DEMOGRAPHIC FACTORS INFLUENCING TAX COLLECTION IN KENYA

BY

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MASTERS OF SCIENCE IN COMMERCE (FINANCE AND ACCOUNTING)

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DECLARATION

I declare that this dissertation is my original work and has not been previously published/submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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I do hereby confirm that I have examined the Master's dissertation of

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And have certified that all revisions that the dissertation panel and examiners recommended have been adequately addressed.

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ABSTRACT

Tax collection is essential to a country's capability to finance public goods and services due to the expansive amount of needs. However, developing economies such as Kenya are registering, low level of tax collection, significantly compromising economic development. This has prompted the Government of Kenya to seek for ways of increasing tax collection through legislation and amendments to the tax laws. However, the tax collection has not sufficiently supported the country's revenue collection objective. Most of the challenges facing tax collection are associated with certain demographic factors. Despite the wide array of literature on demographic factors affecting tax collection, there is no conclusive evidence of age, gender, taxpayer education and income level being determinants of tax collection in Kenya. The available empirical literature yields mixed results flawed with a lot inconsistency; a knowledge gap this study identified. This research sought to identify the demographic factors influencing tax collection in Kenya and specifically to; establish the effect of income level on tax collection in Kenya, establish the effect of education level on tax collection in Kenya, assess the effect of age on tax collection in Kenya, and ascertain the effect of gender on tax collection in Kenya. The research adopted a descriptive research design using quantitative approach. Its target population was the taxpayers in Nairobi County between the years 2008 and 2018. The study used census, a non-probability method, for its sampling since the data was readily accessible and to ensure homogeneity. Secondary data was gathered from the Kenya National Bureau of Statistics and Kenya Revenue Authority websites for period between the year 2008 to 2018. Data was analyzed with the help of STATA 13 to yield descriptive statistics (frequencies, mean, standard deviation, minimum, maximum, percentage as well as inferential statistics). The study revealed that at 5% significance; income level has a statistically significant positive effect on tax collection in Kenya, level of education has a statistically significant positive effect on tax collection in Kenya, age significantly affects tax collection in Kenya, and gender has a statistically significant positive effect on tax collection in Kenya with the females contributing slightly more than the males. The study recommends that Kenya Revenue Authority in collaboration with the Government of Kenya should; understand tax payers' motivation, design its taxpayer education programs, concentrate much of their effort in creating awareness on the benefits of tax to the Kenyan youth: friendly tax compliance policies those that do not hurt the youths, and carry out a nationwide tax awareness and education targeting males.

Key words: demographic factors, education level, gender, income level, tax collection,

taxpayer's age.

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DEDICATION

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ACRONYMS AND ABBREVIATIONS

CATA - Commonwealth Association of Tax Administrators

FBT – Fringe Benefit Tax

GDP - Gross Domestic Product

ICT - Information Communication Technology

IMF – International Monetary Fund

KICD - Kenya Institute of Curriculum Development

KNBS -Kenya National Bureau of Statistics

KRA - Kenya Revenue Authority

NTCA - National Tax and Customs Administration

OLS - Ordinary Least Squares

PAYE - Pay as You Earn

SMEs- Small and Medium Enterprises

URA - Uganda Revenue Authority

VAT - Value Added Tax

VAA – VAT auto assessment

VIF - Variance Inflation Factor

WHT - Withholding Tax

OPERATIONAL DEFINITION OF TERMS

Age means the period in history or human progress in terms of years of the taxpayers (Warui & Otai, 2019)

Education level means the highest level of formal schooling a person has completed, (Devos, 2014).

Gender refers to either of the two sexes (male and female), especially when considered with reference to social and cultural differences rather than biological ones (Ndichu, 2019).

Income level is used to imply the amount of monetary or other returns, either earned or unearned, accruing over a given period of time (Ashir & Syed, 2019).

Tax collection refers to the act of gathering periodic taxes from the public. This tax includes the monthly income taxes (Defitri and Fauziati, 2018).

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Governments all over the world are obliged to satisfy the essential demand of the citizens in their countries by implementing infrastructural projects for economic and social development as well as service delivery and providing essential security (Mogeni, 2014). Governments are therefore compelled, by the requirement to raise sufficient finances to fund these development projects and to ensure that they properly discharge their responsibilities of service delivery and maintain peace (Mannan et al., 2020). Since governments are not entrepreneurial entities, they seek for financial resources to fund these projects from tax revenue (Khadka, 2015).

In Kenya, the Government of Kenya (GoK) relies on revenue collected from taxes, which constitute 80.4% of total government revenue, as its major source of funding for its development and recurrent expenditure. More precisely, the tax revenue generates the highest volume of the revenue used for funding government development projects and recurrent expenditure, which have rendered taxation the core contributor to the development projects and for socio-economic growth of the country (Gitaru, 2017). Taxation is used to raise sufficient revenue to fund public spending without recourse to excessive public sector borrowing.

The requirement for GoK to heavily rely on tax revenue creates the need to ensure full tax compliance by every qualified taxpayer in the country to enable the country's fiscal stability (Gachiku, 2015). Considering that achievement of full tax compliance is slippery, Defitri and Fauziati (2018) postulate that full tax collection can only be assured by uses of multiple

approaches. Tax collection is one of the key sources of revenue for the Kenyan government. In Kenya, Kenya Revenue Authority (KRA) is the body charged with collection of taxes for the sake of the state (National Council for Law Reporting, 2018).

