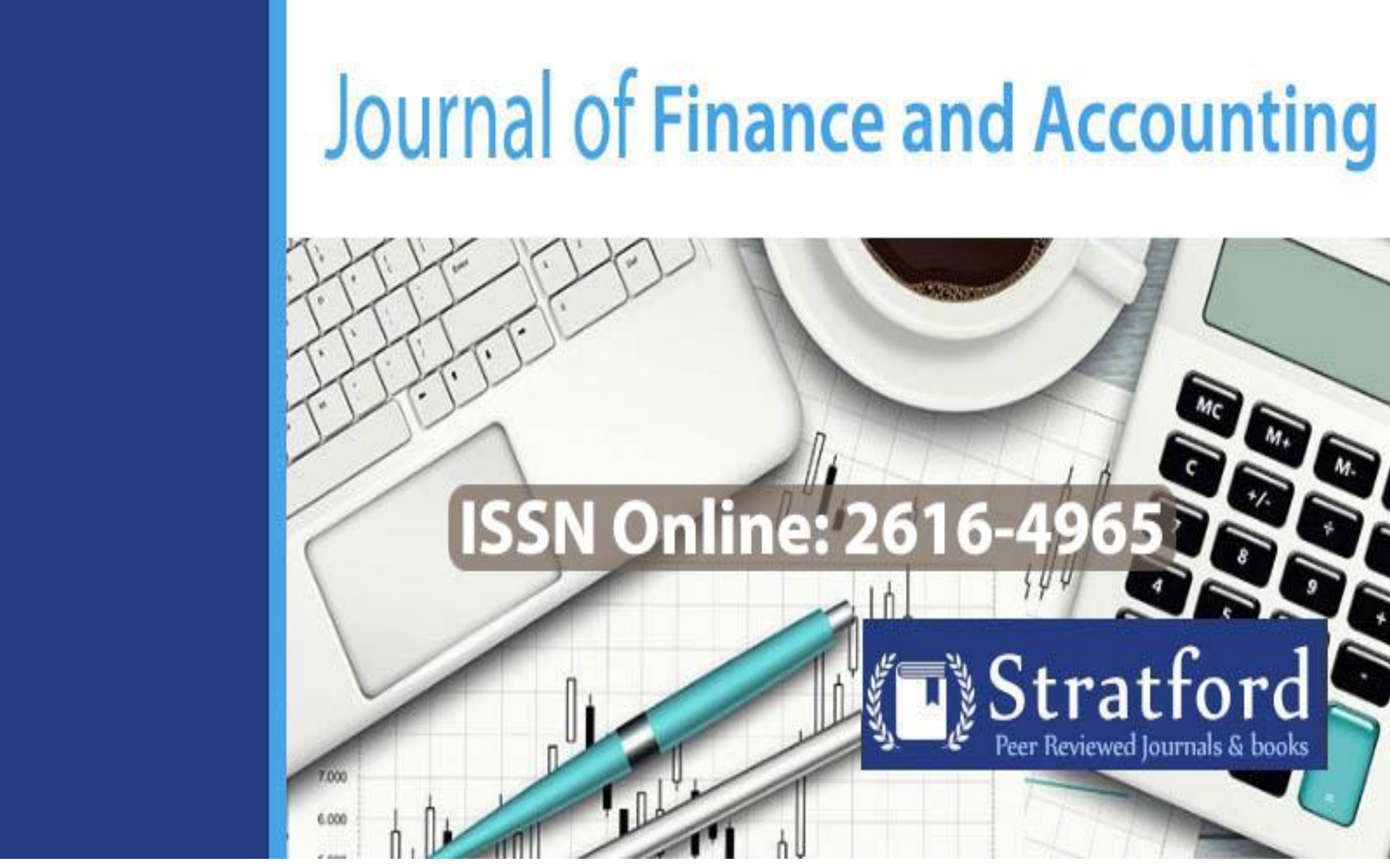

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Effect of Tax Reform on Revenue Collection Performance in Rwanda: A Case of Rwanda Revenue Authority Headquarters

