization and the cost of debt financing is most pronounced in a high-profile industry. Overall, their result suggests that auditor specialization matters to bond market investor in Indonesia.

A study conducted by Dhaliwal et al. (2008) investigated the link between the fees of auditors and the cost of debt, and the impact of the fees on the association between information on the financial statements and the cost of debt. It was found that non-audit fees are related directly to the cost of debt for issuers of investment grade. The findings are dynamic in controlling the tenure of the auditor and corporate governance, and evidence was found that the relation between earnings and the cost of debt declined as audit fees went up. No evidence was found that auditor fees have a direct effect on the cost of debt for the noninvestment-grade companies, but it was discovered that the relation between earnings and the cost of debt declined as non-audit fees went up.

Niu (2010) in a study found a positive association between the audit and the voluntary compliance. The finding suggests that the audit productivity may be under estimated in many studies in the literature. It reminds us that when considering the productivity of the audit work. Besides the direct audit collections, we should also take the audit impact on the voluntary compliance into consideration. For this reason, the finding may provide tax professionals and tax authorities with incentives to strengthen the audit power and to better structure their audit organization to generate more revenue for the state. Niu (2010) Historical population data of a New York State economic sector were used in this study instead of experimental data or randomly selected sample data often used in the literature. The results of both Ordinary Least Squares (OLS) and Time Series Cross Section (TSCS) autoregressive modeling methods suggest that after an audit, a firm would report a higher sales growth rate.

Jin Kwon (2004) study in Korea observed that a more rigorous analysis to evaluate the determinant of tax culture for the study of tax compliance and tax audit. There are three types of tax audit. Badara (2012) stated these three types of audit include the random tax audit, cut-off tax audit and conditional tax audit. The random tax audit scheme simply provides each self-report of income an equal chance of being chosen for verification by an audit. Cut-off audit scheme, audit resources are employed to verify reports of the tax payers reporting the lowest income levels. The conditional audit scheme requires in addition to the reported income, sources of information representing a noisy signal of tax payers'' thorough income earning potentials.

Badara, (2012) Questionnaire distributed to forty-eight (48) respondents using descriptive statistics. The result shows that the Relevant Tax Authority (RTA) employed tax audit towards achieving target revenue, that tax audit reduce the problems of tax evasion, that tax payers do not usually cooperated with tax audit personnel during the exercise. There are several theoretical and empirical studies on tax audit and tax compliance. These studies provide mix reactions on the relationship between tax audit and tax compliance.

Generally, in literature review, authors discussed the various determinants of Tax Revenue collection e from different corners. Not all authors find the same determinants of Tax Revenue Performance. (Baingana, 2011; Abiola & Asiweh, 2012) assert that poor Tax Revenue Performance may be due to inadequate tax identificatation, assessment, collection procedures and sensitization. On the other side, Gebre (2015) and Annah (2005) have the view that it may be due to the quality of service delivery, Attitude of taxpayers toward tax, and inadequate tax registration. Besides that (Aggrey,2011;Gaalya,2015) also present a different view of Tax Revenue Performance determinants. In their studies their discussed Government expenditure, Foreign aid,Trade openess, Exchange rates and Informal sector share to GDP to be the main determinants of the Tax Revenue Performance. However, in this study, the researcher with a skeptical mind about the literature in place wants to find out the relationship between other indicators such as tax audit, revenue protection system and tax automation (core functions of Tax Administration) with Tax Revenue Performance.

In addition, The researchers stated above used purposive sampling (Baingana,2011; Abiola & Asiweh, 2012), Stratified and Systematic random sampling (Gebre,2015;Annah,2005) in their study to select respondents;whereas this study will use Simple Random Sampling.Whereas various studies were conducted in different developing countries like Nigeria, Ghana, Ethiopia,Uganda, few in Kenya and in OECD countries to improve Tax performance; however, no similar study has been so far conducted in Rwanda. Therefore, this study is aiming to establish the relationship between Tax audit and Revenue collection in RRA.

