



**FACTORS INFLUENCING IMPLEMENTATION AND ADMINISTRATION OF WITHHOLDING TAXES IN RWANDA.  
A CASE STUDY OF RWANDA REVENUE AUTHORITY (2018-2020)**

**Murwanashyaka Gakumba Charles & Dr. Twesigye Daniel, PhD**

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<sup>1</sup> Murwanashyaka, G. C., & <sup>2</sup> Twesigye, D.

<sup>1</sup> Master of Taxation Student, Ines-Ruhengeri, Rwanda

<sup>2</sup> Lecturer, INES- Ruhengeri

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**ABSTRACT**

*The objective of the study was to assess the factors influencing implementation and administration of withholding taxes by the Rwanda Revenue Authority. RRA has faced numerous problems and challenges with its withholding tax system. It was in the backdrop of these challenges that facilitated the researcher to establish effective withholding taxes as a tool of enhancing revenue collection in Rwanda. a case study of Rwanda Revenue Authority (2018-2020). To provide the basis of the study, the researcher relied on the following theories and model: human capital theory, equal sacrifice theory and theory of planned behavior. A descriptive research design was adopted for the study and the target population was all 73 RRA employees in Kigali province domestic tax division. Census approach was adopted. Data was collected from both primary and secondary data using questionnaires and documentation. Data collected was analyzed using 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. Regression analysis was used to evaluate the degree of the contribution of indirect taxes on revenue collection in Rwanda and the findings presented in tables and graphs. Starting with the significant factors, the variable "Tax Policy and Regulations" demonstrated a positive and statistically significant influence on withholding tax collection (Beta = 0.374,  $p < 0.001$ ). Similarly, "Tax Administration and Enforcement" also showed a positive and significant relationship with withholding tax collection (Beta = 0.230,  $p < 0.001$ ). On the other hand, "Taxpayer Compliance rate" exhibited a positive relationship with withholding tax collection, albeit with a smaller standardized coefficient (Beta = 0.444,  $p = 0.009$ ). Interestingly, "Taxpayer Education and Awareness" did not show a significant relationship with withholding tax collection (Beta = 0.009,  $p = 0.893$ ). The regression analysis revealed that tax policy and regulations, tax administration and enforcement, and taxpayer compliance rate are significant factors influencing withholding tax collection, in line with the literature. However, the role of taxpayer education and awareness, while theoretically important, did not emerge as a significant factor in this particular study. This suggested that policymakers and tax authorities should focus on strengthening legal provisions, improving administrative efficiency, and enhancing taxpayer compliance to boost withholding tax collection in the given context. The study also recommended that Rwanda Revenue Authority develop strategies to increase the*

number of taxpayers who embrace the eTax system through training and marketing. They need to embark on public sensitization to improve tax knowledge and efficient awareness on withholding tax.

**Keywords:** Withholding Tax, Tax Revenue collection, Rwanda Revenue Authority

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## INTRODUCTION

Since medieval times, political authorities have leveraged their power to generate revenue for government operations, primarily through taxation. The tax systems employed vary significantly from one government to another, with particular emphasis on the tax withholding system (Besci, 2016). However, Bloomquist and Jog (2018) proposes the establishment of a universally accepted 10% final withholding tax on all payments that erode the tax base for non-residents, along with standardized exemptions for recipients registered for taxation under a net taxation scheme, and potentially, additional exemptions for payments related to employment or inputs beyond the digital economy. A withholding tax system, as outlined by IBFD (2015), places the responsibility on income payers to deduct taxes directly from payments owed to specific recipients and subsequently remit the deducted tax.

From a global perspective, considering the United States as an example certain type of income known as Fixed or Determinable Annual or Periodical Gains, Profits, and income (FDAP income) are typically subject to a 30% withholding tax on a gross basis (Levent, 2017). It's worth noting, however, that a significant portion of FDAP income and similar types of income can be exempt from this withholding tax or may be subject to a reduced tax rate as specified in the Internal Revenue Code or a bilateral income tax treaty, such as the US Model Treaty from 2016 (Bird & Zolt, 2019). According to a report by Deloitte in 2019, the withholding tax rates in the US can vary, with domestic rates applying to

payments made to non-resident companies. These rates may potentially be reduced under the provisions of an applicable tax treaty (Deloitte, 2019).

The standardization of taxation systems and the establishment of a uniform withholding tax rate across different revenue sources in Europe have encountered considerable obstacles and achieved only modest progress (Bhattacharya & Buettner, 2018). Nevertheless, many European nations, including Austria and Portugal, have employed an alternative strategy by leveraging tax receipt data derived from wage withholding tax and income tax statistics, incorporating various modifications throughout the procedure (Wilson & Taylor, 2016; Pereira, 2018). The purpose of wage withholding tax is to closely resemble the final income tax burden for individuals who earn wages. However, it is important to note that there are situations in which modifications are required in order to ensure appropriate evaluations of income tax, as the original withholding of wage tax may not be totally right (Janský & Palanský, 2017). These modifications are primarily relevant to individuals who earn wages, and in specified instances, the net adjustment value is subtracted from the overall reported wage tax. As a result, the amount of personal income tax is subsequently adjusted. Furthermore, it is worth noting that wage tax can also encompass social benefits and old-age pensions, necessitating modifications to the documented wage tax in such instances (Oliveira, 2020).