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Abstract

This study aimed to evaluate the effect of tax reforms on revenue collection performance at RRA. Specifically, the study examined the effect of tax policy reforms, administrative policy reforms, and technological tax reforms on the revenue collection performance at RRA. The study adopted a descriptive research design and targeted 90 employees of RRA. Data were gathered from 74 respondents selected by the purposive sampling technique. Data were gathered through questionnaires and documentary reviews and analyzed using both descriptive and inferential statistics. The coefficient of correlation (R) was found to be R = 0.6294. This implies that there was a positive and moderate correlation between tax reforms and revenue collection performance at RRA Headquarters. Moreover, the R^2 (coefficient of determination) represented the measure of variability in the revenue collection performance. From the model, (R^2 = 0.6738) shows that tax reforms account for 67.38% of the variation in revenue collection performance. This implies that, while keeping other factors constant, the adopted tax reforms explained the most of the share in the revenue collection performance under study. The study concluded that comprehensive tax reforms play a role in shaping revenue collection performance at the Rwanda Revenue Authority (RRA) Headquarters. By implementing reforms that encompass tax policy, administration, and technology, RRA and other tax authorities optimized revenue collection efficiency and effectiveness. The study recommended that RRA should continue to pursue comprehensive tax reforms that encompass tax policy, administrative, and technological aspects. A holistic approach to reform can lead to significant improvements in revenue collection efficiency and effectiveness.

Keywords: *Tax reforms, Revenue collection performance, Tax policy reforms, Administrative policy reforms, Technological tax reforms*

1. Introduction

Taxation is one of the government policy instruments aimed at achieving equity and efficiency in the economy and is a practical source of finance in many economies across the globe (Avi-Yonah, 2006).Tresch (2014) echoed that revenue collected by governments majorly depends on taxpayers' voluntary compliance whereby the taxpayers fulfill their tax obligation freely and completely. However, Marti (2010) viewed that developing economies are unable to raise sufficient tax revenue due to non-compliance amongst the taxpayers.

The imperative of tax reform has been accentuated by the widespread challenges that have afflicted many nations. As a response to these crises, numerous countries have instituted tax modifications (Bird, 2013). The objectives of tax reforms tend to converge across nations, particularly in the context of developing countries (Islam, 2021). These reforms, as evidenced by various studies, are designed to serve multifaceted purposes, including raising revenue for financing government expenditures, fostering savings and investment, and encouraging labor-intensive methods, especially within the realm of small and medium-sized enterprises, thereby promoting income equality.

Cuccia (2013) records poor deliberate compliance dimensions with tax guidelines in an investigation situated in Malaysia since they don't put stock in the tax framework. Ghana has undertaken different tax reforms as policy instruments aimed at accelerating growth and poverty reduction. Osei (2006) echoed that Ghana's major changes in tax administration fiscal policies played a key role in improving the country's revenue mobilization and overall fiscal health and attributed the revenue growth to the expansion of tax base, the structure of taxation; and reorganization of the tax administer. In Zimbabwe, SMEs don't sufficiently follow tax laws as per Nyamwanza *et al.* (2014). Their exploration uncovered that most SMEs avoid tax by paying rewards, migrating, or briefly shutting business during compliance barrage.

In East African Context, Uganda instituted key administrative reform mainly concerning moving the existing revenue department out of the Ministry of Finance into a semi-autonomous revenue authority overseen by an independent Board of Directors as a way of providing incentives for the staff to improve their performance and thereby increase revenues. Kenya has experienced significant changes in its economy over the last four decades. One of the striking characteristics of Kenya at present is that unlike many other Sub-Saharan countries today, it is a high tax-yield country with a tax-to-GDP ratio of over 20 percent. As a result, Kenya can finance a large share of its budget, while external donor finances are used to cover a much smaller share than in other countries of the region. In Tanzania, Lubua (2014) points out those taxpayers did not willfully document their profits as legally necessary.

Over the years, Rwanda has embarked on a series of tax reforms aimed at modernizing its tax system, enhancing revenue collection, and creating a conducive environment for businesses. These reforms encompass various aspects, including tax rates, tax administration processes, and compliance mechanisms. The government's commitment to these reforms is evident in its effort to simplify tax procedures, promote transparency, and attract foreign investments. While tax reforms are often undertaken with the expectation of improving revenue collection, it is crucial to empirically assess their impact on revenue performance. Understanding how tax reforms affect revenue collection is essential for policy evaluation, adjustment, and future planning.

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1.1 Problem statement

To address the persistent challenges related to revenue collection, Rwanda has implemented a series of tax reforms encompassing policy technological and administrative changes. These reforms, initiated since the early 2000s, were designed to widen the tax base, encourage foreign direct investment, and strengthen revenue collection performance. They included significant milestones such as the introduction of the Value-Added Tax (VAT) in 2001 and the adoption of advanced technologies to streamline administrative processes, including tax return processing, taxpayer audits, and tax filing. Notably, the implementation of tax policy reforms and registration in 2011 aimed to enhance accuracy and address inconsistencies in tax submissions, resulting in widespread improvements across the revenue system (Nakamura & Williamson, 2016).