Taxes are generally categorized into direct and indirect taxes. The different categories of taxes collected by KRA are: personal income tax, advance tax, instalment tax, residential income tax, Agency Revenue, Value Added Tax (VAT), Capital Gains Tax, Excise duty, Stamp duty and betting and pools tax. Income tax can be further broken down into Corporation tax, Pay as You Earn (PAYE) and Withholding tax (WHT) (KRA, 2019). Appropriation in aid is another source of revenue for the GoK. It is derived from services provided by ministries which are handed over to the exchequer every financial year. Appropriation in aid is a form of government proceeds.

The National Treasury is a state department in the GoK that has been mandated with management of national economic policy, preparation of government's annual budget and management of the public finances of the national government. The National Treasury is under the portfolio of the Cabinet Secretary for Finance. It is comprised of several departments which are charged with execution of its mandate (Khadka, 2015). In recent years, the GoK has been collecting more revenue from direct taxes in comparison to indirect taxes. The revenue collected is usually accounted for and any variances between the actual revenue collected and the approved estimated revenue is reconciled. The total revenue is then distributed amongst government expenditures. This procedure is guided by the various sub budgets from various ministries which are part of the main government budget that details total government income and expenditure (Ndiso, 2019). In a bid to increase tax collection, the KRA has focused on speeding up of dispute resolution. Instead of placing reliance on its tax appeals tribunal and courts it gives taxpayers a

mediation option after the 60-90 days of evaluating the assessment the taxpayers want to question. Mediation gives a result within an additional 90 days in addition to the option of going back to the usual methods at any point.

According to Defitri and Fauziati (2018), to be able to increase tax revenues hence, depends on high compliance of society to tax. Accordingly, tax collection is an issue that is still being discussed today. Much of the tax literature identifies factors affecting tax collection where demographics appear to be important causes of tax collection. The importance of demographic factors towards tax collection has also been discussed in previous studies. These demographic factors are usually meticulous such as gender, education, age, occupation, income. The results of previous empirical research concluded that demographic factors such as age (Fredrick & Peter, 2019), gender (Ndichu, 2019), education level (Wudeneh, 2018) and income level (Defitri & Fauziati, 2018) are highly correlated with tax collection.

1.1.1 Demographic factors influencing tax collection

Demographic factors can be defined as the socioeconomic factors used in the definition of a population (Boyd, 2019). These factors are expressed statistically. They include: age, income level, occupation, education level, gender, religion, peer influence, birth rate, marital status, death rate (Borrallo et al., 2021; Boyd, 2019; Ndichu, 2019; Ashir & Syed, 2019; Fredrick & Peter, 2019). For the purpose of this study, the demographic factors that were looked into are income level, education level, age and gender. Demographic factors are ever changing. It is therefore important that the government takes into consideration the changes so as to monitor tax collection. Various studies have been undertaken on how demographic factors affect consumption behavior, employee performance and financial literacy of employees (Borrallo et al., 2021; Boyd, 2019;

Ndichu, 2019; Gitaru, 2017; Nathan, 2014). However, demographic factors influencing tax collection have not been widely assessed.

Income level fluctuations have had an impact on tax collection such that the higher the income level, the wider the tax bracket and vice-versa (Ndichu, 2019). It is widely asserted that higher income level attracts higher compliance while lower-income taxpayers denote lower compliance (Kasper et al., 2015). High income earners are expected to exhibit wealth by complying to taxes while low-income earners are expected to hide their actual income from tax officials. Basheer et al.'s (2019) asserts that income source solely from wages and salaries increase tax collection to an appreciable level. Income level varies from one individual to the next.

Education is also another issue that has to be dealt while examining the factors affecting tax collection, where tax collection was shown to be positively related with education level of tax payers (Adimasu & Jerene, 2016). The higher the education level of a taxpayer the more he/she will be aware of taxation and understand the benefits of paying taxes when compared with lower-educated taxpayers (Defitri & Fauziati, 2018). This will encourage higher educated people to be more compliant. Al-Mamun et al.'s (2014) identified general education attainment as assisting in explaining the confusion surrounding the effect that the education variable has on tax collection. Education level is considered to have a direct effect on tax collection in the sense that, an educated person is an empowered person, (Khadka, 2015). Educated people can apply their knowledge and skills to get a source of income. This source of income once subjected to taxation, becomes a source of tax for the government.

Age is considered as a factor affecting the level of tax collection (Adimasu & Jerene, 2016). Manchilot (2018) stated that age of tax payers has positive but no significant impact on compliance

level of tax payers. The logit result of Widianto (2015) shows that age is statistically significant and has a negative influence in explaining tax compliance. This means that older taxpayers are less likely to comply than younger taxpayers. Upon retirement, many households experience a decline in income that reduces their income tax base (Borrallo et al., 2021).

