

Effect of tax incentives on economic growth: A case of Rwanda revenue authority in Nyarugenge District, Rwanda

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ABSTRACT

Tax incentives are widely used globally to encourage investment, but their effectiveness in attracting incremental investments is often questionable; tax incentives can present challenges. The general objective of this study was to investigate the effect of tax incentives on economic growth in Rwanda. Specifically, to determine the effect of tax credit incentives on economic growth of Nyarugenge district, to examine the effect of tax deduction incentives on economic growth of Nyarugenge district, and to analyze the effect of tax exemption incentives on economic growth of Nyarugenge district. This study was guided by the agency theory of tax incentives, deduction theory, and tax competition theory. The study used descriptive and correlational research designs. A sample size of 396 respondents was drawn from 38,647 individuals involved in tax incentives and economic growth in the Nyarugenge district. The study utilized the simple random sampling. This study employed the questionnaire and interview guide for data collection. The study used descriptive and inferential statistics for data analysis. The results show that the overall high mean of 3.99 (SD=1.129) for the combined statements reflects a very strong positive perception that there is an effect of tax credit incentives on the economic growth of the Nyarugenge district, the overall high mean score of 3.93 (SD=1.302) for the combined statements reflects an overall strong positive perception that there is an effect of tax deduction incentives on the economic growth of the Nyarugenge district, and the overall very high mean score of 4.04 (SD=1.082) for the combined statements reflects a strong positive perception that there is an effect of tax exemption incentives on the economic growth of the Nyarugenge district. Additionally, the findings reveal that tax credit incentives have a positive coefficient of the estimate, which was significant ($\beta=0.152$, $p=0.000<0.05$). Findings reveal that tax deduction incentives have a positive coefficient of the estimate, which was significant ($\beta=0.109$, $p=0.000<0.05$), and the findings reveal that tax exemption incentives have a positive coefficient of the estimate, which was significant ($\beta=0.657$, $p=0.000<0.05$). The study concludes that tax credits, tax deductions, and tax exemptions contribute to economic growth in Rwanda, focusing specifically on the Nyarugenge district. The study recommends that tax incentive managers should understand the local economic landscape and identify sectors that would benefit most from tax credit incentives; they should create awareness for encouraging investment and entrepreneurship, and the study suggests that tax exemption incentives should be strategically designed to benefit sectors with high growth potential, such as technology, tourism, and agriculture.

Keywords: Economy Growth, Tax Incentives, Tax Credit Incentives, Tax Deductions Incentives, Tax Exemptions Incentives

I. INTRODUCTION

Economic growth according to Sinenko (2024) refers to the growth in the output of goods and services of an economy on a certain interval. And it is mainly measured by the increase of Gross Domestic Product (GDP) which has become a critical indicator of the status of the economy of a country. It is all the more necessary to understand about economic growth, as it gives an idea about the overall performance & health of an economy and this determines employment levels and income rate and living standards. Consequently, economic growth is influenced by a number of factors which interrelate with each other in a complicated nature. Oghogho et al. (2023) and others explain that tax incentives have significant influence on economic growth and stimulate investment as well as consumption. Governments will also be successful in maintaining greater spending and investment in different sectors by reducing the taxes paid by individuals and the business entity.

According to Suwanda (2023), tax incentives play a significant role in economic development since they encourage people to invest and to become entrepreneurs. These incentives persuade companies to invest in new business projects and to expand business operations by relieving the businesses of the financial strains. The steps intended to decrease tax burden on individuals and businesses can be in form of tax credits, deductions and exemptions. Appiah-Kubi et al. (2021) indicated that tax incentives which entail tax credits, deduction, and exemptions are aimed at reducing tax burden on both individuals and businesses. One of the major merits of these incentives is that they result to attracting foreign direct investment; since firms will be more willing to settle in an area with desirable taxation.

Globally, there are high effects on the growth of the economy on a global scale because of tax incentives which stimulate particular economic activity. As indicated by Dai and Chapman (2022), thoughtful programs were given weight as far as the specificity of incentives being presented by China is concerned. Furthermore, the growth stimulated by tax incentive entailed an increase in budgetary constraints to the governments and it was imperative that balance should be sought between economic stimulation and their fiscal sustainability. According to the authors, tax incentive programs on average attempt to increase the magnitude of research and development, as well as the patenting of new inventions of the firms, which results in the growth of the economy. Malaysia according to Peng et al. (2019) also implement some of the tax incentives that have been put to aid the promotion of green economy.

Besides, Siregar and Patunru (2021) hypothesized that tax incentives have high correlation with economic growth created by foreign direct investment (FDI) in Indonesia. The authors presented the positive and significance of tax incentives on economy growth as a strategic policy of the FDI attraction, thus it can be said that tax incentive policy has the potential in making Indonesia more attractive to foreign investors. This implies that tax incentive may not be the solution, and the economic status of the situation and country specifics are a strong determinant of success of the tax incentive. It proves to be true as was indicated by Serdinova (2023) who has demonstrated the connection that exists between tax incentives and economic growth in Turkey.

In addition, the study points out that there exists great positive correlation between certain tax packages policies corporate income taxes, personal income taxes, Value Added Tax and Gross Domestic Product (GDP) of the country. These tax incentives are the corporate income tax, the personal income tax and the value-added tax incentive, on GDP of a country. It brings to fore the effect of these tax policies in term of encouraging investment and consumption, which in turn stimulates economic activities. This implies that adoption of tax incentives may prove to be a useful intervention mechanism in the drive towards economic growth in Turkey (Oghogho et al., 2023).

In Africa, tax incentives encourage investments from both domestic and foreign sources. In Ghana, they attracted investments to rural areas, thereby stimulating economic activities and contributing to local development. They have encouraged businesses to establish operations in less developed regions (Amankwaah et al., 2022). The effectiveness of tax incentives is not uniform and can differ significantly based on regional and sectoral contexts. This variation suggests that policymakers should consider local economic conditions and industry characteristics when designing and implementing tax incentive programs. Certain areas have experienced more pronounced benefits due to better infrastructure and access to markets, while others have struggled to leverage the incentives effectively. This disparity signifies the importance of tailored approaches to policy implementation that consider local conditions and needs (Suwanda, 2023).

In addition, in Nigeria Olayemi and Folajimi (2021) argued that the tax incentives are considered as a significant source due to the improvement of operational capacity and competitiveness of the SMEs, which has contributed to the growth of the economy of Nigeria. Olayemi and Folajimi reported that tax incentives diminished the expenditure of monies on the part of small businesses by a lot and thus enabled them to plough saved cash back to extensions and innovations. They continued to say that there existed a positive relationship between tax incentives and employment generation in such states. By reducing tax burden, the SMEs stand in a better position to absorb more employees consequently raising the rate of employment and growth of the area. It means that government policy plays a crucial role in easing the process of access to tax incentives (Dai & Chapman, 2022).