However, despite the existence of these far-reaching reforms, the issue of revenue collection performance persists as a significant challenge in Rwanda's fiscal landscape. While the tax potential of the country is substantial, with notable figures such as a potential tax contribution of 79 billion Rwandan Francs (IMF, 2014), the actual revenue collection often falls short of these projections. This shortfall in revenue collection has far-reaching implications, including hindering government revenue gathering and impacting its capacity to allocate resources effectively for essential public services and infrastructure development.

The overarching challenges associated with weak tax administration and enforcement within Rwanda's tax system exacerbate the issue of suboptimal revenue collection. Research conducted by Alm *et al.* (2012) highlights a concerning lack of awareness among taxpayers regarding tax guidelines, contributing to inadvertent non-compliance. Moreover, tax non-compliance leads to significant revenue losses, further straining the government's financial resources.

Despite the extensive tax reforms undertaken, it remains unclear whether these initiatives have effectively addressed the challenge of revenue collection performance, as originally intended. Existing studies present conflicting findings regarding the impact of these reforms on revenue collection. This study seeks to provide clarity on these issues, offering empirical insights into the effectiveness of the reforms and their impact on revenue collection performance in Rwanda. By examining the broader context of revenue collection, it aims to shed light on the multifaceted challenges faced by the country's revenue system and contribute to informed policy decisions for improving revenue collection in Rwanda.

1.2 Research objectives

The general objective of the study was to assess the effect of tax reforms on revenue collection performance in Rwanda. Specifically, the study aimed to:

- To assess the effect of tax policy reforms on revenue collection performance at RRA Headquarters
- To determine the effect of administrative tax reforms on revenue collection performance at RRA Headquarters
- To establish the effect of technological tax reforms on revenue collection performance at RRA Headquarters

2. Literature Review

Administrative tax reforms

Administrative reforms encompass mechanisms pivotal in translating tax laws and systems into practice, fundamental for broader taxation accomplishments (Hardler, 2000). Tax administration comprises the framework facilitating day-to-day revenue management, covering systems, structures, leadership, and organizational processes that enable tax agencies to fulfill their core mandates. According to Eissa and Jack (2009) and Ngeni (2016), the core function of tax administration involves scrutinizing consistency and authorizing approvals as stipulated in principles and guidelines. Gurawa and Mansor (2015) emphasize that effective tax administration should revolve around identification, assessment, and collection of tax revenues. The objectives of tax administration reform strategies, as underscored by Silvani (2009), depend on the extent of the tax gap. These objectives include maintaining current compliance levels while reducing compliance and collection costs, improving key procedures for enhanced compliance, and significantly modifying tax administration approaches to achieve substantial gains in compliance.

Successful tax administration, as highlighted by Baer and Silvan (2007), is crucial for revenue accumulation in both developed and developing economies. Silvani (2009) reiterates that the primary goals of tax administration reforms hinge on the size of the tax gap, emphasizing the need to maintain consistency, enhance compliance procedures, and modify tax administration approaches.

Administrative tax reforms aim to curb corruption, crime, and administrative inefficiencies in tax revenue collection (Ng'eni, 2016). While tax laws establish the potential for revenue generation, the actual collection heavily depends on the efficiency and effectiveness of administration (Gill, 2003). Feldstein (2008) identifies three components influencing the impact of tax reforms on revenue: mechanical change, behavioral change, and excess tax burden. Mechanical change represents additional tax revenue when consumption expenditure remains constant, while behavioral change reflects additional revenue based on responses to tax rate changes. Excess tax burden, or deadweight loss, embodies additional tax costs due to price distortions impacting taxpayers' consumption (Hines, 2007).

Rwanda's tax administration underwent significant modernization reforms, restructuring its organization along functional lines in 2003 and integrating new technologies for administrative processes. These reforms, ongoing in nature, received substantial support from bilateral and multilateral organizations. DFID, notably, offered extensive technical assistance and financial investment, aiding the RRA in law creation, providing technical support across various mandates, and supplying infrastructure and IT systems from 1998 to 2010 (DFID). These initiatives aimed to enhance the efficiency and effectiveness of Rwanda's tax administration system, signifying a continuous commitment to reform and modernization.