The population ageing process may also undermine direct tax collection if the tax base reduction also entails a drop in effective tax rates; this depends on the progressivity of tax rates by income bracket and whether there are special deductions and exemptions for older people. The most productive years of a person's life are estimated to be between 30 and 40. Between ages 30 and above, most youths have acquired the requisite skills and experience needed to get better paying jobs. Those aged between 21 to 29 are youth who are either studying or job searching. The jobs acquired are mostly entry-level jobs that are not well paying.

Gender is considered one of the important demographic factors when studying the determinants of tax collection level of tax payers. Widianto (2015) depicted that the gender variable has a statistically negative significant marginal effect, where female taxpayers are more likely to comply by abiding to tax laws than male taxpayers. This finding is consistent with the finding of Tadesse & Goitom (2014) that female taxpayers are more compliant in comparison with males in the study area. But, Manchilot (2018) and Adimasu & Jerene (2016) stated that gender of tax payers has positive but no significant impact on compliance level of tax payers. As regards gender, male taxpayers are considered more prone to evasion of taxes. This is because most men are the breadwinners in their families and bear most financial burdens. When the financial burdens start exceeding their income, there is the tendency to evade tax as much as possible so as to remain with more disposable income to attend to family needs (Devos, 2014). Men are also considered

more likely to evade taxes due to their competitive nature and winning spirit. This makes them want to be ahead of the pack and evading taxes enables them to outshine their competitors in the business world.

The demographic factors of the Kenyan population are ever changing. An analysis of reports from the KNBS show that the age, education level and gender of taxpayers has been constantly changing between 1989 to 2019 which is within the duration the study focused on. The census reports from KNBS show that Kenya's population stood at 47.5 million in 2019, 38.6 million in 2009, 28.7 million in 1999 and 15.3 million in 1979. The growth rate has been exponential. The differences between the male and female population were also dynamic with KNBS reporting different ratios from 1989 to 2019. The ration in 1989 was 99.29 males per 100 females, in 1999 it was 98.57 males per 100 females, in 2009 it was 98.62 males per 100 females and in 2019 it stood at 98.7 males per 100 females. These differences in gender prompted this study to carry out research on how gender impacts tax collection.

1.1.2 Tax collection In Kenya

Kenya is one of the fastest growing economies in Africa. According to the Kenya Revenue Authority (KRA) annual revenue performance report for FY 2018/19 there was an increase in tax collection from 1.435 trillion shillings in FY 2017/18 to 1.580 trillion shillings in FY 2018/19. However, this revenue was still below the government's target of 1.643 trillion shillings (Ndiso, 2019). This would mean that the government is struggling to raise revenues to fund its budget. This budget deficit has been the case since independence because year in year out, the shortfall in revenue collected keeps increasing.

In recent years, the country has struggled with rising public debt, uncontrolled expenditure and missing revenue targets. Kenya's public debt stood at 5.902 trillion shillings with total domestic debt of 2.836 trillion and total external public liability of 3.066 trillion shillings in October 2019. External debt incurred between July and October 2019 was not factored in which could bring the total public debt to 6 trillion shillings. The bulk of this debt is from China and World Bank.

According to analysts from Citi Global Markets, four countries within the African continent are the recipients of the bulk of loans issued by the lender to countries within the continent between 2010 and 2017. These four countries are Kenya, Ethiopia, Angola and Congo. In October 2019, parliament approved an increase in public debt threshold to 9 trillion shillings. This was in a bid to enable the Treasury meet its annual budget going forward (Irungu, 2019). Treasury posits that Kenya's public debt is sustainable as long as it remains within the mark of 70% of GDP. This notwithstanding, the Kenyan government uses debt to fill the gap left by insufficient tax collection (Muyundo, 2012).

Kenya has also faced myriad challenges when it comes to tax collection. Developing countries normally have a huge informal sector and many SMEs (Ndichu, 2019). The informal sector in Kenya is huge but the GoK is facing challenges with collecting taxes from this sector. Since this sector is not within the tax bracket, the government is unable to collect sufficient revenue to finance its expenditures and ensure fairness in taxation. The Kenya National Bureau of Statistics estimated that 80% of employment in Kenya was attributed to the informal sector in 2018. Developing countries also rely on a small number of natural resources (Gordon, 2010). In Kenya, these are horticulture and tourism. The result of these is that developing countries face low tax

collection levels and a tapered tax base. It is also difficult to tax the informal sector because of improper record keeping and technical amalgamation.

Income from employment is seldom sufficient, therefore Kenyan's resort to informal side ventures to enable them to make ends meet. However, taxes are rarely paid on these informal side ventures. This has led to a complicated problem of the shadow economy. In this kind of economy, rules and regulations regarding cash transactions are rarely adhered to and tax evasion is also rampant (Braithwaite, 2016). Averagely, 1/3 of the economy of the world can be termed as 'shadow.'

The highest prevalence is in Sub-Saharan Africa where the shadow economy's weighted mean is 37.6% as a (percentage of the GDP). Most Kenyans still prefer engaging in cash transactions despite advances in digital money platforms e.g., M-Pesa. In a report by Financial Sector Deepening (FSD), 96% of payments to businesses in Kenya are made via cash. This could be attributed to two reasons: One is because the informal sector is comprised of 95% of the country's employment and business men and women. Out of these, only 34% own business bank accounts.