Moreover, Charumbira (2024) noted that Botswana has undertaken various initiatives to enhance employment opportunities, particularly by moving away from its reliance on raw diamond mining and export. Author posited that the significant strategy has been the diversification of its economy, these incentives aim to create a more favorable business environment, encouraging foreign companies to establish operations and invest in local manufacturing capabilities. This approach reflects a broader effort to stimulate economic growth and create jobs beyond the traditional diamond industry (Dai & Chapman, 2022).

In Eastern African countries like Kenya, considering the tax incentives indicated by interest rates, inflation rates, and economic growth (Mbogo, 2022). The author noted tax incentives are significant predictor of Foreign direct investment (FDI), adding that tax incentive policies attracted foreign investors. This shows that while tax incentives play a meaningful role, the overall economic environment, characterized by stable interest rates, manageable inflation, and robust economic growth, also significantly affects FDI inflows (Siregar & Patunru, 2021).

Additionally, Ahumuza (2022) develops the argument that in Uganda tax incentives act as one of the major tax policy plans of public finance that determines the realization of both economic and social rights. The tax incentives are designed to spur on financial growth and financial investment and result in better living conditions and access to required solutions. This means that, tax incentives will boost the governmental ability to invest in social programs and thus make rights attainable as it is the case with Appiah-Kubi et al. (2021).

In Rwanda, tax incentives enhance economic growth through investments, strengthening of individual sectors and even creating foreign direct investment (Ukwizagira & Mbereyaho, 2023). Niyonzera and Twesigye (2024), in their turn, assert that tax exemptions focus also on the significance of favorable policies in the attraction and maintenance of businesses, which may contribute to the sustainable growth and the employment of the local population. This is

substantial in terms of tax reforms in improving the performance of revenue collection at the Rwanda Revenue Authority (RRA). It highlights the need of such reforms in enhancing the efficiency and effectiveness of tax administration. Offering of tax incentives by a community is a strayed policy that is utilized to make sure that business is willing to invest money, grow its operations, and economy.

Bahizi (2016) examined influence of tax laws and incentives on FDI in Rwanda from 2010 to 2015 highlights several critical aspects. However, this research will examine tax credit incentive, tax deductions and tax exemptions. Further, Ndemezo and Ndikubwimana (2020) explored effect tax incentives on productivity of the Rwandan food & beverage processing sector. The study focused on Rwandan food and beverage processing, showing a context gap, but this study will focus on economy growth of Nyarugenge district. Moreover, Niyongabo et al. (2022) assessed the effect of tax incentives on Rwandan foreign direct investment growth. The study concerned on Rwandan foreign direct investment growth, demonstrating showing a context gap, but this study focused on economy growth of Nyarugenge district. Hence, there is needed for more researches in this area. Consequently, the current study seeks to address a gap in the existing literature and study on tax incentives on economy growth in Nyarugenge district has not been studied.

1.1 Statement of the Problem

Tax incentives are widely used globally to encourage investment, but their effectiveness in attracting incremental investments is often questionable, tax incentives can present challenges. In Indonesia, taxpayer incentives have boosted economic growth, but some taxpayers struggle to utilize them due to the complexity of procedures and lack of information about tax incentives. Further, tax incentives are facing acute demographic and environmental problems in Russia (Sinenko, 2024); in Polska, state faced the problems during emergency and martial law (Pravdiuk, 2022).

In Rwanda, report on tax expenditure for the financial year 2024 in Rwanda analyzes companies and establishments that qualify for tax benefits according to the nation's tax and investment regulations. Total tax expenditure increased by 23.6% (Rwf 104.9 billion) compared to 2021/22, representing a total of 29% of tax revenues in FY 2022/23, where VAT, income tax preferences, and customs duties exemptions. The implications of these tax policies on government revenue and economic behavior are explored. Further, tax incentives boost economic growth by promoting investment, enhancing specific sectors, and potentially attracting foreign direct investment (Ukwizagira, 2023). According to Niyonizera and Twesigye (2024) the emphasis of tax incentives highlights the importance of supportive policies in attracting and retaining businesses.

This study uniquely evaluates three specific tax incentives available to business operators: tax credit incentives, tax deduction incentives, and tax exemption incentives. The analysis focuses on economic growth, highlighting its significance not only for Rwandan businesses but also for attracting investment. Previous research indicates that such corporate tax incentives can stimulate investment influx, which in turn fosters job creation and technological advancements. It emphasizes that these incentives enhance the business environment, making it more conducive for investment and development.

1.2 Research objectives

The present study aimed at achieving the following objectives:

- i. To evaluate effect of tax credit incentives on economy growth of Nyarugenge district;
- ii. To assess effect of tax deductions incentives on economy growth of Nyarugenge district;
- iii. To analyze the effect of tax exemptions incentives on economy growth of Nyarugenge district.

1.3 Research Hypotheses

The study tested the following specific hypotheses:

H_{01} : There is no significant effect of tax credit incentives on economy growth of Nyarugenge district;

H_{02} : There is no significant effect of tax deductions incentives on economy growth of Nyarugenge district;

H_{03} : There is no significant effect of tax exemptions incentives on economy growth of Nyarugenge district.

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Agency Theory of Tax Incentives

According to Bauer et al. (2018), presented with the approach of Michael C. Jensen and William H. Meckling in the frame of the Agency Theory of Tax Incentives (ATTI), managing the interests of the company managers and the shareholders are critical to the success of tax stimuli. According to this theory incentives in taxation may work well to fill in the gap which currently exists between objectives of the managers who are the agents and that of the shareholders who are the principals. With the tax incentive, businesses can motivate the managers to perform actions that are

profitable to its shareholders and this will increase the corporate governance of the entire business and hence the performance will also be good.

The agency theory of tax incentives and tax credits examines the connection between the principals and the agents and how this principle can be applied in the taxation environment. It assumes that there is the possibility of aligning the interests of taxpayers (agents) by using tax incentives and credits to align the interests they possess alongside the government (principals). Government can make taxpayers obey by offering advantages in a form of monetary benefits. With this approach, it will promote the targeted behavior among tax payers. According to this theory, tax incentives allow capturing agents and induce their behavior in a beneficial way as it applies to the entire economy (Tekin, & Polat, 2020)

The agency theory that is reviewed by Panda and Leepsa (2017) is the phenomenon that explores relations between principals and agents and specifically the conflicts that can occur when interests of both parties are not harmonious. The theory highlights the complications with maintaining that agents are acting in the best interests of the principals particularly where there is information asymmetry. The dis-alignment may be followed by the opportunistic behavior of the agents but this opportunistic behavior can be reduced with properly structured contracts that lead to the alignment of interests.