Numerous empirical studies conducted by scholars have meticulously examined the relationship between administrative tax reforms and revenue collection across different countries. Torgler *et al.* (2014) investigated Swiss cantons, finding that administrative improvements such as simplified tax reporting and enhanced taxpayer services led to a notable positive impact on revenue collection performance and overall revenue generation. Similarly, Kleven *et al.* (2011) delved into Denmark's scenario, discovering that streamlining tax filing procedures and facilitating better information exchange between tax authorities and taxpayers significantly reduced tax evasion and consequently improved revenue collection. These studies underline the significance of procedural simplification and improved communication channels between tax entities and taxpayers in enhancing revenue collection.

Moreover, research by Pomeranz (2015) in Colombia emphasized the role of technology-driven administrative reforms in augmenting revenue collection efficiency. The introduction of technology-based revenue collection methods was found to significantly increase collection performance. Similarly, Gemmell and Ratto's (2012) cross-country analysis highlighted a positive correlation between efficient tax administration and higher revenue collection, advocating for increased investment in bolstering tax administration quality.

Studies in Sweden by Larsen *et al.* (2019) reiterated the positive impact of improved taxpayer services and digitalization on revenue collection performance. Simultaneously, investigations in countries like Kenya (Ondabu *et al.* , 2018), Uganda (Muhumuza and Kateshumbwa, 2016), Rwanda (Musoni *et al.* , 2019), and Ethiopia (Alemayehu and Hailemariam, 2018) consistently showed that reforms aimed at simplifying tax processes, enhancing taxpayer services, and leveraging technology significantly influenced revenue collection positively.

Tax Policy reforms

Tax policy is an administrative apparatus that is worked to exact and gather taxes through the use of various taxes and premises of taxation (Congdon *etal.*, 2009).The tax policy change is the way toward changing the way the taxes are gathered or overseen by a legislature. According to Silvani and Baer (2007) tax policy reform in developing countries is part of a broader fiscal reform effort aimed at restoring macroeconomic stability and at restructuring tax systems so that taxes are more efficient, less distortionary of market forces, and easier to administer. Roberts (1994) explains that inefficient fiscal policy mirrored in the squandering of public funds and low quality of public goods will make taxpayers think twice before paying their tax liabilities. Kirchler *et al.* (2010) also clarify that the multifaceted nature of the tax laws and tax framework impact the choice to agree or to avoid taxes.

Livoi (2019) scrutinized the effects of progressive tax policy reforms in a European nation, revealing their success in achieving social objectives but acknowledging the potential for tax avoidance behaviors among high-income individuals. Choi and Kim's (2020) analysis in South Korea mirrored the significance of streamlined tax codes and reduced exemptions, emphasizing that effective communication and taxpayer education were pivotal in ensuring compliance with reformed policies.

Fjeldstad *et al.* (2014) explored the impact of comprehensive tax policy reforms in African countries, emphasizing that adjustments to tax rates and bases could augment revenue collection. Nonetheless, they stressed the necessity of addressing administrative hurdles and promoting taxpayer education for the reforms to be effective. Munyoro's (2017) investigation in a developing country context highlighted the positive influence of e-tax policy reforms on revenue collection, specifically noting the benefits of electronic tax systems in reducing compliance costs and improving tax administration efficiency.

Mugabi *et al.* (2018) delved into East African countries, affirming that tax policy reforms, particularly those simplifying codes and rates, positively impacted revenue collection. However, they recommended intensified efforts in taxpayer education and communication. Finally, Devarajan and Kanbur's (2016) research in South Africa echoed similar sentiments on progressive tax policy reforms, highlighting the need for policymakers to strike a balance between social objectives and potential taxpayer responses.

In 1997, it also established the Rwanda Revenue Authority (RRA), which is a semi-autonomous revenue authority that is responsible for revenue collection and enforcement. Since 2000, Vision 2020 has provided Rwanda with a strong impetus to improve its capacity

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to mobilize domestic resources. Many of the reforms have helped the tax system align with the objectives of Vision 2020, including macroeconomic stability and reduced dependence on foreign assistance. Tax policy reforms since the early 2000s have focused on widening the tax base, including the establishment of a Value-Added Tax (VAT) in 2001, as well as encouraging foreign direct investment and strengthening revenue collection performance. In 2000, Rwanda also began to roll-out its National Decentralization Policy, which involved fiscal decentralization.As part of this process, Rwanda began to channel resources collected through local tax sources, such as taxes on property, directly to districts.