The repercussion of this is that only 19% of certified trade is conducted digitally. Second, the inclination towards unreceipted cash transactions is high because it enables entrepreneurs to improve their profit margins through evasion of tax and having a competitive advantage over the formal sector (Khadka, 2015). In Kenya there are 4 million registered tax payers in comparison to over 31 million Kenyans who comprise the working age populace. This means that the tax burden has been laid on a very tiny percentage of the populace majorly in the formal sector to manage the country.

The vicious circle of this is that the GoK is unable to meet its tax revenue targets resulting into an increase in taxation rates. This places more tax burdens on the already small group of taxpayers therefore encouraging SMEs in the licensed sector to join the shadow economy increasing the cost of living for everyone (Ndichu, 2019). In the 40th Annual Technical Conference by the Commonwealth Association of Tax Administrators (CATA) held in Malaysia (10th – 14th November 2019) on the theme, '*Addressing the Shadow Economy and Digitalisation in Securing Revenue for Sustainable Development,'* the Kenyan Commissioner for Domestic Taxes expressed credence in the strategies the KRA are undertaking to solve the shadow economy problem.

These strategies include: creation of inclusive strategies to allocate government tenders to youth and women, inclusion of tax amnesty on foreign earnings and assets, contemporizing of government amenities by a standard identifier (Huduma Number) and demonetization of the Kenyan shilling. These mechanisms have improved the possibilities of tax compliance and trackable transactions to improve tax collection (Ndiso, 2019).

Kenya has also prioritized system unifications to trace taxable transactions and is establishing an incentive system to regularize the informal sector. In addition to the above strategies, Kenya is also simplifying tax systems and mechanisms, working together with county governments to enforce tax laws, ensuring tax compliance demands for government tenders have been met and giving tax incentives to tax payers in a bid to counterbalance the shadow economy.

The GoK is also facing challenges with tax evasion. There is an estimated tax gap of over 40% in Kenya. Some citizens in Kenya have a poor awareness of tax laws. These particular group of Kenyan citizens is unable to effectively comply with tax laws (Braithwaite, 2016). Transfer pricing is another area where the GoK is facing challenges. Transfer pricing relates to the rules

and regulations that govern pricing of transactions between multinational corporations. Taxation of such organizations is difficult. Because of their size, they can easily adopt transfer pricing strategies that reduce their tax burdens and transfer profits to countries with lesser tax load. Transfer pricing problems have also been compounded by taxation of transactions related to e-commerce.

However, e-commerce has also furnished tax payers with distinctive avenues for better taxpayer services (Ndiso, 2019). In as much as IT has led to better tax administration systems, it still faces a lot of challenges. Kenya's taxation system in particular is wearisome in relation to time needed to assemble and submit tax returns. Another challenge is resolution of tax disputes which have a tendency of lagging for a distinct amount of time. Non-complex tax issues are frequently considered with no compelling solution offered. The process of resolving disputes has also been hampered by extended durations of inactivity by tax tribunals and an overall accumulation of cases in the courts.

Furthermore, execution of tax technology answers by the KRA with restricted taxpayer indulgence has led to voluminous challenges such as issuance of inaccurate VAT auto assessment (VAA) notifications to taxpayers. As a result of this, KRA stopped the VAA system momentarily to handle challenges brought forth by taxpayers. The VAA system is a system that ties input tax declared by buyers to the matching output tax charged by purchasers (Mukora & Okoyo, 2019). The system brings to the attention of the buyers and sellers any issues identified and apprises them to handle the issues. The KRA hopes that the VAA system will lead to a reduction in tax leakages by getting rid of imaginary input tax claims and pinpointing sellers who don't give out output tax to the KRA.

In the past, tax payers have lodged complaints over a significant number of cases of excessive enforcement measures employed by the KRA where taxpayers with a chronology of tax compliance issues were marked in the same way as swindlers. Such occasions lessen the trust and collaboration between KRA and taxpayers (Khadka, 2015). The KRA needs to contemplate adopting a more risk-based technique to enable it to differentiate between compliant and non-compliant tax payers. This will ensure it has a more targeted strategy and utilizes its resources more effectively.

Despite the above-mentioned challenges, Kenya has continued to make substantial improvement in lowering the tax compliance burden. Strategies such as amalgamation of taxpayer systems with KRA real-time reporting system are huge steps in improving tax payer compliance requirements. However, technology alone cannot metamorphosize a tax authority. The bare actuality of online tax remission and filing is not likely to improve Kenya's tax collection, (Mukora & Okoyo, 2019).

Expansive engagement with taxpayers is still a requirement and a transformation in the culture of revenue authorities would help in tackling some of the pertinent issues that taxpayers continue to face. However, advantages may be counted when appraising how new technology aids in sealing tax loop holes, how technology influences the essence and format of employment, generation of profit and the logical effect on taxable income avenues. An overall improvement in an economy's growth would lead to increase in tax collection.

The factors that play a substantial role in stifling in an economy's growth include: feeble institutions, fractured politics, a lack of clarity due to feeble news media. In addition to this, a feeble sense of national individuality and a poor principle for compliance can smother tax

collection (Brownsword et al., 2017). Citizens need to hold the executive accountable. They can do this by regulating and capping the executive's access to the exchequer. Citizens also need to call for more accountability from the government on the management of tax collected. More inhibitions on the executive can also foster more transparency on a country's tax regime.