IV. Methodology

This section describes the methodology that was used in the study.

a) Research design

This study adopted a descriptive survey. Descriptive survey research design is a scientific method which involved observing and describing the behavior of a subject without influencing it in any way (Cooper & Schindler, 2008). It employed both quantitative and qualitative approaches. Quantitative method was used to generate numerical data to ensure high levels of reliability of gathered data, and qualitative

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method to generate non-numerical data in order to get in-depth information about the variables. The study engaged a descriptive, cross sectional and correlational research designs. It was descriptive because it used descriptive statistics to describe the two variables of the study; and it was cross sectional since it was carried out over a short period of time and data was collected as a one stop event. It engaged correlation design to establish the relationship between Tax Audit and Revenue collection in RRA.

b) Target Population

The population consists of RRA staff involved in day-to-day Tax auditing. These include;Head of Divisions, Group leaders and Officers involved in the tax audit activities. They have been selected purposively because they are the one who interface with taxpayers and enforce the legal framework promoted by legislators to administer and safeguard government revenue.

c) Sample Size

Sampling frame is a list of all the population subjects that the researcher targeted during the study (Cooper & Schindler, 2008). The sample size comprised staff from all tax audit departments at RRA.The sample size was statistically calculated using Slovin's formula and is 87 respondents.

d) Sampling Procedure

The study usedsimple random sampling method in selecting the respondents in the study. Random sampling was used because of its simplicity and it gives equal chance to each person to be selected. There is no bias in selecting respondents.

e) Research Instrument

In this study, data was collected using semi-structured questionnaire that was administered to RRA staff and a face to face interview was conducted to the key people to get depth information on the matter. A questionnaire was designed according to Likert Scale: "Strongly disagree (1), Disagree (2), Agree (3) and strongly agree (4)" to explore the key variables of Tax audit and revenue collection. The questionnaire comprised of closed questions, Attitude questions and open questions. It comprises of three sections. Section A entails the Biodata; Section B Entails Tax audit and Section C Revenue collection.

f) Sources of Data

Primary data was collected from the responses of the questionnaires to measure the effectiveness of Tax audit and the level of Revenue collection in RRA. Secondary data was collected from RRA reports, journals, World Bank reports, African Development Bank reports and internet library to provide data on Revenue collections and to assess the costs of collection for the years that was covered by the study.

g) Validity and reliability

For quality Control, a pre-test of the research instrument to test its validity and reliability was conducted. The Cronbach's alpha coefficient was used to assess the Reliability while the Validity was determined using the Content Validity Index(CVI).

h) Data Processing and Analysis

A multiple regression model was used to analyze the relationship between tax audit and revenue. The model was designed as follows:

$$Y = \alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\mu$$

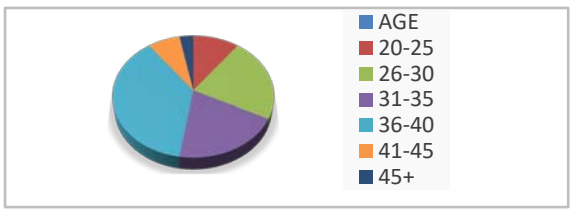
Where, Y is a dependent variable (revenue collection), α=constant, μ=error term, β =coefficient of the disbursement, X_1 = taxpayer's registration, X_2 = Revenue protection system and X_3 = tax automation. Factor analysis of the individual tax audit (Taxpayer's registration, Revenue protection system and Tax automation) was measured throughANOVA to look for significant differences between the variables.

i) Ethical Consideration

Before collection of data, awareness of the study was ensured to the respondents where the explanations of the benefit of the research were clarified.

V. Findings, Discussions & Results

This section presents there search findings, the discussion during the activity of collecting the data and the results. The main aim of the suty is to examine the effect of tax audit to revenue on 87 sampled respondents. A total of 70 administered questionnaires were returned. This shows a good rate according to Mugenda (2008). 74 % of respondent were males, 100% are educated which shows unbiased of gender and are capable and reliable to explore the underpinning issues related to the study respectively. In addition, majority of respondents are adults(38%) as shown on the figure below.