Technological Tax Reforms

Digitalization of the tax system has been a concern for many countries. Recently, the use of information technology (IT) has grown extensively and can be categorized by the applications and target users. The E-tax system is among the major technological tax reforms introduced by many countries. This is a web-based system that enables taxpayers to file returns online, and more importantly make payments online for customers whose banks support the system (Kipkemoi, 2015).In Kenya, it is I-tax and operationalized through a Common Cash Receipting System (CCRS (Gichugi, 2015) while in Rwanda it is called an e-tax system (RRA, 2016). All these tax systems are operationalized by the internet and are online platforms that enable one to register file tax returns, process payments, and make status inquiries in real-time. Commercial banks are integrated into the system, and a service level agreement is entered into to govern the relationship. To improve revenue collection performance, the Rwanda Revenue Authority (RRA), decided to opt for an electronic tax management system in 2013 which includes e payment, e-filling, and electronic tax education to improve on revenue collection in the country and these tax reforms include the Electronic Billing Machines (EBM), online declaration and payment and online tax registration (RRA, 2016).Recently, several studies were undertaken to establish the linkage between technological tax reforms on revenue collection performance.

Ndayisenga and Shukla (2016) found out that both electronic tax management system which consists of Tax Payment System, Mobile Tax Payment System and electronic Billing Machine System contributes to timely tax payment and reduced operational cost for both RRA staffs and clients. According to RRA (2014) before the introduction of EBM, revenue collection using e-filing and e-payment was low and tax administration weak and this made the revenue collection authority fail to meet the targets. But after the introduction as revealed by IMF (2014) the use of EBM has made a considerable contribution across the country in terms of raising the numbers of taxpayers and increasing revenue collection.

Similarly, research in Zimbabwe by Munyoro and Muturi (2020) and Ajibolade's (2017) investigation in Nigeria highlighted the transformative impact of e-taxation and electronic payment systems, respectively, on revenue collection performance. Both studies showcased the positive influence of these reforms on simplifying tax processes and minimizing non-compliance, indicating the potential for such reforms to significantly enhance revenue collection efficiency. Moreover, Kim and Choi's (2019) longitudinal study in South Korea and Chomba and Ngigi's (2019) research in Kenya both supported the positive correlation between the adoption of e-filing systems and improved revenue collection. These studies underscored the role of technological tax reforms, like e-filing adoption, in fostering compliance and reducing tax evasion, offering valuable insights for policymakers considering similar reforms.

Theoretical review

This study was founded on the Economic Deterrence Theory, the Allingham and Sandmo Theory, and the Fiscal Psychology Models and the relevance of each theory to the study

Economic Deterrence Theory

Economic Deterrence Theory was developed by Becker (1960). The Economic Deterrence Theory suggests that taxpayers' behaviors are influenced by the tax rate determining the benefits of tax evasion, and the probability of detection and penalties for fraud which determine the costs and the taxpayers try to maximize the benefit associated with tax evasion, through playing the audit lottery(Trivedi & Shehata, 2005). The probability of detection for audit, coupled with the consequences either encourages or deters taxpayers. This implies that if detection is likely and penalties are severe, taxpayers finally make a choice of the alternative which maximizes their economic benefit, hereby discussed as an after-tax return. Hence, few taxpayers will evade. Cuccia (1994) reported that for taxpayers, increasing audit visits, interest and penalties would affect their compliance levels.

The Economic Deterrence Theory is highly relevant to the current study on the impact of tax reforms on revenue collection performance. The theory offers a crucial framework for understanding taxpayers' behaviors, particularly in relation to tax evasion and compliance. The Economic Deterrence Theory provides a robust foundation for understanding how SMEs respond to tax policy reforms and how revenue collection performance can be influenced. It emphasizes the role of tax rates, detection probabilities, penalties, and psychological factors in shaping taxpayers' decisions. This theory offers valuable insights for policymakers and tax authorities seeking to design effective tax reforms and enforcement strategies that encourage compliance among small taxpayers.

The Allingham and Sandmo Model

Taxpayers' non-compliance was presented by Allingham and Sandmo (1972) is known as the A-S model is based on expected utility maximization schemes by the taxpayers. Trivedi and Shehata (2005) explained that taxpayers be utility maximizers in decisions of tax reporting and compliance, that is, taxpayers viewed tax evasion as worthwhile if the financial gains purely outweighed the financial costs (penalties). Likewise,the taxpayer is likely to break the law unless anticipated legal penalties (deterrence) exceeded the additional earnings that could be made by evading tax. The theories suggest that taxpayers' behavior is influenced by economic motives such as profit maximization and the probability of detection based on the chances of audits and penalties as a solution to compliance problems.