According to a report by KPMG International in 2013, the establishment of a seamless trade and money flow in Asia necessitates the removal of withholding taxes. The aforementioned point was acknowledged in the Blueprint, which also highlights the need to improve the withholding tax framework in order to facilitate the expansion of investor participation in ASEAN debt issuance. Moreover, the withholding taxes imposed within the region exhibit greater rates compared to the withholding taxes levied under bilateral agreements with external parties. Asian nations utilize withholding taxes as a viable mechanism for revenue collection owing to various factors. Initially, it can be observed that the administration of withholding taxes is rather straightforward, as it assigns the responsibility of payment to the payer rather than the recipient. Furthermore, it has been argued that they play a crucial role in mitigating tax evasion and enhancing transparency, particularly in jurisdictions where adhering to tax regulations is particularly difficult (Bahl & Martinez-Vazquez, 2019).

Slemrod and Wilson (2019) conducted a comparative study of withholding tax regimes in African countries and identified variations in tax rates and administration practices, highlighting the need for harmonization and standardization. As per the PKF (2018/2019) Africa Tax Guide, withholding tax rates differ across African countries and are contingent upon the nature of income (Osei-Bryson & Abdul-Jabbar, 2020). For instance, in Algeria, a 15% dividend withholding tax is levied on dividends disbursed from Algerian sources to both resident and non-resident individuals and legal entities, with consideration to the application of any applicable double tax treaties (Bouazza, 2020). In the case of Ghana, various service categories are subject to 8% withholding tax rate (Aboagye & Andoh, 2018).

In Kenya, individuals or entities responsible for making certain payments to specific recipients are required to withhold taxes at the source and remit these deducted taxes to the Commissioner by the 20th day of the subsequent month. The tax rates

vary, ranging from 3% to 30%, and this applies to both residents and non-residents in Kenya. Musau (2018) clarifies that withholding tax isn't an additional tax but a prepayment of taxes on the recipient's income. When withholding tax isn't considered the final tax, it can be claimed by the payee, whether they are a resident or non-resident in Kenya. Withholding tax is typically applicable to income categories such as royalties, rents, dividends, and interest. The Cabinet Secretary of Finance holds the authority to broaden its scope to encompass other payment types and specify the corresponding rates. Consequently, withholding tax has been extended to cover various income sources, including consultancy fees, technical fees, management fees, director's fees, building construction, and contract supplies (Kamau & Nyambura, 2017). It's important to note that the withholding tax system aims to collect taxes that might otherwise be lost due to tax evasion and avoidance. However, it's crucial to understand that transactions that are not normally subject to taxation in Kenya are also exempt from withholding tax.

In Uganda, Ugandan Revenue Authority (2014), showed that persons who are required to withhold the tax and the persons from whom the tax is withheld. This depends on the nature and the circumstances of the transaction and also the type of income for instance, 10% should be withheld by resident persons who purchase assets from non-resident persons. Mugisha (2019) further opined that the tax withheld is held by a withholding agent in trust for the Government of Uganda. It is therefore not subject to attachment in respect of a personal debt or liability of the agent and it does not form part of the estate of the agent in event of liquidation or bankruptcy and the Commissioner shall have a first claim before any distribution of property is made. Mwakanyamale et al. (2018) found that improving the administration of withholding taxes in Tanzania resulted in a significant increase in revenue collection,

demonstrating the potential impact of efficient tax systems.

Closer home in Rwanda, PKF (2018/2019), Africa Tax Guide, further shows that 15% withholding tax is levied on dividends, interest, royalties and technical and management fees paid by resident entities including tax-exempt entities while employment income is taxed a withholding tax basis at a graduating scale of 0% to 30%. In South Sudan domestic dividends are subject to a 10% final withholding tax while non-resident companies are subject to a 20% final withholding tax rate. Finally, in Tanzania, the 10% domestic withholding tax rate for dividends applies unless the tax treaty rate is lower, Tanzania tax authority also levies a 15% withholding tax on technical services rendered by a South African resident company without a permanent establishment in Tanzania.

In Rwanda a withholding tax of 15% of the total amount, excluding VAT, is required to be accounted for on payments or other methods of extinguishing an obligation made by resident individuals, including tax-exempt entities. The WHT is due where such payments or other methods of extinguishing an obligation are made to a person not registered with the tax administration or to a registered person who does not have recent income tax declaration. According to Torgler and Schneider (2009), withholding taxes play a pivotal role in broadening the tax base and reducing tax evasion. By obligating businesses and individuals to deduct and remit a portion of payments to the tax authorities, withholding taxes ensure a constant inflow of revenue. One of the key strategies has been the enhancement of withholding taxes. In a study by Nkundabanyanga et al. (2017), it was found that Rwanda has progressively expanded the scope of withholding taxes to cover various income streams, including cross-border transactions.