Majority of the respondents (38%) fall within 36 to 40 years of age. This is followed by (22%) in the age group of 26 to 30 years. There are (20%) respondents in the age of 31 to 35 years. The age bracket of 45 years and above had only (3%) respondent. A cumulative 80% of the respondents are within 26 to 40 years.This is an indication that respondents were well distributed in terms of their age. Furthermore, results revealed that 27.1% of the respondents had worked in the project for a period of one to two years, 40% of the respondents

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had worked in the project for a period of 3 to 4 years, whereas 24.3% of the respondents had worked in the project for a period of more than 5 years. Therefore, from the study findings, it can be deduced that respondents had experience on Tax audits and revenue collection.

a) Analysis of Tax administration in RRA

11% of the study participant agreed with the statement every taxpayer identified is always registered while majority (89%) disagreed with the statement. Majority (61%) strongly agreed with the statement that a quick check is done on taxpayers to establish if they are correctly registered while 39% only agreed with the statement. The findings also indicated that 20% of the respondents strongly agreed with the statement the ranking of eligible tax payable is based on taxpayer's income, 50% just agreed while 30% disagreed with the statement. Majority (59%) agreed with the statement that tax offices are effective in identifying and registering all potential taxpayers, while 41% strongly agreed with the statement. Majority (59%) of the study participant agreed with the statement that identification methods are effective in registering all potential taxpayers while 8% disagreed with the statement. Most (67%) of participants agreed with the statement that all registered tax payers are followed up to find out if they are active while 33% strongly agreed with the statement. Majority (76%) of the study participant strongly agreed with the statement that all taxpayers' basic information is collected and recorded on a timely basis while 24% just agreed with the statement. Lastly the findings also indicated that 19% of the respondents strongly agreed with the statement that taxpayers are able to register without intervention of tax officials, 67% just agreed while 14% disagreed with the statement.

Tax stands as a major source of government revenue not only for developed countries but also for developing countries. For countries to benefit from the opportunities afforded by globalization they must be able to mobilize adequate fiscal revenues and the most reliable way to get it is with an effective tax administration, Jamala*et al;* (2013) noted that, tax revenues guide national development and also are used to finance a substantial part of government operations including provision of public social services.

i. *Correlation*

It was found that tax administration is significantly correlated to the revenue performance ($r=0.518$, $p<0.01$). There is a Strong positive relationship between Tax administration and Revenue performance at RRA as indicated by correlation of 0.518. This shows that the sampled data can be applied to the general population across RRA at 95% confidence level. Byakusaaga (2000) noted that tax administration to a great extent depends on the tax collection machinery. Tax administration is largely blamed on the low levels of revenue collections in Kenya and in most low developed countries. This success of tax reform largely depends on the implementing machinery (tax administration). Stephen (1984) says that the race of administration of any tax depends, to a large extent, on the number of tax payers and the average payment relative to the cost of collection from each one. The ease of administration also depends on the existence of records from other sources to crosscheck the report of any particular taxpayer.

ii. *Regression*

Regression analysis was conducted to empirically determine whether tax administration was a significant determinant of revenue collection. Regression results indicate the goodness of fit for the regression between tax administration and revenue collection was satisfactory in the linear regression. An R squared of 0.312 indicates that 31.2% of the variances in revenue collection of RRA are explained by the variances in tax administration in the linear model. The correlation coefficient of 51.8% indicates that the combined effect of the predictor variables has a positive correlation with Revenue collection. Result review that tax administration is statistically significant in explaining revenue collection of RRA. An F statistic of 5.020 indicated that the combined model was significant. From the analysis, a p-value less than 0.05 (p-value =0.0000) was obtained. This implies that the simple linear model with tax administrationas the only independent variable is significant.

Table 1: ANOVA results showing the effect of tax administration on revenue performance ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12.14	1	12.14	5.020	.000[a]
	Residual	28.684	49	.476		
	Total	40.824	50			

a) *Dependent Variable: Revenue collection*

b) *Predictors: (Constant), Tax administration*

Source: Primary data, 2018

Correlation coefficients show that tax administration (X1) is significant (p-value = 0.0000) in influencing Revenue collection (Y). The fitted model from this analysis is shown below:

$$Y= 2.487 + 0.342X1$$

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Table 2: Coefficient results showing the relationship between tax administration and Revenue Collection Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.487	.270		7.169	.000
	Tax administration	.342	.062	.444	2.241	.000