The Allingham and Sandmo (A-S) Model provides valuable insights into taxpayers' non-compliance behavior and how it relates to the current study on revenue collection performance and tax reforms. This model is based on expected utility maximization by taxpayers and is particularly relevant to understanding the economic motives behind tax evasion. The Allingham and Sandmo Model provides a theoretical foundation for understanding taxpayers' compliance behavior, which is central to the study's examination of revenue collection performance and the impact of tax reforms. The model emphasizes the importance of deterrence, the cost of compliance, transactional costs, and government intervention in influencing taxpayers' decisions. It underscores the significance of designing tax policies and reforms that align with taxpayers' utility-maximizing behavior to enhance revenue collection performance.

Fiscal Exchange Theory

The theory was developed by Alm in 1995. This concept theory is based on the assumption that taxpayers have separate views concerning looking after their self-interest as opposed to contributing to community interests. In this regard, the more positive a taxpayer's attitude towards paying tax and working with the tax authorities, the greater their willingness to pay tax. The fiscal exchange theory suggests that the presence of government expenditures may motivate compliance and that governments can increase compliance by providing goods that citizens demand in a more efficient and accessible manner (Moore,2004).Individuals may pay taxes because they value the goods provided by the government, recognizing that their payments are necessary both to help finance the goods and services and to get others to contribute. The existence of positive benefits may increase the probability that taxpayers will comply voluntarily, without direct coercion. Although most taxpayers cannot assess the exact value of what they receive in return for taxes paid, it can be argued that they have general impressions and attitudes concerning their own and others' terms of trade with the government. The Fiscal Exchange Theory is relevant to the current study on the impact of tax reforms on revenue collection performance. This theory posits that taxpayers' attitudes and willingness to pay taxes are influenced by their perception of receiving benefits or goods from the government in return for their tax payments. This theory provides a theoretical framework that helps explain the relationship between tax reforms and revenue collection performance. The positive attitudes and perceptions of taxpayers toward tax policy reforms, administrative tax reforms, and technological tax reforms, as observed in the study, align with the theory's premise that perceived benefits from tax payments can motivate compliance. This theory underscores the importance of governments providing efficient and accessible goods and services to enhance compliance, which is in line with the study's recommendations for policymakers to align tax reforms with taxpayer preferences and invest in improving tax administration.

3. Research methodology

The study adopted a descriptive survey design to provide a detailed understanding of how tax reforms affected revenue collection. It involved detailed descriptions of tax reforms' influence on revenue collection and identified causal relationships between various tax reforms and revenue performance.

The study population consisted of 90 employees from the audit departments at RRA, selected for their role in enforcing legislative frameworks concerning government revenue. Due to the large population size, a sample of 74 respondents was chosen using the Yamane formula, allowing cost-effective estimation without surveying every member of the population. Purposive sampling was employed, specifically including individuals relevant to the study's variables, ensuring targeted information collection.

Both primary and secondary data sources were utilized, with primary data collected through questionnaires and key informant interviews. Secondary data were obtained through a documentary review process.

The research instruments were tested for validity and reliability. Questionnaires, as a primary data collection method, were designed to align with the research objectives, utilizing a mix of close-ended and open-ended questions, primarily based on a Likert scale. Documentary review supplemented the primary data collection process, enhancing the depth of information acquired. For reliability, the Cronbach's alpha values for various variables were calculated, all surpassing the acceptable threshold of 0.7, indicating strong internal consistency. Editing, coding, and tabulation processes were employed to ensure data quality, consistency, and organization.

Data analysis involved Statistical Package for Social Science (SPSS V 21.0) for quantitative analysis. Descriptive statistics like frequencies, percentages, mean scores, and standard deviation were employed. Inferential statistics, including Pearson correlation analysis and multiple regression analysis, were conducted to establish relationships between tax reforms and revenue collection performance. Ethical considerations were a priority, ensuring confidentiality by avoiding the disclosure of respondents' identities and maintaining strict confidentiality of sensitive information throughout the study.