While the potential benefits of withholding taxes are evident, challenges persist in Rwanda's implementation. Compliance issues, administrative capacity constraints, and a lack of awareness among taxpayers have been identified as barriers to

effective withholding tax collection (Nyirabikali, 2018). However, these challenges also present opportunities for improvement through policy adjustments and capacity-building initiatives.

### **Problem Statement**

Various scholarly studies have presented diverse viewpoints on the implementation of withholding tax systems on a worldwide scale. For instance, Anderson and Lee (2020) conducted an analysis on the withholding tax regime pertaining to financial capital income within the context of the global economy. Chen and Wang (2021) advocated improvements to China's withholding tax system when comparing it to other economies. According to ICPAR (2019), the withholding tax system offers several advantages. These include a reduction in collection costs, expedited remittance to the Government, enabling it to promptly allocate funds for its programmes throughout the year, and mitigating the necessity of accumulating a substantial payment in June annually. The institute additionally observes that the implementation of withholding has been shown to enhance compliance while reducing instances of evasion and underpayment. This is attributed to the phenomenon wherein individuals may not fully perceive the extent of their tax obligations inside a withholding system, leading to a less sense of resentment. If the withholding tax system were optimized, it would result in less tax evasion, enhanced revenue collection, and improved taxpayer compliance.

The withholding tax system has however been faced with challenges overtime. Though withholding tax is an advance payment, Nyirabahire (2017) recorded that some uninformed tax payers do not appreciate this fact and they still consider it as an additional tax burden. To some taxpayers, withholding tax tends to impose a constraint on the cash flow and profit, especially where delays in generating withholding tax certificates occur, which invariably affects organizational activities. Rwanda Revenue Authority has faced various challenges with its withholding tax system that are not limited



to taxpayer compliance, complex tax laws, administrative capacity issues, the presence of the informal economy, tax evasion and avoidance, lack of taxpayer awareness, and double taxation issues. Despite the legal framework in place, many taxpayers attempt to evade withholding tax obligations, resulting in revenue leakages. Rwanda's tax laws and regulations can be complex and confusing, making it challenging for businesses and individuals to understand their withholding tax obligations (Mugisha, 2019). This complexity can lead to inadvertent non-compliance. Rwanda faces challenges related to the capacity of tax authorities to adequately enforce withholding tax regulations (Musabyimana, 2018). This includes issues with staff training and resource allocation.

A significant portion of economic activities in Rwanda occurs in the informal sector. This sector often operates outside the tax net, making it difficult to implement withholding taxes effectively (Ngabonziza, 2020). Some businesses and individuals in Rwanda employ tax evasion and avoidance schemes to reduce their withholding tax liability (Nkurunziza, 2016). These schemes can be challenging to detect and prevent. Many taxpayers in Rwanda are unaware of their withholding tax obligations (Mukamana, 2018). This lack of awareness can lead to unintentional non-compliance. Rwanda's tax treaties and agreements with other countries can result in double taxation, which can be a barrier to effective withholding tax implementation (RRA, 2020). Despite the crucial role that withholding tax plays in revenue collection and the problems facing withholding tax system in Rwanda, research on withholding tax system and its performance in the country is still at the infancy stage; hence this study contributed in this withholding tax system discussions.

### **Research Objective**

To assess the factors influencing implementation and administration of withholding taxes by the Rwanda Revenue Authority.

## **LITERATURE REVIEW**

### **Human Capital Theory**

Schultz (1961) introduced the concept of human capital theory. According to Bohlander et al. (2011), the concept of human capital refers to the economic value that individuals provide to an organization through their knowledge, skills, and capacities. Therefore, human capital development refers to any endeavor that enhances the proficiency and competence of an employee. Training serves as a fundamental process via which human capital is cultivated. According to Psacharopoulos and Patrinos (2018), human capital refers to the information and training that an employee acquires, which enhances their ability to carry out economically valuable activities.

The human capital theory has faced criticism from several authors due to its perceived oversimplification in assessing staff productivity. These critics contend that organizational productivity cannot solely rely on education, but rather necessitates the incorporation of additional characteristics. Hanushek and Woessmann (2015) have highlighted the tendency of economists and other social scientists to overestimate the benefits derived from higher levels of education, while simultaneously neglecting the significance of complementary factors such as training, contractual arrangements, and management strategies. These additional elements are essential for education to effectively enhance productivity.

Bassi and McMurrer (2016) did a comprehensive literature analysis to ascertain the effects of investment on the development of human capital at the organizational level in European nations. Their findings indicate a growing body of research that supports the notion that training initiatives yield significant benefits for employers. Several recent publications have shown solid evidence linking training investment to changes in productivity, profitability, and stock market performance.