Source: Primary data, 2018

a) Dependent variable: Revenue collection

b) Tax Revenue performance analysis

Majority (59%) agreed with the statement that there are sufficient financial resources to audit all taxpayers, while 41% strongly agreed with the statement. Majority (59%) of the study participant agreed with the statement that the institution has sufficient staff to carry out audits while 8% disagreed with the statement. Most (67%) of participants agreed with the statement that RRA organizes training programs for auditors while 33% strongly agreed with the statement. Majority (76%) of the study participant strongly agreed with the statement that financial statements and records of all potential taxpayers are examined annually while 24% just agreed with the statement. The findings also indicated that 19% of the respondents strongly agreed with the statement that audits are conducted on a timely basis to verify if the taxpayer has correctly reported and assessed their obligations, 67% just agreed while 14% disagreed with the statement. Majority (87%) agreed with the statement that RRA has the capacity to identify tax evaders through audits while 13% strongly agreed with the statement. Majority (59%) of the study participant strongly agreed with the statement that RRA gives audit notifications to the taxpayers on time while 41% disagreed with the statement. Lastly Majority (59%) of the study participant strongly agreed with the statement that RRA gives audit notifications to the taxpayers on time while 41% disagreed with the statement.

Table 3: Correlation Analysis on the level of tax revenue performance

		Tax revenue performance	Revenue collection
Tax revenue performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	70	
Revenue collection	Pearson Correlation	.681**	1
	Sig. (2-tailed)	.000	
	N	70	70

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

Source: Primary data, 2018

The above table indicatelevel of Tax Revenue Performance of RRA is significantly correlated to the revenue collection ($r=0.681$, $p<0.01$). There is a Strong positive relationship between level of Tax Revenue Performance and revenue collection as indicated by correlation of 0.681. This shows that the sampled data can be applied to the general population across RRA at 95% confidence level.

i. *Regression analysis*

Regression analysis was conducted to empirically determine whether level of Tax Revenue Performance of RRAwas a significant determinant of revenue collection. The results in the goodness of fit for the regression between level of Tax Revenue Performance and revenue collection was satisfactory in the linear regression. An R squared of 0.282 indicates that 28.2% of the variances in revenue collection at RRA are explained by the variances in level of Tax Revenue Performance in the linear model. The correlation coefficient of 68.1% indicates that the combined effect of the predictor variables has a positive correlation with Revenue collection. Result reviews that level of Tax Revenue Performance of RRAis statistically significant in explaining revenue collection at RRA. An F statistic of 4.17 indicated that the combined model was significant. From the analysis, a p-value less than 0.05 (p-value =0.0000) was obtained. This implies that the simple linear model with the level of Tax Revenue Performance as the only independent variable is significant.

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Table 4: ANOVA results showing the effect of the level of Tax Revenue Performance on revenue collection ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12.14	1	12.14	4.17	.000[a]
	Residual	28.684	49	.476		
	Total	40.824	50			

a) *Dependent Variable: Revenue collection*
b) *Predictors: (Constant), Tax administration*

Source: Primary data, 2018

Correlation coefficients show that the level of Tax Revenue Performance (X2) is significant (p-value = 0.0000) in influencing revenue collection (Y). The fitted model from this analysis is shown below:

$$Y = 0.755 + 0.342X2$$

Table 5: Coefficient results showing the relationship between the level of Tax Revenue Performance on revenue collection Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.755	.698		6.365	.000
	level of Tax Revenue Performance	.342	.152	.308	2.663	.000

a) *Dependent variable: Revenue collection*

Source: Primary data, 2018

c) *Revenue protection system analysis*

Majority (59%) of the study participant agreed with the statement that RRA system is able to detect and track fraudswhile 8% disagreed with the statement. Most (67%) of participants agreed with the statement that RRA system is able to track non-compliant taxpayerswhile 33% strongly agreed with the statement. Majority (76%) of the study participant strongly agreed with the statement that RRA system is able to track non-registered taxpayers while 24% just agreed with the statement. The findings also indicated that 19% of the respondents strongly agreed with the statement that RRA system is able to keep all taxpayers' information, 67% just agreed while 14% disagreed with the statement. Majority (87%) agreed with the statement that the system is able to generate appropriate reports while 13% strongly agreed with the statement. Majority (59%) of the study participant strongly agreed with the statement that the system is able to ensure the accuracy and security of the information processed while 41% disagreed with the statement. Majority (59%) of the study participant strongly agreed with the statement that the system is able to ensure that a transaction is processed once. while 41% disagreed with the statement. Furthermore, the findings also indicated that 19% of the respondents strongly agreed with the statement that Preventive revenue protection strategies are provided by the system in place, 67% just agreed while 14% disagreed with the statement. Lastly (87%) agreed with the statement that the revenue collected is protected from any leakage while 13% strongly agreed with the statement.