4. Findings

This chapter delves into the study's findings and provide their interpretation, drawing from the analysis of the data gathered through questionnaires. The study scrutinizes the influence of each tax reform on revenue collection performance, employing correlation analysis to unveil the associations between tax reforms and revenue collection performance. Additionally, regression analysis is leveraged to elucidate both the individual and collective impacts of these tax reforms on revenue collection performance at RRA headquarters.

Correlation analysis Results

The correlation matrix presented below provides valuable insights into the complex interrelationships among revenue collection, tax policy reforms, administrative tax reforms, and technological tax reforms. This matrix quantifies both the strength and direction of the connections between these crucial variables, offering a clearer understanding of their interconnected nature.

Table 1: Correlation Matrix Results

Variables		Revenue collection	Tax policy reforms	Administrative tax reforms	Technological tax reforms
Revenue collection	Correlation	1			
	Sig. (2-tailed)				
	N	74			
Tax policy reforms	Correlation	.518**	1		
	Sig. (2-tailed)	.009			
	N	74	74		
Administrative tax reforms	Correlation	.667**	.323*	1	
	Sig. (2-tailed)	.002	.016		
	N	74	74	74	
Technological tax reforms	Correlation	.621**	.331**	.454**	1
	Sig. (2-tailed)	.001	.014	.000	
	N	74	74	74	74

***** Significance at 0.05 level (2-tailed)***

The correlation matrix results in Table 1 provide valuable insights into the relationships among the variables: Revenue collection, Tax policy reforms, Administrative tax reforms, and Technological tax reforms. The correlation coefficient between Revenue collection and Tax policy reforms is 0.518, which is a moderately strong positive correlation. The p-value associated with this correlation is 0.009, indicating statistical significance at the 0.05 level (2-tailed). This suggests that there is a significant and positive relationship between revenue collection performance and the implementation of tax policy reforms. In other words, as tax policy reforms increase, revenue collection tends to improve.

Furthermore, the correlation coefficient between Revenue collection and Administrative tax reforms is 0.667, indicating a strong positive correlation. The p-value for this correlation is 0.002, showing statistical significance at the 0.05 level (2-tailed). This suggests a robust and positive relationship between revenue collection performance and the implementation of administrative tax reforms. It implies that as administrative tax reforms are put into effect, revenue collection performance tends to increase significantly.

Finally, the correlation coefficient between Revenue collection and Technological tax reforms is 0.621, indicating a strong positive correlation. The p-value for this correlation is 0.001, demonstrating statistical significance at the 0.05 level (2-tailed). This reveals a substantial and positive relationship between revenue collection performance and the implementation of technological tax reforms. In essence, as technological tax reforms are adopted, revenue collection performance is likely to see a notable improvement.

These results collectively suggest that all three types of reforms Tax policy reforms, Administrative tax reforms, and Technological tax reforms are positively associated with enhanced revenue collection performance. This reinforces the notion that a comprehensive approach encompassing various reform measures can contribute significantly to improving revenue collection efficiency and effectiveness. Policymakers and tax authorities can use these findings to guide their reform strategies and prioritize measures that promote better revenue collection outcomes.

Regression Analysis

The study also wanted to establish the relationship between tax reforms and revenue collection performance at RRA Headquarters. Multiple regression analysis was used to identify the coefficient of model, the analysis of variance (ANOVA) of the model, The section also presents the coefficient of correlation and the coefficient of determination.

Table 2: Model summary

Model	R	R square	Adjusted R square	Std. Error	Sign.
1	.6294 (a)	.6738	.493	0.9803	.000

a. Predictors: (Constant), tax policy reforms, technological tax reforms, administrative tax reforms
b. Dependent variable: Revenue collection performance

Table 2 shows that the coefficient of correlation (R) was found to be R = 0.6294. This implies that there was a positive and moderate correlation between tax reforms and revenue collection performance at RRA Headquarters. Moreover, the R^2 (coefficient of determination) represented the measure of variability in the revenue collection performance. From the model, ($R^2 = 0.6738$) shows that tax reforms account for 67.38% of the variation in revenue collection performance. This implies that, while keeping other factors constant, the adopted tax reforms explained the most of the share in the revenue collection performance under study. However, the remaining 32.62% of the revenue collection performance is accounted for by other factors not included in the model.