The ATTI illustrates the inherent conflict of interest between governments and businesses when tax breaks are offered. In this context, the government functions as the principal, while businesses serve as agents. In addition, the review demonstrates the importance of transparency and communication with regard to establishing trust between the agents and principals. Good communication has the ability to improve the level of understanding and cooperation thus lessening the possibility of conflict and helping to create a more productive relationship. In general, the results indicate that dealing with the problem of agency theory should comprise the combination of contractual alignment and open conversation. According to Bratton (2012), the agency theory on tax incentives made it clear that tax incentive programs are in extreme need of very careful design. It points out that these programs should be designed in a manner that would reduce risks. The end outcome would be to make sure that these incentives achieve their due purpose. The ultimate goal is to ensure that these incentives fulfill their intended objectives effectively.

The agency theory of tax incentives is relevant to this study because it underlines the association between principals and agents, in the event of tax incentives. In addition, the agency theory of tax incentives offers a framework within which to view the manner in which tax policies can be applied strategically in order to affect agent behaviour contributing to a more aligned set of interests and driving improved organizational performance. Also, agency theory of tax incentives assisted the researcher to support the impact of tax credits on the growth of the economy in the district of Nyarugenge.

2.1.2 Deduction Theory

The deduction theory is closely associated with Aristotle, in 1948, an ancient Greek philosopher renowned as the "father of logic." His significant contribution to this field is the development of the syllogism, a structured logical argument consisting of two premises leading to a conclusion that necessarily follows from them. This framework is fundamental to classical deductive reasoning (de Paiva Siqueira, 2017).

According to Givati (2019), its theory is discussed along with the items of tax deductions in terms of measuring the income and efficiency in economics. It states that although tax deductions received an image of a key component to measuring income, the more effective way of thinking challenges them as a necessity. The excellent deduction code suggests that the deduction be pegged to the share of the taxable benefit. This reveals that the exception of this rule can only cause rising deadweight losses, especially when the departures become more significant. Tax deductions can be seen through the lens of this efficiency perspective and it can be used to inform the best possible tax policy. Givati also considers the implications of different rules of deduction that are prescribed in the internal revenue code, analyzing them both in the aspect of income measurement and efficiency, thus improving the pedagogy of the teaching of tax deductions.

Moreover, in his theory of deduction, Popper (2022) argued that deduction is one of the major forms of reasoning that elaborates on the logic structure and logical results based on facts or assumptions. It is requisite in such area as mathematics, philosophy, and computer science. Financial or non-financial tax incentives are important in determining the behaviour and decision-making of taxpayers. It is necessary that organizations understand their dynamics so that they can enhance performance, introduce engagement and produce desired results. The complexities between deduction theory and tax incentives enable the organizations to examine various possible effects of tax incentives and how it would affect behavior.

Moreover, de Paiva Siqueira (2017) deduction theory emphasizes the importance of established premises, which serve as the foundation for drawing inferences. The process is characterized by its structured nature, allowing for clear and systematic reasoning. The effectiveness of this approach lies in its ability to produce conclusions that are necessarily true, provided that the initial premises are accurate. The theory of deduction is meaningful to this study as a logic branch that emphasizes formal principles and methods for determining conclusions from premises. Additionally, theory of

deduction aided the researcher to underpin the effect of tax deduction incentives on economy growth in Nyarugenge district.

2.1.3 Tax Competition Theory

Zodrow and Mieszkowski, but also the work of Wilson, which took place in 1986, are the primary sources of the tax competition theory. Their paradigm has made substantial progress and has become the most played out model concerning the literature dealing with this topic in the academia. These scholars have defined the knowledge about the nature of tax competition and its effects on the economic policy (Tiutinyk & Mazurenko, 2021).

Gugl and Zodrow (2019) indicate that the theory of tax competition suggests that governments are set to compete over tax bases in their attempts to adjust tax rates. This occurs in different forms; at country, state or provisional levels among others. The theory emphasizes strategic action of governments so as to pursue attracting businesses and people by presenting better tax terms. Consequently, the requirements to be competitively attractive in the globalized economy might affect the tax rates. This means that the theory of tax competition emphasizes that the interaction between the taxation policy and the economic competitiveness is dynamic.

Keen and Konrad (2013) note that a deep research concerning the theory of tax competition and coordination is carried out because the growth of the theory has taken place extensively in the last 30 years. They paid special attention to taxation of capital income regarding the implication of productive capital movement and paper profit. With a shared setting of indiscriminate tax competition being a common structure, the welfare properties and comparative statics of non-cooperative equilibria under investigation are put through the test on the basis of two models. Its findings are effective to illustrate the noteworthy principle that is tax competition is a large area of worry filtered by several anxieties particularly on taxation of capital income.

Tiutinyk and Mazurenko (2021) applied the Theory of Tax Competition to study the key aspects of country-competition at attracting investment with the help of using taxation policies taking into account the role of the attractiveness of tax regimes and tax rates on cross-nation capital flows. Through globalization, tax policy has been affected and greater mobility of the capital has compelled countries to re-examine their systems.

This qualifies the fact that tax competition fosters economic growth, it also has the effects of lessening the amount of public investment and causes disparity. With the aim of antagonizing the negative impacts of tax competition, the theory of tax competition insists on cooperation in order to overcome its negative impacts and promote fair taxation practices in an economically competitive way (Woodgate, 2020).

The theory of tax competition is important to this study as it seeks to maximize profits and governments aim to enhance the utility of a representative agent. These models demonstrate that tax competition leads to tax rates or exemptions being driven to inefficiently low levels, which may have adverse implications for public finance and overall economic stability. Additionally, theory of tax competition helped the researcher to underpin effect of tax exemptions incentives on economy growth of Nyarugenge district.

2.2 Empirical Review

2.2.1 Tax Credit Incentives on Economy Growth

Nam and Kwon (2024) have undertaken a study of Child Tax Credit (CTC) expansion, or American Rescue Plan Act, to offer family relief in a form of financial benefit provision to families with children in a time of COVID-19 pandemic. Specifically, the study analyzed the linkage between the CTC expansion and mental health outcomes, depression and anxiety symptoms of low-income parents. The study used data on the Household pulse survey and was accompanied by the difference in difference estimator with propensity score matching to find the effect of the expanded CTC on low-income households below \$35,000. The results indicated that families having access to the expanded CTC benefits had very low chances of developing anxiety symptoms. The finding indicates that the relief funding in the CTC expansion can also have a beneficial impact on the mental health of low-income parents, which underlines the relevance of these types of financial assistance in the light of an unfavorable economic situation.

The study authored by Gurmu et al. (2021) focuses on how taxation on job creation impacts employment in the 159 counties in Georgia between 2000 and 2015. Based on three different empirical approaches, the regression discontinuity design models, difference-in-differences models, and the analysis of the employment changes in the neighbouring census tracts, the study produces mixed results. Altogether, the results indicate that there is no strong evidence that would make it possible to prove the idea that the use of the tax credits is efficient in creating extra job opportunities. The study was limited on job creation tax credits on employment.