i. *Correction analysis*

Results indicate that Revenue protection system is significantly correlated to the revenue collection ($r=0.656$, $p<0.01$). There is a Strong positive relationship between Revenue protection systemand revenue collections as indicated by correlation of 0.656. This shows that the sampled data can be applied to the general population across RRA at 95% confidence level.

ii. *Regression analysis*

Regression analysis was conducted to empirically determine whether Revenue protection systemwas a significant determinant of revenue collection. Result indicates the goodness of fit for the regression between Revenue protection systemand revenue collection was satisfactory in the linear regression. An R squared of 0.285 indicates that 28.5% of the variances in revenue collection at RRA are explained by the variances in Revenue protection systemin the linear model. The correlation coefficient of 65.6% indicates that the combined effect of the predictor variables has a positive correlation with Revenue collection. Result review that Revenue protection systemis statistically significant in explaining revenue collection at RRA. An F statistic of 4.85 indicated that the combined model was significant. From the analysis, a p-value less than 0.05 (p-value =0.0000) was obtained. This implies that the simple

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linear model with the Revenue protection systemas the only independent variable is significant.

Table 6: ANOVA results showing the effect of Revenue protection system on revenue collection ANOVAb

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12.14	1	12.14	4.845	.000[a]
	Residual	28.684	49	.476		
	Total	40.824	50			

a) *Dependent Variable: Revenue collection*
b) *Predictors: (Constant), Tax administration*

Source: Primary data, 2018

Correlation coefficients show that the Revenue protection system(X3) is significant (p-value = 0.0000) in influencing revenue collection (Y). The fitted model from this analysis is shown:

$$Y = 3.078 + 0.245X3$$

Table 7: Coefficient results showing the relationship between the Revenue protection systemon revenue collection Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.078	.698		6.365	.000
	Revenue protection system	.245	.152	.308	2.663	.000

a) *Dependent variable: Revenue collection*

Source: Primary data, 2018

d) Tax automation analysis

Results revealed that 20% of the respondents strongly agreed with the statement that All transactions are processed using automated system, 50% just agreed while 30% disagreed with the statement. Majority (59%) agreed with the statement that all registered taxpayers are able to file electronically, while 41% strongly agreed with the statement. Majority (59%) of the study participant agreed with the statement that E-tax system reduces time taken by taxpayers in declaration and tax payment while 8% disagreed with the statement. Most (67%) of participants agreed with the statement that Non-compliance cases decreased as a result of e-tax system while 33% strongly agreed with the statement. Majority (76%) of the study participant strongly agreed with the statement that aE-tax system increased revenue collection while 24% just agreed with the statement. Moreover, the findings also indicated that 19% of the respondents strongly agreed with the statement that all records are digitized with RRA, 67% just agreed while 14% disagreed with the statement. Lastly the findings also indicated that (67%) of participants agreed with the statement that Electronic records are able to be retrieved after an extended period for audit purposes while 33% strongly agreed with the statement. Gasteiger (2011) indicated that automated system enhances administration with the provision of multiple scenarios that allow senior management in a multi-campus university system to generate multiple income scenarios, make well-informed decisions concerning the operation of their institution and timely calculation and allocation of resources to academic departments.In Kenya, Kioko (2012) indicated that the macro model performs better the variations in funds allocated to counties than the representative tax system.

i. *Correlation*

The results indicate that tax automation is significantly correlated to the revenue performance ($r=0.789$, $p<0.01$). There is a Strong positive relationship between Tax automation and Revenue performance at RRA as indicated by correlation of 0.789. This shows that the sampled data can be applied to the general population across RRA at 95% confidence level.

ii. *Regression*

Regression analysis was conducted to empirically determine whether tax automation was a significant determinant of revenue collection. Regression results in Table 4.23 indicate the goodness of fit for the regression between tax automation and revenue collection was satisfactory in the linear regression. An R squared of 0.402 indicates that 40.2% of the variances in revenue collection of RRA are explained by the

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variances in tax automation in the linear model. The correlation coefficient of 78.9% indicates that the combined effect of the predictor variables has a positive correlation with Revenue collection. Result review that tax automation is statistically significant in explaining revenue collection of RRA. An F statistic of 7.658 indicated that the combined model was significant. From the analysis, a p-value less than 0.05 (p-value =0.0000) was obtained. This implies that the simple linear model with tax automationas the only independent variable is significant.