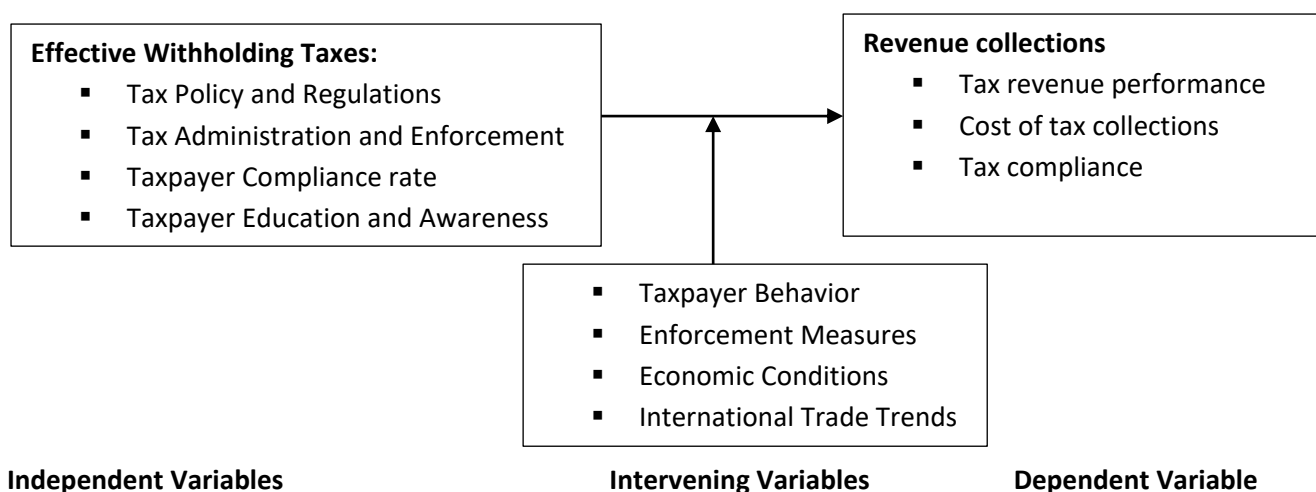
The idea of this research is closely connected to the human resource capacity of officials from the

Rwanda Revenue Authority (RRA) in Kigali province, specifically in relation to their administration of the withholding tax system. The successful execution of tasks and obligations related to the withholding tax system by RRA officials can be achieved through the provision of training and the enhancement of their abilities. Employee training, as a crucial component of human resource capacity, plays a vital role in fostering employee motivation and enhancing their ability to effectively carry out their designated responsibilities. It is imperative to provide ongoing training to staff within the tax department to ensure their familiarity with the dynamic nature of withholding tax laws. Additionally, it is crucial for these employees to possess a comprehensive understanding of withholding tax regulations specific to Rwanda. The concept of withholding tax is an integral component of direct taxes levied on income, serving to diminish the total responsibility for income tax as stated in the yearly declaration. The legal framework encompasses three distinct categories of withholding tax: a 15% withholding tax applicable to various payments made by resident people or businesses, including those that are tax-exempt; a 3% withholding tax imposed on payments made by Public Institutions; and a 5% withholding tax levied on imports. The initial two payments are remunerated by the withholding

agent within a period of 15 days subsequent to the conclusion of the month in which the payments were executed. Conversely, the last payment is rendered at the customs office prior to the release of goods.

### Conceptual Framework

Conceptual framework is a scheme of variables which the study operationalizes in order to achieve the set objectives. A variable being the measurable characteristic that assumes different values among the subjects, independent variables are the ones that the study manipulates in order to determine their effects on another variable. However, it is crucial that one remains skeptical about the validity and reliability of these variables (Mugenda & Mugenda, 2013). The independent variables are grouped towards a more holistic theory after review of relevant theoretical and empirical literature and the study of the existing models related to research findings. Independent variable is the presumed cause of changes in the values of the dependent variable; the dependent variable is expected to be influenced by the independent variable. This is illustrated in figure 1 below: The independent variable in this study is to analyze the effects of withholding taxes on collections of revenues in Rwanda.



**Figure 1: Conceptual Framework**

Source: **Researcher, 2023**

## METHODOLOGY

A research design defines how a study achieves its goals (Babbie, 2015). The study's findings and conclusion were based on descriptive research. Descriptive study design collects data using interviews or questionnaires, according to Orodho (2013). Descriptive analysis identified important variables at any given time (Saldana, 2015). Diagnostic research studies determine frequency or association, while descriptive research studies describe the features of an individual or group (Kothari, 2014).

The benefits of descriptive research approach included understanding and helping a group with similar characteristics, such as withholding tax collection variables (Sekaran & Bougie, 2016). It also provided facts that simplified decision-making. Descriptive study design employs questions to characterise people and organisations, according to Bryman and Bell (2015). The study adopted descriptive research approach to better explain the relationship between independent variables (efficient withholding tax collection) and dependent variables (revenue production).

This research used secondary data. The RRA, World Bank, and NISR statistics bulletins provided most secondary data. Rwandan revenue collection from indirect taxes was assessed using statistical bulletins. Secondary data on Revenue collections was acquired from RRA publications, journals, World Bank, African Development Bank, and online libraries.

Rwanda Revenue Authority headquarters has 93 withholding tax employees. The tax vision for Kigali province included 93 RRA withholding tax employees in December 2022.

This study uses non-probability sampling. Non-probability sampling employs the researcher's judgement to select units (Mugenda and Mugenda, 2013). The census method was utilized to choose study participants. Effective withholding taxes can boost Rwandan revenue collection. Rwanda

Revenue Authority (2018)–2020 case study. No prejudice is used to choose responses.