Buettner et al. (2023) researched how an income tax credit in respect of hard-to-tax consumer services affects VAT evasion in Germany. It establishes that tax credit promotes VAT compliance among firms by embracing the use of third-party reporting on the last stage of VAT. The credit has robust stimulating influence on reported sales and sales-to-input ratio, and has minimal influences on prices. The study focused on studied on the impact of an income tax credit for hard-to-tax consumer services on VAT evasion.

Tsiutsiak et al. (2023) analyze the economic nature of the tax-added tax (VAT) system and the schedules of taxes credits that have to be presented with certain types of transactions. The research gives an overview of the existing legal system of the recognition of the VAT tax credits and the description of the accounting records which should be prepared with the aim of the systematization and reporting. It expounds how the accounting process of tax credit claiming is done when goods and material values are received and the acquisitions of tangible assets by enterprises that have to pay VAT under advance payment provisions. The study concerned economic essence of the value added tax and its tax credit dates for various transactions.

2.2.2 Tax Deductions Incentives on Economy Growth

In its research, Dai and Chapman (2022) discuss the initiative of the Italian government to increase the rate of installing battery energy storage systems in tandem with photovoltaic (PV) plants in the residential sector in the wake of the COVID-19 pandemic. These tax deductions subsidized by 110 percent via five year tax break were basis of consideration using an economical model to determine the net present value and break-even point criterion to determine economic viability of this initiative. The findings show that the tax exemption greatly reduced the cost of investing on batteries thus increased profitability. The study was limited Italian government implemented a subsidized tax deduction of 110% over five years.

The implication of the tax system as that of the United States, especially on the taxpayers to reduce local tax by the amount of local tax they pay as a part of their taxable income on the demand of the public goods was studied by Ambrose and Valentin (2024). They based their studies on the school district referendum outcomes and applied a continuous treatment two-way fixed effects model where the percentage of residents using local tax deductions showed significant positive correlation with the demand of local public goods. The results show that a one percentage changes in proportion of resident deducting property taxes is linked to near one percentage fall in approval levels of tax and bond referendums.

The article published by Peng et al. (2019) examines how tax deductions affected the Japanese taxation of income and resident in the last 20 years. It makes use of household micro data with the National Survey of Family Income and Expenditure. According to its findings, the individuals within the high income groups received higher benefits under tax deductions, during their first years, such that, their tax burden decreased more than it happened to the individuals within the low income groups. However, this effect has diminished over time, leading to a more proportional structure in the tax system. Additionally, the research highlights those modifications in the deduction system have lessened the overall tax burden impact, while simultaneously weakening the influence on the Gini coefficient, which measures income inequality.

2.2.3 Tax Exemptions Incentives and Economy Growth In

The study by Miranda et al. (2022) examines the effects of the Brazilian government applying tax exemption policies to overcome economic crises and stagnation. The study covered a decade of data between 2007 and 2017 in examining the impacts of the said exemptions on the industrial activity and the economic growth in different Brazilian municipalities. In the findings, it was shown that although there were certain positive developments related to the industrial activity, the tax exemptions would not contribute to the growth of economy in the considered regions greatly. The study focused on effects of tax exemption on economic growth in Brazil.

Tosun (2020) studied religious tax exemptions in the United States, European Union, and Turkey by comparing them to each other and acknowledging essential differences in tax policies regarding religious organizations in various parts of the world. This study shows that religious entities have no agreed policy on taxation, which might cause different complications. To address these problems, the research recommends the development of national and international legislations that bring laws on taxes in harmony with the notion of the freedom of thought, conscience, and religion. The historical, cultural, and political implications of the maintained disproportions of the tax policies might be enormous, which is why the approach towards the tax exemptions concerning religion should be more unified.

This is because the study by Sebashe et al. (2022) critically evaluates the foreign employment income tax exemption threshold as stipulated in the Income Tax Act. It determines the usefulness of this exemption to South African tax residents receiving different amounts of foreign remuneration about the United Arab Emirates and the United Kingdom. The study is conducted on three scenarios, namely continuation of full exemption as at February 29, 2020, usage of exemption threshold as at March 1, 2020, and possible replacement of exemption as proposed in the Draft Taxation Laws Amendment Bill of 2017. One of the main aspects of the research is to evaluate the reasonability of the existing exemption level, with reference to that minimum exemption level that supposed to allow achieving a break-even situation in taxes in South Africa. The study aimed to limit the impact of the amendment on exemptions for South African tax residents in these jurisdictions.

Nyawanda (2024) evaluated the policy of the Kenya tax exemption in connection with disability in the light of the effect the policy has on the family caregivers of people with severe disabilities through a qualitative research study. The study sample included 17 working family care givers in Nairobi and data were collected based on a semi structure

interview. The main themes derived in the study were the financial support, social support, physical support, financial relief, better welfare, and ease of access. The results were that the implementation of disability tax exemptions benefited caregivers with greater financial relief, welfare boost and the aspect of increased availability. The study focused on the impact of introducing tax exemptions.

III. METHODOLOGY

3.1 Research Design

Descriptive research design and correlational research design were used in this study. According to Siedlecki (2020), descriptive research is devoted to the detailed description of a situation, and the most subtle opinions can be identified through the perspectives of the respondents with its help. On the contrary, correlational research, which is described by Devi et al. (2022), is one that shows the relationship among variables without manipulating them, which was applied in this study to ascertain the relation that existed between tax incentives (independent variable) and economic growth (dependent variable).

3.2 Population

The target population was 38,647 individuals involved in tax incentive and economy growth in Nyarugenge district. The target population comprised tax incentives coordinator, tax incentives implementers and businesses. The target population is presented below:

Table 1

Target Population

	Study Population
Tax incentives coordinator	1
Tax incentives implementers	40
Business Operators	38606
Total	38647

Table 1 shows the study population. The 38,647 individuals involved in tax incentive and economy growth in Nyarugenge district. They were one tax incentives coordinator, 40 tax incentives implementers and 38 606 businesses operate in Nyarugenge district.

3.3. Sample size and sampling technique

A sample size was 396 individuals. This research employed Yamane Taro's formula below:

$$n = \frac{N}{1 + N(e)^2}$$

where: n: The sample size

N: The population of the study

e: The margin error in the calculation

The current study

N equal 38,647 people

e equal 0.05

$$n = \frac{38674}{1 + (38647 * 0.05 * 0.05)} = 395.90$$

$$n = 396 \text{ respondents}$$

The current study has used simple random sampling to recruit study participants from a bigger target population. Target population involved those members of the tax incentives and economic growth in the Nyarugenge district who were 38,674 in number. In selecting the sample size of 396 respondents, every person stood an equal chance of being selected. The researcher applied a systematic approach of the random selection of the participants in the RRA database.