1.2 Statement of the Problem

Despite the significant role played by tax collection in ensuring sufficient funds towards socio-economic development and growth in Kenya, the country has for a long time been registering tax collection deficits where in the fiscal year (FY) 2018/2019, KRA managed to collect Ksh.1.58 trillion against targeted tax collection of Ksh.1.82 trillion (KRA, 2019). This translated to a deficit of 15.19%, which would have forced the Government of Kenya to turn into borrowing to bridge this gap.

Consequently, the GoK is struggling with rising public debt and even struggling to raise revenues to fund for the missing revenue targets. Despite efforts by the KRA to improve tax collection through the usage of information technology in tax administration (compulsory online tax filing and tax remission platform (I tax)), solving the shadow economy problem, prudent handling of tax complaints and employment of taxpayer education services there is still a shortfall between the total amount of tax collected and tax targeted. The drawbacks in tax collection in Kenya have been widely attributed to demographic factors.

Empirical studies suggest that tax collection varies across demographic categories (Hofmann et al., 2017). Among empirical study's findings, significant differences have been confirmed between different demographic groups; income, education, age, gender and tax

collection. While some studies show significant relations with tax collection (Hofmann et al., 2017; Deyganto', 2018a; Fredrick & Peter, 2019; Masaku, 2019; Ndichu, 2019), others show no effect (Gachiku, 2015; Adimasu & Jerene, 2016; Defitri and Fauziati, 2018; Manchilot, 2018) and insignificant effect (Wudeneh', 2018; Fredrick & Peter, 2019) and others show negative effect (Widianto, 2015; Hofmann et al., (2017). More so, some of the studies exposed different concepts such as tax compliance (Mannan et al., 2020; Ashir & Syed, 2019; Assfaw & Sebhat, 2019; Masaku, 2019; Wudeneh, 2018) which is different from tax collection.

Thus, the studies had conceptual gaps while others had methodological gaps where as (Cylus et al., 2019) used cross sectional design, Ashir and Syed (2019) adopted logit regression as Deyganto (2018a) and Deyganto (2018b) employed both Pearson correlation Binary Logistic regression while Gachiku (2015) used Pearson's correlation and a logit model and Pretorius (2015) used Pearson's Chi-square test. The scope of most studies was restricted to geographical areas of certain areas where some were done for Ethiopia (Assfaw & Sebhat, 2019; Deyganto, 2018a; Deyganto, 2018) other in Uganda (Fredrick & Peter, 2019) limiting their generalisation.

Therefore, it remains unclear whether income, education, age and gender are determinants of tax collection in Kenya. The present study therefore provided adequate empirical evidence on income, education, age and gender as factors influencing tax collection in Kenya; adding to the existing array of knowledge.

1.3 Research Objectives

1.3.1 General Objective

To determine how demographic factors influence tax collection in Kenya

1.3.2 Specific Objectives

i. To establish the effect of income level on tax collection in Kenya

ii. To establish the effect of education level on tax collection in Kenya

iii. To assess the effect of age on tax collection in Kenya

iv. To ascertain the effect of gender on tax collection in Kenya

1.4 Research Questions

i. What is the effect of income level on tax collection in Kenya?

ii. What is the effect of education level on tax collection in Kenya?

iii. How does age affect tax collection in Kenya?

iv. How does gender affect tax collection in Kenya?

1.5 Justification of the study

Collection of tax in Kenya is the life-blood of the government. In the absence of taxes, the government is unable to offer public goods and services to its citizens. The public goods are important because without them, some of its citizens would lack these goods and services. In a bid to increase tax collection, demographic factors need to be looked into. This study sought to identify how the following demographic factors: education level, income level, age and gender impact tax collection in Kenya. This would help the Kenya Regulatory Authority (KRA) to identify which demographic factor most influences tax collection in Kenya.

1.6 Significance of the Study

The study sought to determine the demographic factors influencing tax revenue collection in Kenya. It would be relevant to the following groups of people:

1.6.1 Employees of the Kenya Regulatory Authority (KRA)

The information gathered from this study would aid policy makers at KRA when formulating policies regarding tax revenue collection. It would be used to expand the tax base to include the demographic category included in this research that generates the highest revenue. The country would benefit a lot from improved tax collection if the recommendations of this study were put into practice by the relevant authorities.

1.6.2 Parastatals

This study would aid parastatals in collection of tax revenue by enabling them to make more informed decisions. It would also enable the government to put in place structural necessities and legislation needed to improve tax collection.

1.6.3 Government ministries involved on collection of tax revenue

This study would aid government ministries in collection of tax revenue by enabling them to make more informed decisions. This would aid the government in making a proper judgement that looks at tax not as a punishment to its citizens, but an obligation.

1.6.4 Academicians/Researchers undertaking graduate programs in related topics

This research would aid academicians and researchers undertaking graduate programs in related topics in their quest for advanced knowledge. It would provide the relevant literature to the academicians/researchers undertaking their academic assignments on tax and revenue collection.

1.6.5 Tax payers

This research would help taxpayers by enabling them to understand why they pay the taxes they pay and at the rate they do. It would also improve their attitude towards relevant authorities collecting taxes because it would help them to understand the framework used by the government to collect taxes.