The 2018–2020 study covered three years. Used census technique. Effective withholding taxes can boost Rwandan revenue collection. Rwanda Revenue Authority (2018)–2020 case study. No prejudice is used to choose responses. Data was analyzed using descriptive and inferential statistics like correlation analysis and multiple linear regression. SPSS was used to compute and analyse this study's data.

Withholding taxes were evaluated using descriptive statistics like mean, frequency, and standard deviation to improve Rwandan revenue collection. Rwanda Revenue Authority (2018)–2020 case study. No prejudice is used to choose responses.

To quantify the strength and closeness of the relationship between indirect taxes and tax revenue collection, correlation analysis was created. This calculates Rwanda's withholding tax-tax revenue connection.

Inferential analysis linked data to more general situations, while descriptive statistics described it. The study estimated a broad regression model.

Pearson correlation coefficient determined the amount and direction of dependent variable-independent variable relationships. The correlation coefficient is -1 to +1. A value of 0 indicates no relationship, +1 indicates that the two variables are perfectly correlated in a positive linear sense, increasing together, and -1 indicates that one variable increases as the other decreases (Kothari, 2012). Pearson's correlation coefficient determined the amount and direction of each independent variable's relationship with tax audit parameters on revenue collection. The correlation coefficient was initially calculated for each independent variable and the dependent variable without the moderating variable, as well as all independent variables and independent variables.



## RESULTS AND DISCUSSIONS

### Factors influencing implementation and administration of withholding taxes

The objective of the study was to assess the factors influencing implementation and administration of

withholding taxes by the Rwanda Revenue Authority. The summarizes findings related to various factors influencing the implementation and administration of withholding taxes, along with statistical measures such as mean and standard deviation.

**Table 1: Respondents views on factors influencing implementation and administration of withholding taxes**

Factors	1	2	3	4	5	Mean	Std Dev.
RRA has adequate resources, including trained personnel and technology infrastructure, to carry out withholding tax-related tasks effectively	3 3.6%	6 7.2%	12 14.5%	23 27.7%	39 47.0%	4.07	1.11
The legal and regulatory framework in Rwanda supports effective withholding tax implementation and administration	5 6.0%	3 3.6%	5 6.0%	22 26.5%	48 57.8%	4.27	1.13
Tax officers provide accurate advice on withholding tax matters	2 2.4%	4 4.8%	3 3.6%	23 27.7%	51 61.4%	4.41	.95
Technology and digital systems used by RRA for withholding tax administration are efficient and user-friendly	2 2.4%	2 2.4%	8 9.6%	25 30.1%	46 55.4%	4.34	.93
RRA continuously educates taxpayers to improve awareness on policies	2 2.4%	3 3.6%	14 16.9%	21 25.3%	43 51.8%	4.20	1.00
Rwanda Revenue Authority actively engages in international cooperation to address cross-border withholding tax issues	0 0.0%	0 0.0%	11 13.3%	22 26.5%	50 60.2%	4.47	.72
Continuous updates and improvements in withholding tax policies and procedures are a priority for the Rwanda Revenue Authority.	2 2.4%	2 2.4%	16 19.3%	22 26.5%	41 49.4%	4.18	.99
Withholding tax agents are selected based on knowledge and understanding of withholding tax matters	2 2.4%	2 2.4%	9 10.8%	27 32.5%	43 51.8%	4.29	.93
Withholding tax agents are continuously trained on emerging issues on withholding tax	3 3.6%	2 2.4%	11 13.3%	26 31.3%	41 49.4%	4.20	1.00
The clarity and simplicity of Rwanda's withholding tax regulations make it easy for businesses and individuals to understand and comply.	2 2.4%	2 2.4%	7 8.4%	26 31.3%	46 55.4%	4.35	.92
Rwanda Revenue Authority provides sufficient guidance and support to withholding agents regarding their tax obligations	0 0.0%	0 0.0%	4 4.8%	32 38.6%	47 56.6%	4.52	.59

Source: **Primary data**, (2023).

The findings from the table present a comprehensive view of respondents' perceptions regarding several critical factors impacting the implementation and administration of withholding taxes in Rwanda. Regarding the adequacy of resources within the Rwanda Revenue Authority

(RRA), opinions among respondents vary, suggesting that some consider the RRA to possess sufficient resources, including trained personnel and technology infrastructure, for effective withholding tax-related tasks. The mean score of 4.07 indicates a general tendency towards

agreement, but the standard deviation of 1.11 suggests notable variability in responses.

Similarly, the legal and regulatory framework in Rwanda receives positive feedback, with respondents generally agreeing (mean score of 4.27) that it supports the effective implementation and administration of withholding taxes. However, like the resource adequacy factor, there is some variation in responses as indicated by the standard deviation of 1.13.

Respondents express a high level of confidence in the accuracy of advice provided by tax officers on withholding tax matters, with a mean score of 4.41. This factor exhibits relatively low variability in responses, denoted by the low standard deviation of 0.95. The efficiency and user-friendliness of technology and digital systems used by RRA for withholding tax administration are well-received, as indicated by the mean score of 4.34. Again, the standard deviation of 0.93 suggests consistency in respondents' opinions.