Table 2

Summary of Respondents

Category	Study Population	Sample size
Tax incentives implementers	40	3
Business Operators	38606	393
Total	38647	396

Table 2 presents sample size of this study. A sample size of 396 respondents including one tax incentives coordinator, 3 tax incentives implementers and 393 businesses operators in Nyarugenge district.

3.4 Research Instruments

A structured questionnaire was employed in the study and it was in two parts. Section A was used to obtain demographic data of the respondents, such as the identity of respondents, age, sex and experience. Section B was dedicated to the main areas of the study where possible questions were established to collect the necessary information. The respondents provided their views with Scale 5 (Strongly Agree) to Scale 1 (Strongly Disagree). The questionnaire to be used would give quantitative responses to 3 tax incentive implementers and 393 businesses within Nyarugenge district. Moreover, this study utilized an interview guide to gather qualitative data from a key informant, specifically a tax incentives coordinator.

3.4 Data Analysis Methods

A study utilized the quantitative and qualitative approaches. In this regard, this research employed quantitative approach for quantitative data using descriptive statistics and inferential statistics. In contrast, qualitative data analysis centered on the basic information obtained from respondent answers. In this research, Statistical Package Social Sciences (SPSS) (version 25.0) was used. The descriptive data were analyzed interpretively through the applications of mean and standard deviation as major statistical parameters. In addition, the research used inferential statistics through the regression analysis which is used to explain the association between the economy growth and tax incentives. Here wise regression analysis is a statistical procedure that helps the researcher to explain the association of variables (tax credit incentives, tax deduction incentives and tax exemptions incentives) on the other variable (economy growth).

IV. FINDINGS & DISCUSSION

This section presents and discusses the findings on assessing the effect of tax incentives on economic growth in Rwanda. It is based on evaluating effect of tax credit incentives, tax deductions incentives, and tax exemptions incentives on economy growth of Nyarugenge district.

Table 3

Questionnaire and Response Rate

Questionnaire	Frequency	Percent
Returned and complete	396	100.0
Incomplete and unreturned	0	0.0
Total	396	100.0

4.1 Profile of participants

The questionnaire was mailed at a significantly high rate, 396 distributed questionnaires were completed and returned leading to a proportion of 100.0%. The importance of the researcher in conducting the process was that the researcher was able to explain the importance of the study as well as give clear guidelines to the respondents who were having a hard time trying to fill in the questionnaire.

Table 4

Gender of Respondents

	Frequency	Percent
Male	160	40.4
Female	236	59.6
Total	396	100.0

The results depicted in the table above show that, a total number of 396 respondents were used, that is, 59.6 percent were female and 40.4 percent male. Such information exposes equality between the males and females, with the higher number of female participants taking part in the research. The proportion of men and women in the sample taken is important in analyzing how various groups perceive apprehend and how they use business resources in the Nyarugenge district.

Table 5

Age group of Respondents

Age	Frequency	Percent
Between 18-30years	89	22.5
Between 31-40 years	42	10.6
Between 41-50 years	175	44.2
51 years and above	90	22.7
Total	396	100.0

The results shown in Table above demarcate the age of the 396 respondents. It should be noted that 44.2 percent is between the age ranges of 41-50 making it the largest population group in the study. As well, 22.7 percent of the respondents are 51 years and above as opposed to 22.5 percent who are found in the age bracket of 18-30 years. The least size, which has 10.6 percent respondents, has age 31-40 years. The study makes a point of the importance of the age factor in shaping the preferences, knowledge and behaviours of people. The study underscores the critical role of age in influencing individuals' preferences, knowledge, and behaviors.

Table 6*Educational level of Respondents*

Education	Frequency	Percent
Primary	109	27.5
Secondary	173	43.7
Bachelor	89	22.5
Master	25	6.3
Total	396	100.0

The data in this study concerning the distribution of the education level among the 396 respondents show the high diversity of educational backgrounds. There is a relatively large number of people (43.7 percent) who have attained secondary school education whereas 27.5 percent have received primary education only. Conversely, 22.5 percent of the participants are bachelor degree holders and a scanty 6.3 percent of have a master`s degree. Such distribution shows that most respondents possess either primary or secondary education only.

Table 7*Work experience of Respondents*

Work Experience	Frequency	Percent
Below 2 years	153	38.6
Between 3-5 years	159	40.2
Between 6-10 years	72	18.2
11 years and above	12	3.0
Total	396	100.0

Table above refers to the results of the distribution of experience of respondents. Of the 396 respondents, 38.6 percent respondents had less than 2 years experience in business, 40.2 percent had a business experience between 3-5 years. In addition, 18.2 percent had 6-10 years professional background experience in business whereas 3.0 percent of respondents had a business experience of 11 years and more. The business professional experience of the majority group is 3-5 years. The levels of business experiences amongst the members of this team are varied, a fact that can show that it would be well balanced.

4.2 Descriptive Statistics

The study utilized a five-point Likert rating scale to assess respondents' opinions on the impact of tax incentives on economic growth in Rwanda. The scale ranged from 1 (Strongly Disagree), 2 (Disagree), 3 (Neutral), 4 (Agree) and 5 (Strongly Agree), allowing for a nuanced understanding of respondent opinions. Mean values were categorized to interpret the strength of opinions, with ranges defined as very low (0.01-1.00), low (1.01-2.00), moderate (2.01-3.00), high (3.01-4.00), and very high (4.01-5.00). Further, to analyze the data's consistency, standard deviation was employed. A standard deviation of equal or less than 0.5 indicated homogeneity among responses, while a value greater than 0.5 suggested heterogeneity.

Table 8*Effect of tax credit incentives on economy growth of Nyarugenge district*

Statements	Mean	Std. Dev.
Tax credit managers employ tax liability to decrease the amount of tax owed by businesses	4.00	1.221
Direct credits allow taxpayers to reduce their tax liability directly	3.92	1.218
Refundable credits allow taxpayer to receive a cash refund	3.90	1.057
Refundable credits play a significant role in the tax system	4.16	1.019
Overall	3.99	1.128

From the study findings, the Table above presents the descriptive findings on effect of tax credit incentives on economy growth of Nyarugenge district. It shows great consent among the respondents on whether tax credit managers

are effective in using tax liability to decrease the tax burden on businesses. The obtained values show the mean score as high 4.00 with a positive agreement and a standard deviation of 1.221 that implies a differentiated response. Furthermore, the respondents have admitted that the taxpayer can reduce their tax payment using direct tax credits with the mean rating of 3.92 and standard deviation of 1.218, once again signifying the positive attitude and multiple viewpoints.

Moreover, the study shows that the respondents have a very positive attitude towards tax returns in form of refunds. Having a high mean score of 3.90 and standard deviation of 1.057, it is possible to say that the majority of respondents agree with the fact that these credits allow taxpayers to obtain cash refunds and there is a slight discrepancy in their personal views. Moreover, higher average score of 4.16 with standard deviation of 1.019 proposes high consensus that the tax system cannot exist without refundable credits, extending a rather significant degree of diversity in the responses.