1.7 Scope of the Study

This study assessed the demographic factors that influence collection of tax in Kenya. The study used secondary data drawn from KRA and KNBS websites and was focused on Nairobi County. The data collection period was a duration of eleven years i.e., 2008 to 2018.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed theoretical and empirical literature on the demographic factors that influence collection of tax in Kenya. It looked into the findings, opinions, and publications from other authors related to the study and identified the missing gaps.

2.2 Theoretical Review

This study looked into six theories influencing tax collection. These theories are: Optimal tax theory, Theory of Planned Behavior, Keynesian theory of income and employment, Cost of service theory, Gender theory and Wear and tear theory.

2.2.1 Optimal Tax Theory

Optimal tax theory is founded on the government's desire to increase revenues through taxation but taxes influence economic choices negatively. It was developed by Frank P. Ramsey (1927). The issue at hand is therefore how to set up taxes to reduce the distortion which does occur. The government therefore needs to balance its ambition to raise optimal taxes with its citizens ability to pay the tax. According to (Emmanuele, 2012), the characteristics of a good tax system are: flexibility, stability, efficiency, equity and transparency. The government should therefore desist from increasing the burden of tax of its citizens and maximizing their welfare concurrently. Tax is the actual source of increasing revenue in governments.

Tax should be focused on welfare economic guidelines. The objective of government is maximization of social welfare (Emmanuele, 2012). This theory has been criticized on the grounds that it overlooks the administrative expenditures of tax structures. This theory is appropriate for this study because even though the government seeks to maximize tax collection through KRA, it should desist from elevating the taxes to levels which will burden tax payers. The greater the taxes to be paid, the greater the susceptibility of the tax payers to tax evasion.

This theory shows that there in need of adequate tax collection for achieving the government's objective. Thus, it was giving more information about tax collection to show that tax collection is indicated by the amount that the revenue body is able to collect within the taxation period. Based on the theory, the capacity of tax collection is determined by the citizens ability to pay the tax. Accordingly, this theory was important in informing the importance of tax collection as the dependent variable and this is determined by citizens ability to pay the tax which is influenced by demographic factors namely; income, education, age, and gender.

2.2.2 Theory of Planned Behavior

This theory was brought about by Ajzen in 1991 in an attempt to explain human behaviors. It is a fundamental theory within social psychology. It is an improved version of the Theory of Reason Action earlier developed by Ajzen and Fishbein in 1980 to explain conscious behaviors. According to the theory, individual mannerisms within the society are influenced by definite factors. However, the ability to behave in a certain manner is influenced on purpose by issues. Behavioral attitudes, personal standards and the thought behavioral control influence the motivation towards a given behavior.

These factors are influenced by reliance on humans, control belief and subjective beliefs. According to (Ajzen, 1991), aim indicates the level of personal efforts in organizing specific behaviors. Attitude towards mannerism is explored through individual standards as well as behavior controls. Personal norms indicate the beliefs of persons fundamental for those executing behavior. It is important to note that discerned manners are able to be displayed by a person thus having straight impact. In summary, this theory opines that the intent of persons integrated by discerned control over a given behavior has the ability to decide whether a person will participate in the mannerism.

This theory has been criticized on the basis of total focus on logical reasoning which excludes unpremeditated influence on behavior. The equilibrium between frugality and reasonability has also been questioned. Notably, most of the decisions are based on the educational level of persons. Thus, planned behaviour is subject to education level and based on this assumption, the decision to pay tax is determined by the education level of the tax payer. Since the purpose of this study was to determine how demographic factors influence tax collection in Kenya, education level strongly influences tax collection. This theory was thus found relevant to this study in assessing the second objective which is to assess the effect of education level on tax collection in Kenya.

2.2.3 Keynesian Theory of Income and Employment

This theory was developed by Keynes, a British economist in 1936. In the same year, he published a famous book entitled “General Theory of Income, Interest and Money” which led to an uprising in how people viewed economics and led to Macroeconomics being categorized as a

separate branch of economics, Demand generates its own supply, the determinants of equilibrium level of income and employment is ascertained by aggregate supply and aggregate demand.

The important assumptions of this theory are that it is possible for an economy to be in equilibrium even at less than full employment level. The existence of an economic structure does not guarantee equality between aggregate demand and aggregate supply at full employment as stipulated by classicals (Fletcher, 2014). Keynes demonstrated that an economy can be in equilibrium at less than full employment level. This is what brings about a difference between Classical and Keynesian theory.

The aggregate demand for goods and services directly influences quantities of output, income and employment (Fletcher, 2014). If there is an increase in aggregate demand, the amount of output increases by pushing up resources to meet increased demand. The result of this is that income will also increase. Therefore, demand generates its own supply. However, this does not refer to full employment level. The level of income at equilibrium may be above or below full employment level.

The real-world scenario is that an economy rarely functions at full employment equilibrium. In the short run, aggregate supply is not affected, aggregate demand is affected and it leads to changes in income and employment. This is the essence of the Keynesian approach. The fundamental issue of macroeconomics is the appropriation of the levels of income, employment and output (Fletcher, 2014). According to the Keynesian theory, there is equilibrium of income and employment levels at the point where aggregate demand is equal to aggregate supply.