While the Rwanda Revenue Authority's efforts to educate taxpayers and enhance awareness of policies receive a moderately positive assessment (mean score of 4.20), there is some variability in responses (standard deviation of 1.00). Respondents overwhelmingly agree (mean score of 4.47) that the RRA actively engages in international cooperation to address cross-border withholding tax issues. This factor exhibits relatively consistent responses, with a low standard deviation of 0.72.

Continuous updates and improvements in withholding tax policies and procedures are perceived as a priority by respondents, although there is some variability in their opinions (mean score of 4.18, standard deviation of 0.99). In terms of the selection and training of withholding tax agents, respondents generally believe that agents are selected based on their knowledge and understanding of withholding tax matters and receive continuous training on emerging issues (mean score of 4.29). The standard deviation of 0.93 indicates some consistency in responses.

The clarity and simplicity of Rwanda's withholding tax regulations are generally perceived positively by respondents (mean score of 4.35), with relatively low variability in their opinions. Lastly, respondents strongly agree (mean score of 4.52) that the Rwanda Revenue Authority provides sufficient guidance and support to withholding agents regarding their tax obligations. This factor displays low variability in responses, with a standard deviation of 0.59. In summary, this table offers a thorough insight into respondents' viewpoints on various aspects impacting the withholding tax implementation and administration in Rwanda. While the mean scores generally indicate positive perceptions, the standard deviations highlight the varying degrees of consensus among respondents. These findings can serve as valuable inputs for further analysis and policy enhancements in the realm of withholding taxes.

Bird and Zolt (2015) emphasize the importance of legislative clarity and tax policy design, indicating that ambiguous regulations can hinder enforcement efforts. Musgrave and Musgrave (2019) highlight the role of technological infrastructure in tax administration, as modern systems can streamline withholding tax processes. Additionally, Slemrod and Yitzhaki (2012) underscore taxpayer compliance behaviour as a crucial determinant, suggesting that perceptions of fairness, enforcement mechanisms, and the overall tax environment play pivotal roles in shaping compliance. In contrast, Torgler and Schneider (2019) contend that cultural factors and tax morale also exert substantial influence over the implementation of withholding taxes. These factors collectively underscore the intricate interplay between legal, technological, behavioural, and cultural aspects in shaping the successful administration of withholding taxes.

### **Correlation Analysis**

To assess the impact of withholding taxes on revenue collections in Rwanda, the researcher conducted a correlation analysis between various relevant variables. The analysis employed Pearson's R-value, which falls within the range of +1 to -1,

with an absolute value of  $r$  greater than or equal to 0.5 indicating a strong relationship between the variables. According to Mugenda and Mugenda (2013) correlation coefficient  $r$  ranges between +1 to -1, with +1 indicating a perfect positive

correlation, 0 indicating no correlation and -1 indicating a perfect negative correlation. If  $r$  is greater than 0.3 but less than 0.5, it signifies a moderate relationship, while values less than 0.3 indicate a weak relationship.

**Table 2: Correlation and the coefficient of determination**

	Revenue Collection	Tax Policy and Regulations	Tax Administration and Enforcement	Taxpayer Compliance rate	Taxpayer Education and Awareness
Revenue Collection (r) (p) Sig. (2 tailed)	1.000				
Tax Policy and Regulations (r) (p) (2 tailed)	0.596** 0.000	1.000			
Tax Administration and Enforcement (r) (p) Sig. (2 tailed)	0.487** 0.000	0.727** 0.000	1.000		
Taxpayer Compliance rate (r) (p) Sig. (2 tailed)	0.669** 0.000	0.545 0.067	0.638** 0.000	1.000	
Taxpayer Education and Awareness (r) (p) Sig. (2 tailed)	0.542* 0.000	0.861 0.035	0.125 0.0464	0.727** 0.000	1.000

Correlation is significant at the 0.05 level (2-tailed). \*  
Correlation is significant at the 0.01 level (2-tailed). \*\*

Source: **Primary data**, (2023).

Starting with the correlation between Revenue Collection and Tax Policy and Regulations, the coefficient of 0.596 with a significance level of  $p < 0.01$  indicates a strong positive relationship between these two variables. This aligns with the literature, which often highlights the importance of well-defined tax policies and regulations in positively influencing revenue collection (Bird & Gendron, 2017). When tax policies are clear and conducive to compliance, they can lead to improved revenue collection.

Next, Tax Administration and Enforcement show a positive correlation of 0.487 with Tax Policy and Regulations. This correlation, along with a significance level of  $p < 0.01$ , suggests that a well-regulated tax policy can support effective tax administration and enforcement. This finding resonates with the literature, which emphasizes that effective enforcement mechanisms are essential for successful tax collection (Torgler, 2013).

Moving on to Taxpayer Compliance Rate, it shows a positive correlation of 0.669 with Revenue Collection and 0.545 with Tax Policy and Regulations, both with significance levels of  $p < 0.01$ . This indicates that higher taxpayer compliance rates are associated with better revenue collection and well-defined tax policies. This finding is in line with previous research highlighting the importance of tax compliance in achieving revenue targets (Alm & Torgler, 2021).