The very strong positive perception that there is the effect of tax credit incentives on economy growth of Nyarugenge district is reflected by the aggregated mean of the combined statements at 3.99 (SD=1.129). It resonates with what Chen and Yang (2019) stated that tax credits provide a great motivation to firms that are reluctant to improve their investment in innovative operations. This indicates the firms receiving these tax credits are more inclined to have a greater output of innovations and the addition of the R&D taxes credits has helped in increasing the competitiveness of businesses in China and this has led to the creation of an innovative culture in China. Other studies of Serdinova (2023) confirmed the findings as they stated that there exists a correlation between economic growth and tax incentives in Turkey. There is a higher positive relationship between the Gross Domestic Product (GDP) and the tax incentive policies especially among the corporate income tax incentive policies, personal income tax incentive policies, and value added tax incentives policies. This points out that all the three corporate income tax incentives, personal income tax incentives, and value-added tax incentives have a positive impact on the GDP of the country.

According to the how tax credit incentives affect economy growth of Nyarugenge district, the interviewee stated

“Tax credit incentives play a significant role in stimulating economic growth in the Nyarugenge district. By reducing the tax burden on individuals and businesses, these incentives encourage investment and spending, which can lead to increased economic activity. Furthermore, tax credits can attract new businesses to the district, enhancing competition and innovation. Additionally, the implementation of tax credit incentives in Nyarugenge district not only fosters a more vibrant business environment but also enhances the overall quality of life for its residents by promoting sustainable economic development”.

The findings also confirm Agency Theory of Tax Incentives (ATTI) as important to this study as it emphasizes the relationship between principals and agents in the context of taxation. It provides a framework for understanding how tax policies can be strategically utilized to influence agent behavior, thereby promoting better alignment of interests and enhancing organizational performance. In the context of underpinning the effect of tax credits on economy growth in Nyarugenge district, the tax incentives managers need for meticulous design in tax incentive programs such reductions in tax liability, direct credits against taxes owed, and refundable credits that can result in a cash refund.

Table 9

Effect of Tax Deductions Incentives on Economy Growth of Nyarugenge District

Statements	Mean	Std. Dev.
Effectively utilization tax deductions for specific expenses are critical component of tax strategy	3.99	1.161
Tax deduction for specific expenses is significantly reduced businesses' taxable income	3.93	1.400
Tax deduction for specific activities is important to reduce taxable income	3.83	1.286
Tax deductions for particular category of income significantly impact a businesses' overall tax liability	3.99	1.361
Overall	3.93	1.302

The results provided in this paper evolve a positive correlation with high values between the economic growth in the Nyarugenge district and tax deduction incentives. The respondents all concur that the tax strategy requires proper use of tax deductions of special expenses which is exhibited by a high mean score of 3.99. The opinions are more or less consistent as evidenced by the standard deviation of 1.161. Also, the respondents are strongly in agreement that tax deductions have a very proficient effect of reducing the taxable revenue of businesses with a mean of 3.93 and standard deviation of 1.400 which possesses a relatively non-homogenous benchmark of approval.

Moreover, the statement which stated the importance of the tax deduction feature of specific activities in tax reduction to taxable income recorded a very high mean score of 3.83, which means that there is strong positive agreement among the respondents. However, there is some degree of non-homogeneity in answers among respondents indicated by the standard deviation of 1.286. Continuing on the statement that the Tax deductions of a specific type of income is influential on the total tax burden facing a businesses, the high value of 3.99 reveals the fact that there is a high positive

agreement but its standard deviation of 1.361 presents an impression that there is variety in thoughts that respondents share.

The general strong positive mean 3.93 (SD=1.302) of the composite statements indicates that the general perception is that there is effect of tax deductions incentive on the economy growth of Nyarugenge district. The research results are consistent with the findings of a study done by Ambrose and Valentin (2024) examined on the United States tax regime which enables taxpayers to deduct local taxes on their billable revenues, a factor that influences the demand of public goods. According to a study there is a positive relationship local good goods demand and the number of residents who to deduct local taxes. The decline in property taxes deductions also reduces the level of tax and bond referendums by 0.97 percentage. The higher-incomes earners in the federal tax deductions can lead to a worse distribution in the services given to the populace. Moreover, Amankwaah et al. (2022) states that tax incentives have been useful in bringing investments in the rural region, hence activating the region economically, leading to its development. With the incentives, it has persuaded companies to open shop in less developed areas where it has resulted to employment as well as the level of income earned by the locals has been elevated.

Regarding to the how tax deductions incentives affect economy growth of Nyarugenge district, the interviewee stated *“Tax deduction incentives play a significant role in stimulating economic growth in the Nyarugenge district. By reducing the tax burden on individuals and businesses, these incentives encourage increased investment and spending. This influx of capital lead to the establishment of new enterprises, expansion of existing businesses. Moreover, tax deductions can attract external investors who are looking for favorable conditions to establish their operations. This can result in a more competitive business environment, fostering innovation and efficiency among local firms. In summary, tax deduction incentives are a powerful tool for driving economic growth in Nyarugenge district by promoting investment, creating jobs, attracting external capital, and supporting key sectors”*.

The findings also confirm Theory of Deduction (TD) as meaningful to this study as a logic branch that emphasizes formal principles and methods for determining conclusions from premises. In the context of effect of tax deductions incentives on economy growth of Nyarugenge district, tax incentive managers used this theory for guiding optimal tax policy like specific expenses, certain activities and particular categories of incomes. Additionally, they employ this deduction theory in enhancing economy thinking and analytical skills.

Table 10

Effect of Tax Exemptions Incentives on Economy Growth of Nyarugenge District

Statements	Mean	Std. Dev.
Taxpayers are aware of the limits and conditions associated with tax exemption for specific expenses	4.00	1.158
Tax exemptions allow taxpayers to exclude certain costs from their taxable income	4.02	1.043
Taxpayers understand which items qualify for tax exemptions	4.17	1.045
Taxpayers are aware of the criteria and implications associated with tax exemption for services	3.99	1.084
Overall	4.04	1.082

Based on the results of the study, taxpayers in Nyarugenge district had a lot of awareness about the threshold and requirements linked to the provided tax exemption incentives as the mean value of 4.00 (SD=1.158) shows. This would imply great positive agreement by the respondents though their responses have a range of variation as indicated by the standard deviation. Moreover, the respondents also had a majority opinion that through tax exemptions, taxpayers allow themselves to avoid reporting some costs in taxable income with an even higher mean score of 4.02 (SD=1.043). Such a very high mean score supports a very strong positive overall agreement and yet the standard deviation once again shows a range of views among the participants.