Critics of this theory state that there is no practical relationship between effective demand and employment (Fletcher, 2014). This theory informs the study because income levels are largely dependent on employment which directly impacts tax collection through the various income taxes that the Government of Kenya has in place. This means that the income levels determine the ability of one to pay taxes. So, the theory was useful in explaining the first objective which was to determine the effect of income level on tax collection in Kenya.

2.2.4 Cost of Service Theory

The theory was created by Gordon (1959). It proposes that the state should impose taxes according to the real cost of service extended to its citizens by it. The citizens should bear the cost of the services they receive from the government. This theory implies that citizens are not entitled to any benefit from the state and if they do, they should pay the costs thereof. This theory, unlike the benefit theory, implies a balanced budget policy.

Critics of this theory have put forth the following arguments: Firstly, gauging the cumulative cost of services extended by the government is not easy and therefore distributing this total cost to the citizens is not easy. Secondly, the cost of service is dependent on the director. If the director is efficient, the cost of service would be lesser and vice versa. Thirdly, if this principle were to be applied, the poor individuals would incur more taxes since they benefit from the public services more (Goldberg, 2013). This is opposed to the principle of social justice. Fourthly, this theory posits that an individual is at liberty to refuse state services and by refusing, escape the obligation to pay taxes. This theory informs this study because effective tax compliance is influenced by the citizens' perceptions of how the government determines tax collection.

2.2.5 Gender theory

Gender theory came up in the 1970s and 1980s. It was popular in the USA and Great Britain with little followers from the continent of Europe. The theory defined masculinity and femininity as a group of mutually formed qualities that influenced the lives of men and women. It brought a different perspective from the one that looked at men and women as historically different only because of their biological influences. Gender theory influenced how people wrote and taught about men and women (Stewart & ANU Press, 2017).

Sex refers to attributes of the physical human body i.e., male, female or intersex. Gender on the other hand refers to societal expectations, duties and behaviors either feminine or masculine. There is an argument that masculine and feminine characteristics may be anchored in physiology. This theory informs this study which looked into the different attributes of men and women that influence their approach to tax collection. Accordingly, the theory relates gender to tax collection because it defines the gender relationship in terms of duties and behaviors. Based on this study, the duties and behaviors either feminine or masculine influence tax collection. Thus, the theory was used in assessing objective four; to assess the effect of gender on tax collection in Kenya

2.2.6 Wear and tear theory

The wear and tear theory was first proposed by a German biologist by the name Dr. August Weismann in 1882. It is also referred to as the simple deterioration theory or fundamental limitation theory. It posits that a human body is made up of cells and tissues with important parts that wear out leading to aging. Once the body is worn out, it can no longer function properly. Just like a car's components, human body parts also wear out because they have been used repeatedly.

This theory is reasonable because it echoes what happens in nature and around us and we can relate it to our experiences as well.

Proponents of the wear and tear theory support it because it is practical. The term aging is often used to refer to the continuous deterioration of an individual or an object. This theory also relates with the law of entropy (Infanti & Crawford, 2009). The law of entropy suggests that all structures tend towards continuous disorganization or a form of increased entropy. The physical changes in a human body's skin and bones are observable as they age. There are also a number of tasks that persons can no longer do because of aging.

Critics of this theory say that human bodies have the ability to repair and maintain themselves in case of damage. This is evidenced through healing of wounds and re-growth of nail and hair when cut. Another argument levelled against the theory by critics is that organisms as they grow, become stronger and stronger (Lasser, 2013). Unlike cars which are made strong and ready for use, human beings start out life as very fragile. Their strength and resilience, is built overtime with age.

The theory talks about physical changes in a human body's skin and bones which are observable as they age. It also shows that with these changes, a person may not be able to accomplish some tasks related to effective tax collection. Based on this assumption, the present study related the physical changes in a human body's skin and bones with aging and its influence on tax collection which informs objective three on the effect of age on tax collection in Kenya.

2.3 Empirical Review

The empirical review outlines the various information, studies and researches done on the subject by various authors. Various researches have been done both on the local and international level on demographic factors and tax collection. Tax collection is essential for most governments. This is because, without taxes, the governments would be unable to provide public goods and services to its citizens. How to raise tax is usually on the agenda of many governments every fiscal year. Several studies have been carried out by various authors on factors affecting tax collection.

Governments have adopted several strategies in a bid to collect tax. The focus has been primarily on measuring revenue leakages, an exercise that World Bank and IMF have been keen on. However, there are other strategies that governments should adopt to enhance revenue collection such as looking into the demographic factors affecting tax collection. The demographic factors that were looked into by the study are: age, education level, gender, and income level.

2.3.1 Age and Tax Collection

Studies have been undertaken to find out how age affects tax compliance. A country's demography comprises of both the young and the old. An ageing population comes about when the old-age population grows faster than the young-age population. The impact of this is felt both economically and socially (Assfaw & Sebhat, 2019). This happens when the fall in birth rate reduces the productive population while the increase in life expectancy increases the unproductive population. The effect of this is that an ageing population tends to increase the dependency ratio i.e., the ratio of unproductive population to productive population.