Lastly, Taxpayer Education and Awareness exhibit a positive correlation of 0.542 with Revenue Collection, 0.861 with Tax Policy and Regulations, and 0.727 with Tax Administration and Enforcement, all with significance levels of  $p < 0.01$ . This suggests that informed and aware taxpayers tend to contribute positively to revenue collection efforts. The literature supports this notion, emphasizing that taxpayer education and awareness campaigns can enhance voluntary compliance (Torgler, 2017).

### Regression Analysis

Multiple linear regression analysis was applied to establish a causal relationship between independent (Tax Policy and Regulations, Tax Administration and Enforcement, Taxpayer Compliance rate Taxpayer Education and Awareness and dependent (withholding tax collection) variables (Hair et al., 2018). To determine the percentage of withholding tax collection which can be explained using the independent variables and the fitness of regression

in chapter three,  $R^2$  was determined. The analysis indicated there a strong positive relationship between factors and withholding tax collection since ( $r=0.391$ ) The analysis further showed an adjusted  $R^2$  of 0.153, which implied that factors (Tax Policy and Regulations, Tax Administration and Enforcement, Taxpayer Compliance rate Taxpayer Education and Awareness) can explain only 15.3% of withholding tax collection and therefore regression equation in chapter was fit in explaining withholding tax collection.

**Table 3: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	<b>.391<sup>a</sup></b>	<b>.153</b>	.138	.52980
a. Predictors: (Constant), Tax Policy and Regulations, Tax Administration and Enforcement, Taxpayer Compliance rate Taxpayer Education and Awareness				
b. Dependent Variable: Withholding tax collection				

Source: **Primary data**, (2023).

The ANOVA model showed ( $F \{4,79\} = 10.592$ ;  $p=0.001$ ), the analysis indicated that the model was statistically significant since  $p\text{-value}<0.05$  and hence regression equation was significant. Hence the

factors incorporated in this study significantly determines withholding tax collection. This indicates that at least one of the predictor variables significantly affects withholding tax collection.

**Table 4: ANOVA**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.865	4	2.973	10.592	.000b
	Residual	82.523	79	.281		
	Total	<b>97.389</b>	<b>83</b>			
a. Predictors: (Constant), Tax Policy and Regulations, Tax Administration and Enforcement, Taxpayer Compliance rate Taxpayer Education and Awareness						
b. Dependent Variable: Withholding tax collection						

Source: **Primary data**, (2023).

A regression coefficient was carried out in order to explain the nature and relationship between each independent variables and dependent variable.

From the Coefficients table above the regression model can be derived as follows:

$$Y = 0.595 + 0.407X_1 - 0.178X_2 - 0.040X_3 + 0.010X_4 + \epsilon$$

**Table 5: Regression coefficient Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	B	Std. Error	Beta			
1	(Constant)	<b>.595</b>	.376		1.583	.115
	Tax Policy and Regulations	<b>.407</b>	.087	.374	4.707	<b>.000</b>
	Tax Administration and Enforcement	<b>.359</b>	.240	.230	3.689	<b>.000</b>
	Taxpayer Compliance rate	<b>.224</b>	.009	.444	1.815	<b>.009</b>
	Taxpayer Education and Awareness	<b>.010</b>	.072	.009	.135	<b>.893</b>
a. Dependent Variable: Withholding tax Collection						

The table of findings presents the results of a regression analysis that sought to understand the factors influencing withholding tax collection, with "Withholding tax Collection" as the dependent variable. The unstandardized coefficients, standardized coefficients (Beta), t-values, and significance levels (Sig.) for each independent variable are reported in the table.

Starting with the significant factors, the variable "Tax Policy and Regulations" demonstrated a positive and statistically significant influence on withholding tax collection (Beta = 0.374,  $p < 0.001$ ). This finding aligns with the literature review, which highlighted the importance of clear and effective legal provisions in facilitating compliance (Pomeranz, 2015; Bird & Gendron, 2017).

Similarly, "Tax Administration and Enforcement" also showed a positive and significant relationship with withholding tax collection (Beta = 0.230,  $p < 0.001$ ). This outcome supports the literature's emphasis on the significance of administrative capacity and efficiency within tax authorities for effective tax collection (Torgler, 2013; Mooko & Gumede, 2018).

On the other hand, "Taxpayer Compliance rate" exhibited a positive relationship with withholding tax collection, albeit with a smaller standardized coefficient (Beta = 0.444,  $p = 0.009$ ). This result aligns with the idea that taxpayer compliance behavior positively impacts tax collection (Torgler, 2017). However, it's important to note that the coefficient is relatively smaller compared to the first two variables, suggesting that other factors may also be at play.

Interestingly, "Taxpayer Education and Awareness" did not show a significant relationship with withholding tax collection (Beta = 0.009,  $p = 0.893$ ). This finding is in contrast to the literature review, which suggested that taxpayer education and awareness could positively influence compliance (Saez, 2022). It's possible that the study's specific context or measurement of this variable may explain this divergence from the literature.