The results of this analysis show that citizens have a good knowledge concerning tax exemption eligibility having attained high mean of 4.17. This is a general consensus of the respondents, but even the standard deviation figure of 1.045 indicates that the opinions are divided. Moreover, the taxpayers demonstrate their awareness about the criteria and implication of tax exemption of services with a mean score of 3.99, which also implies high agreement, but a standard deviation of 1.084 means that the responses were diverse.

The overall, the research indicates that strong positive perception of tax exemption incentive impact on economic growth in Nyarugenge district has highly impacted on the mean score that is 4.04 (SD=1.082). The same is supported by the study of Miranda et al. (2022), who considered the economic growth in Brazil in the context of an economic crisis under the influence of tax exemptions. The decade research conducted by them in 2007-2017 noted some positive trends in the industrial activities due to tax exemption policy that had rolled out in different municipalities. Charumbira (2024) also talks about the shift in focus among Botswana to diversify the economy to achieve more employment opportunities as opposed to mainly focusing on raw diamond mining and exporting. Such diversification is regarded as an important program towards sustainable economic growth. Additionally, Ahumuza (2022) merely

stresses the significance of tax incentive in Uganda as a crucial policy of the public finance to enhance the fulfilment of the economic and social rights with the purpose to encourage development and investment.

Concerning the how tax exemptions incentives affect economy growth of Nyarugenge district, the interviewee stated:

"Tax exemption incentives play a significant role in stimulating economic growth in the Nyarugenge district. By reducing the financial burden on businesses and individuals, these incentives encourage investment and entrepreneurship. Moreover, tax exemptions can attract external investors who are looking for favorable conditions to establish their operations. Additionally, tax exemptions facilitate the development of infrastructure and public services, as businesses that prosper may contribute to local development initiatives. In summary, tax exemption incentives are a powerful tool for promoting economic growth in Nyarugenge district by fostering investment, creating jobs, attracting external capital, and enhancing local infrastructure and services".

The findings confirm as it seeks to maximize profits and governments aim to enhance the utility of a representative agent. These models demonstrate that tax competition leads to tax rates or exemptions being driven to inefficiently low levels. In the context of effect of tax exemptions incentives on economy growth of Nyarugenge district, tax incentives managers use the theory of tax competition in exemptions for specific expenses, exemptions for specific goods and exemption for specific services.

Table 11

Effect of Tax Incentives on Economy Growth of Nyarugenge District

Statements	Mean	Std. Dev.
Tax incentives are significantly increased productivity	4.03	1.055
Tax incentives are significantly created employment	3.85	1.078
Tax incentives are significantly increased GDP rate	3.78	1.154
Tax incentives are significantly increased economy	4.01	1.084
Overall	3.91	1.092

The results attributed to the examination of the effectiveness of tax incentives on the growth of the economy within the Nyarugenge district bring a lot of insight. To the statement, Respondents rated the level of positive agreement with high mean of 4.03 showing that indeed tax incentives do boost productivity a lot. Such a score indicates an agreement by the participants even though the standard deviation is 1.055 which tends to indicate that some of the participants were inconsistent in their answers. As well, when it comes to the impact of tax incentives in job creation; there is a significant agreement, with the mean score being 3.85, which also serves to signify a high positive score. The standard deviation of 1.078 also indicates that response is not quite homogenous in views of the respondents. Comprehensively, the statistics reiterate the subjective benefit of tax incentives in enhancing productivity and employments in the district.

The data analyzed indicates a high level of agreement among participants regarding the impact of tax incentives on the GDP rate and the economy. The mean score for the statement on the GDP rate is 3.78, reflecting positive sentiment, while a standard deviation of 1.154 suggests varying opinions among respondents. Similarly, the mean score for the economy is 4.01, which shows a very strong positive agreement, although the standard deviation of 1.084 indicates some diversity in responses.

The overall high mean score of 3.91 (SD=1.092) for the combined statements reflects an overall strong positive perception that there is effect of tax incentives on economy growth of Nyarugenge district. The study findings align with a study conducted by Oghogho et al. (2023) noted that tax incentives significantly impact economic growth in Nigeria. Tax incentives play a crucial role in fostering economic growth in Nigeria. The government is encouraged to create and enforce legislation that enhances investment support specifically targeted at the manufacturing sector. Niyonizera and Twesigye (2024) added that the emphasis of tax incentives highlights the importance of supportive policies in attracting and retaining businesses, which can lead to sustainable growth and increased employment opportunities for the local population.

Regarding to the how tax incentives affect economy growth in Rwanda, the interviewee stated

"Tax incentives play a significant role in driving economic growth in Rwanda by attracting both domestic and foreign investments. These incentives, which may include reduced tax rates, exemptions, and credits, create a favorable business environment that encourages entrepreneurs to establish and expand their operations. Moreover, tax incentives stimulate specific industries that are crucial for Rwanda's development, such as agriculture, technology, and tourism. Additionally, the effective implementation of tax incentives enhances government revenue in the long term. As businesses grow and become more profitable, they contribute to the tax base".



4.3 Inferential Statistics

The study employed inferential statistics, including hypothesis testing, model summary, Analysis of Variance (ANOVA) and regression coefficients, to examine the relationships among the study variables. This analytical approach aimed to provide insights into the strength and nature of these relationships. The research was structured around three specific hypotheses, which guided the investigation and analysis of the data: Ho1: There is no significant effect of tax credit incentives on economy growth of Nyarugenge district; Ho2: There is no significant effect of tax deductions incentives on economy growth of Nyarugenge district; and Ho3 There is no significant effect of tax exemptions incentives on economy growth of Nyarugenge district.

Table 12
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.911 ^a	.831	.830	.40011

a. Predictors: (Constant), Tax exemption incentives, Tax credits incentives, Tax deduction Incentives

From the study findings, Table above deals with Model Summary for the regression analysis. The R value of 0.911 indicates a very strong positive correlation between the predictors (Tax credit incentives, Tax deductions incentives and Tax exemptions incentives) and economy growth in Nyarugenge district.

R Square value of 0.831 designates that approximately 83.1% of variability in the economy growth in Nyarugenge district can be clarified by the independent variables in the model. Results aligned with Amankwaah et al. (2022) asserted that, in Ghana, tax incentives have played a significant role in attracting investment to rural areas, thereby stimulating economic activities and contributing to local development. Sidelnykova et al. (2022) posited tax incentives play an important role in shaping tax policy, as they are designed to achieve specific social and economic objectives. The research focuses on evaluating how these incentives affect the operations of business entities. It also seeks to identify strategies to enhance their efficiency and competitiveness in the market.