Table 3: Analysis of variance

Model		Sum of squares	Df	F	Sign.
1	Regression	12.648	1	13.159	.000 (b)
	Residual	227.799	11		
	Total	240.447	12		

a. Predictors: (Constant), Tax policy reforms, technological tax reforms, administrative tax reforms
b. Dependent variable: Revenue collection performance

The ANOVA analysis presented in Table 3 provides important insights into the impact of tax reforms on Revenue collection performance and was used to test whether the model could significantly fit in predicting the outcome of the study. The F-statistic (F) of 13.159 tests the overall significance of the regression model. A low p-value (close to zero) associated with this statistic indicates that the model is highly significant. In this case, the p-value is ".000 (b)," confirming the statistical significance of the model. These results suggest that the combination of Tax policy reforms, technological tax reforms, and administrative tax reforms has a statistically significant impact on Revenue collection performance. This underscores the importance of implementing comprehensive tax reform strategies that encompass various aspects of tax policy, administration, and technology to enhance revenue collection efficiency and effectiveness.

Table 4: Model coefficients

Independent variables	Coefficients			
	B	t.	p	Std. Error
(Constant)	.287	1.287	.172	.145
Tax policy reforms	.324	2.12	.039	1.33
Administrative tax reforms	.331	2.74	.008	1.27
Technological tax reforms	.415	2.43	.019	1.63

a. Predictors: (Constant),tax policy reforms, technological tax reforms, administrative tax reforms
b. Dependent variable: Revenue collection performance

The results presented in Table 4 provide the results of the regression analysis that examined the coefficients of tax policy reforms, administrative tax reforms, and technological tax reforms as independent variables and their relationship with revenue collection performance as the dependent variable. The findings reveal several important implications for tax policy and administration.Based on the results, the equation of regression resulted to:

$$\mathbf{Y= 0.287+0.324X_1+ 0.331X_2+ 0.415X3 + 0.649X_4}$$

First, the positive coefficient for tax policy reforms (0.324) suggests that these reforms have a significant positive effect on revenue collection performance. This implies that as tax policy reforms are implemented, revenue collection tends to improve. These findings align with the positive perceptions of respondents in the study who believed that tax policy reforms, such as changes in tax rates and incentives, have enhanced revenue collection. Policymakers may take this as evidence that well-designed tax policy reforms can contribute to revenue growth.

Second, the coefficient for administrative tax reforms (0.331) also indicates a significant positive impact on revenue collection performance. This result highlights the importance of administrative measures, such as simplifying tax filing requirements and enhancing tax audit processes, in improving revenue collection efficiency. It reinforces the positive views expressed by respondents regarding the impact of administrative tax reforms. Tax authorities may consider further investments in administrative reforms to strengthen compliance and revenue collection.

Third, the coefficient for technological tax reforms (0.415) demonstrates a statistically significant positive relationship with revenue collection performance. This finding underscores the effectiveness of adopting digital tools and electronic systems in tax administration. Technological reforms, including electronic filing and mobile tax payment platforms, have the potential to streamline processes, reduce tax evasion, and enhance revenue collection accuracy. These results align with the literature on the positive impact of technological tax reforms on revenue collection.

This implies that tax policy reforms, administrative tax reforms, and technological tax reforms all play pivotal roles in improving revenue collection performance at RRA Headquarters. The positive coefficients and statistical significance of these variables emphasize their importance in enhancing revenue collection. Policymakers and tax authorities can use these findings as evidence to support the implementation of comprehensive tax reform strategies that encompass policy, administrative, and technological aspects to optimize revenue collection performance. Findings agree with Bjork (2013) who found that effective implementation of tax reforms improved revenue collection performance and reduced non- compliance which translated to more revenue collection. The findings also agreed with that of Kanyinga (2016) who found that tax reforms positively and significantly affected revenue collection performance.

5. Conclusion

Overall, the findings of this study underscore the critical role that comprehensive tax reforms play in shaping revenue collection performance at the Rwanda Revenue Authority (RRA) Headquarters. By implementing reforms that encompass tax policy, administration, and technology, RRA and other tax authorities optimized revenue collection efficiency and effectiveness. These reforms should be tailored to align with taxpayer preferences and behaviors, fostering compliance and revenue growth.

6. Recommendations

Based on the findings of this study, key recommendations are made to enhance revenue collection performance at the Rwanda Revenue Authority (RRA) Headquarters and potentially inform tax reform efforts in other contexts:

- RRA should continue to pursue comprehensive tax reforms that encompass tax policy, administrative, and technological aspects. A holistic approach to reform can lead to significant improvements in revenue collection efficiency and effectiveness.
- RRA should invest in the training and development of tax officials to ensure they are well-equipped to implement and manage tax reforms effectively.

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