Table 8: ANOVA results showing the effect of tax automation on revenue collection ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12.14	1	12.14	7.658	.000[a]
	Residual	28.684	49	.476		
	Total	40.824	50			

a) *Dependent Variable: Revenue collection*
b) *Predictors: (Constant), Tax administration*

Source: Primary data, 2018

Correlation coefficients show that tax automation (X4) is significant (p-value = 0.0000) in influencing Revenue collection (Y). The fitted model from this analysis is shown below:

$$Y= 2.107 + 0.174X4$$

Table 8: Coefficient results showing the relationship between tax automation and Revenue Collection Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.107	.698		6.365	.000
	Tax automation	.174	.152	.308	2.663	.000

Source: Primary data, 2018

e) Linear regression model analysis

Regression analysis was done to determine the relationship between tax audit on revenue collection. Result shows that the coefficient of determination R square is 0.294 and R is 0.542 at 0.05 significant level. The coefficient of determination indicates that 29.4% of the variation in the dependent variable banks performance is explained by the independent variables (tax administration, tax revenue performance, revenue protection system, tax automation). It further present the ANOVA on tax audit on revenue collection. The ANOVA results for regression coefficient indicate that the significance of the F is 0.00 which is less than 0.05. This implies that there is a positive significant relationship between tax audit on revenue collectionand that the model is a good fit for the data.

From the data above, the established regression equation was

$$Y = 0.347 + 0.162\ X1 + 0.282\ X2 + 0.194\ X3 + 0.211\ X4$$

From the above regression equation, it was revealed that holding Tax administration, tax revenue performance, revenue protection system, tax automationto a constant zero, revenue collection would be at 0.347. A unit increase on Tax administrationwould lead to increase in revenue collection by a factor of 0.162, a unit increase in tax revenue performancewould lead to increase in revenue collection by a factor of 0.282, a unit increase in revenue protection systemwould lead to increase in revenue collection by a factor of 0.194 and unit increase in tax automation would lead to increase in revenue collection by a factor of 0.211.

VI. Conclusion and Recommendation

a) Conclusion

Tax audit actually has an effect to revenue collection as according to the t – tests there is significance in the correlation between tax collected before the audit and after the audit. This clearly indicates that tax audit increases revenue collection. That in essence means that the more the tax audit conducted the more revenue is collected. Thus, it is right to say that tax audit is directly related to revenue collection. All the tax audits are important because they add something to revenue and thus should be encouraged as it assists the government in collecting appropriate tax revenue

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necessary for budget, maintaining economic and financial order and stability, to ensure that satisfactory returns are submitted by the tax payers, to organize the degree of tax avoidance and tax evasion, to ensure strict compliance with tax laws by tax payers, to improve the degree of voluntary compliance by tax payers and to ensure that the amount due is collected and remitted to government.

b) Recommendations

The study recommends that the tax audit reports be submitted to the public and a standard procedure to be found in choosing the companies that random audit is conducted. This is to assure the public that those audited randomly are not eyed or discriminated but at least they see the result and be aware of the procedure used in the selection. The public is also urged to submit their taxes fully and seek clarification wherever they are not sure of what to do.

For further research, this study examined the effects of tax audit on revenue collection over a period of less than 5 years. There is a need for further studies to carry out similar tests for a longer time period. Due to the importance of having high quality audit, further studies should explore the areas that relate to audit quality such as customer service satisfaction, customer loyalty, auditors switching and auditors' turnover. This will go along incorporating quality and independence of management and board membership; internal audit considerations.Furthermore, there is need for a study on how the size of a company influences the auditing as there is variation for various organizations based on the size. Further, a study should be conducted on the procedures followed during audit to see if all the Rwanda Revenue employees follow the same procedures or a standard procedure is in place and adhered to.

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