Table 13
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	308.180	3	102.726	641.675	.000 ^b
	Residual	62.756	393	.159		
	Total	370.936	396			

a. Dependent Variable: Economy growth

b. Predictors: (Constant), Tax exemption incentives, Tax credits incentives, Tax deduction Incentives

Table above provides the analysis of variance (ANOVA) where the F-statistic is highly significant at 641.675, and it is not 0 (the p-value is 0.000). In this F-statistic, the overall significance of the regression model is tested and the question answered on whether there is a significant difference between the predictors of tax credit incentives, tax deduction incentives and tax exemption incentives, and the economic growth in the Nyarugenge district. Since p-value is less than 0.05, it implies that there is a significant contribution of these predictors to the variance in economic growth in the district. The findings are supported by the emphasis of Serdinova (2023) who asserted that there is a correlation between tax incentives and economic growth in Turkey. Sidelnykova et al. (2022) posited tax incentives play an important role in shaping tax policy, as they are designed to achieve specific social and economic objectives. The research focuses on evaluating how these incentives affect the operations of business entities.

Table 14
Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.220	.091		2.417	.017
	Tax credits incentives	.152	.034	.149	4.470	.000
	Tax deduction Incentives	.109	.028	.138	3.892	.000
	Tax exemption incentives	.657	.040	.676	16.425	.000

a. Dependent Variable: Economy growth

The study adopted multiple regression models below:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3+ \epsilon$$

Therefore, economy growth = 0.220 + 0.152 (Tax credit incentives) + 0.109 (Tax deduction incentives) + 0.657 (Tax exemption incentives) + 0.091.

Table 14 shows the coefficients for the regression model predicting economy growth in Nyarugenge district based on the predictors like tax credit incentives, tax deductions incentives and tax exemptions incentives. The constant term has an unstandardized coefficient (B) of 0.220 with a standard error of 0.091 ($p=0.017<0.05$).

4.3.1 Hypotheses Testing

Hypothesis one stated that there is no significant effect of tax credit incentives on economy growth of Nyarugenge district. Findings revealed that tax credit incentives have positive coefficient of the estimate which was significant ($\beta=0.152$, $p=0.000<0.05$). The null hypothesis was rejected and it was concluded that tax credit incentives have positive and significant effect on economy growth of Nyarugenge district. This suggests that for every one-unit increase in tax credit incentives, there is a 0.152-unit increase in the economy growth of Nyarugenge district. The findings align with Gurmu et al. (2021) study examined the impact of job creation tax credits on employment in Georgia's 159 counties over a 15-year period. Using three empirical approaches: regression discontinuity design models, difference-in-differences models, and employment differences in bordering census tracts, the study finds mixed results, but generally provides little evidence to support the claim that tax credits create additional employment. The study was limited on job creation tax credits on employment. Buettner et al. (2023) studied on the impact of an income tax credit for hard-to-tax consumer services on VAT evasion in Germany.

Likewise, the hypothesis one stated that there is no significant effect of tax deduction incentives on economy growth of Nyarugenge district. Findings revealed that tax deduction incentives have positive coefficient of the estimate which was significant ($\beta=0.109$, $p=0.000<0.05$). The null hypothesis was rejected and it was concluded that tax deduction incentives have positive and significant effect on economy growth of Nyarugenge district.

This suggests that for every one-unit increase in tax deduction incentives, there is a 0.109-unit increase in the economy growth of Nyarugenge district. The findings are supported by Ambrose and Valentin (2024) studied on the United States tax system permits taxpayers to deduct local taxes from their taxable incomes, which has implications for public goods demand. In addition, Peng et al. (2019) study investigates the effects of deductions on Japan's income and resident tax systems over a two-decade span, utilizing household microdata from the National Survey of Family Income and Expenditure.

Lastly, the hypothesis one stated that there is no significant effect of tax exemption incentives on economy growth of Nyarugenge district. Findings revealed that tax exemption incentives have positive coefficient of the estimate which was significant ($\beta=0.657$, $p=0.000<0.05$). The null hypothesis was rejected and it was concluded that tax exemption incentives have positive and significant effect on economy growth of Nyarugenge district. This suggests that for every one-unit increase in tax exemption incentives, there is a 0.657-unit increase in the economy growth of Nyarugenge district. The findings align with Miranda et al. (2022) studied on effects of tax exemption on economic growth. The Brazilian government introduced exemption tax policies as a response to economic crisis and stagnation. A study conducted over a decade, from 2007 to 2017, analyzed the effects of these tax exemptions on industrial activity and economic growth across various Brazilian municipalities. Moreover, Tosun (2020) studied compares religious tax exemptions in the US, EU, and Turkey, revealing basic differences in religious-based tax exemptions and evaluating tax exemptions for religious organizations in general.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

This study aims to investigate the effect of tax incentive on economy growth in Rwanda. Specifically, the effect of tax credit incentives, tax deductions incentives and tax exemptions incentives on economy growth of Nyarugenge district. To start with, the research was to establish whether tax credit incentive has an impact on economic growth in the Nyarugenge district. The results point out toward an affirmative and substantial power between tax credit incentives and area economic growth. Accordingly, the research is of the opinion that tax credit incentive is a useful means to economic growth in the Nyarugenge district. Second, according to the objective number two, to analyze the impact of tax deduction incentives to economy growth in Nyarugenge district, the study observes that the descriptive result on effect of tax deduction incentives to economy growth of Nyarugenge district was positive and outstanding. In this respect the study infers that there exists influence of deduction incentives on the growth of the economy of the Nyarugenge district. Finally, the research was propounded on the analysis of tax exemptions incentives to economic growth in Nyarugenge district. The result shows that tax exemptions have a positive significant relationship with economic growth in the region. It is therefore the study finding that tax exemption incentives are important towards economic development in Nyarugenge district.

5.2 Recommendations

The study investigates the effect of tax incentives on economic growth in Rwanda, focusing specifically on the Nyarugenge district. It examines three types of tax incentives: tax credits, tax deductions, and tax exemptions. Firstly,

the findings indicate a positive and significant relationship between tax credit incentives and economic growth, concluding that tax credit incentives effectively contribute to the economic development of Nyarugenge district. However, tax incentive managers should understand the local economic landscape and identify sectors that would benefit most from tax credit incentives. They should also implement targeted tax credits; the district can attract new businesses and encourage existing ones to expand. Additionally, they should monitor and evaluate the mechanisms for making necessary adjustments over time. Secondly, the findings indicate a positive and significant relationship between tax deduction incentives and economic growth, concluding that tax deduction incentives effectively contribute to the economic development of Nyarugenge district. However, tax incentives managers should create awareness for encouraging investment and entrepreneurship. By effective communication and outreach to inform potential investors about the available tax deduction incentives, there is raising awareness and simplifying the application process, and the district can maximize participation in these programs. Lastly, the findings indicate a positive and significant relationship between tax exemption incentives and economic growth, concluding that tax exemption incentives effectively contribute to the economic development of Nyarugenge district. However, the study suggests that tax exemption incentives should be strategically designed to benefit sectors with high growth potential, such as technology, tourism, and agriculture. Additionally, tax incentive managers should engage with local stakeholders and businesses for meeting the specific needs of the businesses.

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