The regression analysis reveals that tax policy and regulations, tax administration and enforcement, and taxpayer compliance rate are significant factors influencing withholding tax collection, in line with the literature. However, the role of taxpayer education and awareness, while theoretically important, did not emerge as a significant factor in this particular study. This suggests that policymakers and tax authorities should focus on strengthening legal provisions, improving administrative efficiency, and enhancing taxpayer compliance to boost withholding tax collection in the given context.

## CONCLUSION

Withholding taxes have emerged as a pivotal contributor to Rwanda's overall revenue collection endeavors, underscoring their fundamental role in the nation's fiscal landscape. This revelation highlights their significance in sustaining the government's financial stability and development initiatives.

The table presents a comprehensive overview of respondents' perceptions regarding critical factors affecting the implementation and administration of withholding taxes in Rwanda. It reveals varying opinions among respondents, with some considering the Rwanda Revenue Authority (RRA) to have adequate resources and a supportive legal framework. Confidence in tax officers' advice and the efficiency of digital systems is generally high and consistent. However, there is some variability in responses regarding taxpayer education efforts and policy updates. Respondents overwhelmingly agree on the RRA's engagement in international cooperation and the clarity of withholding tax regulations. Overall, while mean scores indicate positive perceptions, standard deviations reveal varying levels of consensus among respondents. These findings provide valuable insights for further analysis and policy enhancements in the withholding tax domain in Rwanda.

The findings provide an in-depth overview of respondents' perceptions regarding challenges related to withholding taxes and their impact on the



tax system. It reveals that, on average, respondents somewhat agree with statements such as the significance of tax evasion through withholding tax non-compliance and the complexity of tax laws and regulations in hindering effective implementation. The level of agreement varies, as indicated by standard deviations. Respondents generally agree on the challenges posed by technological advancements and cross-border transactions, with relatively low variability in opinions. Resource constraints and legal disputes are recognized as significant challenges, with strong consensus among respondents. There is agreement on the importance of international cooperation mechanisms, although opinions vary somewhat. The issue of limited capacity and resources within tax administrations is acknowledged, but there is more diversity in responses. In summary, respondents generally acknowledge the challenges related to withholding taxes, with varying degrees of agreement and consensus levels across specific statements.

The findings present a nuanced perspective of respondents' views on the effectiveness of withholding tax systems and related policies. While a majority express confidence in the system's ability to reduce revenue loss due to tax evasion and avoidance, dissenting opinions are prevalent. There is a strong consensus on the positive impact of online systems in enhancing withholding VAT and income tax collection. Employee training programs are seen as valuable contributors to tax collection efficiency. Confidence in the consistency and effectiveness of withholding tax policies is high, but opinions vary regarding their impact on revenue collection efficiency. Similarly, respondents exhibit diverse views on the robustness and effectiveness of the legal framework supporting withholding tax policies. These findings provide a foundation for further analysis and policy development in the realm of taxation and revenue collection.

## RECOMMENDATIONS

The researcher derived many recommendations based on the outcomes of this investigation

- To improve withholding tax compliance, the government and tax authorities should invest in comprehensive taxpayer education and awareness programs. These initiatives should focus on enhancing taxpayers' understanding of withholding tax responsibilities, rates, and procedures. By promoting tax literacy, compliance levels can be significantly increased.
- The tax administration in Rwanda should prioritize the enhancement of its enforcement capacity. This includes allocating adequate resources, personnel, and technology for monitoring and enforcing withholding tax compliance. Effective enforcement mechanisms are crucial for ensuring that taxpayers fulfill their obligations.
- The adoption and utilization of modern technology in tax administration should be prioritized. Digital tools can streamline processes, improve transparency, and enhance the efficiency of revenue collection. Investment in technology infrastructure should encompass data analytics, online reporting systems, and automation of withholding tax processes.
- While the study found that tax policy and regulation had a limited impact on withholding tax collection in this specific context, it is essential to continuously assess and update tax policies and regulations to align them with changing economic conditions and international standards. Regular reviews can ensure that tax laws remain effective and efficient.
- Recognizing the diverse opinions and complexities surrounding withholding tax systems, tax authorities should adopt a more tailored and adaptive approach to tax compliance strategies. Different segments of taxpayers may have distinct compliance challenges, and addressing these nuances can lead to improved revenue collection outcomes.
- Policymakers should base tax policy decisions on empirical research and data-driven insights. Conducting periodic studies and analyses, similar to this one, can provide a deeper understanding of the factors influencing

taxpayer behavior and inform the development of effective policies.

- Collaboration between tax authorities, businesses, and other stakeholders is essential. Engaging in dialogues and partnerships with the private sector can lead to better-designed tax policies and greater compliance, benefiting both taxpayers and the government.

#### **Suggestion for further research**

Further studies can examine the extent to which technology adoption has improved the efficiency

and effectiveness of withholding tax collection in Rwanda. Assess the impact of digital tools, such as blockchain and data analytics, on reducing tax evasion and improving revenue collection. The study should explore taxpayers' perceptions of Rwanda's withholding tax policies and their level of satisfaction with the tax administration. Use surveys and qualitative research methods to gather insights into taxpayer experiences and sentiments.

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