An ageing population also pushes up government spending. This happens because an increase in senior citizens would necessitate that the government spends more on pensioners, social security and health care Mannan et al., (2020). The net effect of this is that the government's income would be less than its spending leading to fiscal imbalances. An ageing population therefore leads to fiscal weakening and unsustainability in governments.

Felix and Watkins (2011) on the *Impact of Ageing US Population on State Revenues* revealed that, during retirement, a larger number of people earn and spend less therefore an ageing population would decrease government revenue streams such as Value Added tax and personal income taxes. These revenue sources comprise 80% of all government revenue. The study also noted that the average amounts of income tax from individuals varied across their age cohorts (Kresl, 2010). This is because the taxpayer's incomes and labor force participation varied with age. The average salary has a tendency of rising over a worker's career. This happens when workers move from part-time to full time jobs. In the full-time jobs, average salaries increase because of promotions, gaining experience and switching to higher paying jobs in other organizations. The salaries usually continue increasing until the workers retire.

Retirement usually happens in two ways: either exiting the labor force or retiring from full time employment to part-time employment (Masaku, 2019). Collection of income taxes usually adopts the disposition of wage income across age sets. They are least in younger years when workers get into entry level jobs, they increase in the Middle Ages and peak in the older ages then they start decreasing after retirement (Ashir & Syed, 2019). Age also affects sales tax collections also referred to as Value Added Tax. Consumers usually smooth their consumption patterns by borrowing early in life and spending from their savings later in life. Nevertheless, it follows a

pattern of rising then falling that is similar to that of income (Muyundo, 2012). Whereby, spending peaks for middle aged cohorts while younger individuals spend considerably less. When consumer spending rises and falls across age cohorts, sales tax also rises and falls.

James et al.'s (2002) state that, "the relationship between age and taxpayer's compliance is positive." A study by Richardson and Sawyer also found out that aged tax payers are increasingly tax compliant compared to younger ones. The younger generation is deemed more risk-taking and less sensitive to penalties. However, age was considered as a moderating variable because when considered alongside other factors affecting tax compliance, its influence was diluted. Kresl (2010) also agrees that more aged taxpayers are more permissive than younger taxpayers. This means that older taxpayers are more probable to pay taxes than younger taxpayers.

However, Widianto (2015) is of a different opinion. He is of the opinion that there is a negative relation between taxpayers' compliance and age i.e., the older the taxpayers the lesser the tax compliance and vice-versa. Other factors were also looked into during the study. For instance, James et al.'s (2002) found out that the participants knowledge in tax matters affected tax compliance. On the contrary, Devos (2014) used psychological questions to find out the tax payer's attitudes and perceptions. Deyganto (2018a) argues that attitudes and intuitions of taxpayers are more internal factors than the level of tax knowledge that are considered as more of external factors like training and education in tax.

According to the findings of Fredrick and Peter (2019), age has no substantial impact on taxpayer enforcement; however, Deyganto (2018a) found that age is a determinant of tax compliance attitude with taxation in the district. The findings of Deyganto's (2018b) research indicate that age has a substantial relationship with tax voluntary enforcement attitude. The results

of the Binary logistic regression study [suggested that age has a substantial impact on voluntary compliance attitude]. According to Defitri and Fauziati (2018), age has no bearing on tax enforcement. The age of the taxpayer has no bearing on tax enforcement.

Demographic considerations and the use of electronic reporting have little impact on tax enforcement, according to the results of this study. Other demographic factors impacting tax enforcement, such as gender, wages, occupation, and marital status, may be to blame. However, the study by Deyganto (2018a) and that by Defitri and Fauziati (2018) were conducted in Ethiopia, which restricted the applicability of their studies in Ethiopia and mad it difficult to use the study in Kenya. So, these studies suffered scope gaps.

The findings of Wudeneh (2018) study showed that age and gender had little bearing on tax enforcement conduct. Following that, it is essential to raise consciousness about the rewards of paying taxes and perform audits to deter noncompliance. Furthermore, further research into the impact of referral groups on enforcement behaviour will be beneficial, since societal expectations and ethical standards can generate various motivations for tax compliance. This study by Wudeneh (2018) was done in Ethiopia which makes it hard to apply the findings in the Kenyan context.

Hofmann et al.'s (2017) found that while age has the largest average impact size in the relationship with tax enforcement, it only accounts for around 1% of the difference in tax compliance. These results show that older taxpayers are more compliant than younger ones. The findings also suggest that data collection characteristics, such as the area where the data was collected, have an effect on the relationship between sociodemographic and tax enforcement. Age, in particular, varied by area in its relationship to tax enforcement (Wudeneh, 2018).

Though age and sex are stronger predictors of tax compliance in some northern hemisphere countries (Western Europe, Eastern Europe & Central Asia, North America), age is a poor predictor of tax compliance in some southern hemisphere countries (East Asia & Pacific, Sub-Saharan Africa, Latin America & Caribbean). Although changes in the ability to create income due to population ageing may be predictable, they are not usually quantified. As such, there is little evidence on how ageing can affect tax collection. The study by Hofmann et al. (2017) suffered methodological gaps of sampling in that the data was collected from several European countries by very few African countries over-representing effects in Europe but overlooking effects in African countries.

2.3.2 Gender and Tax Collection

Another factor that has been studied is the effect of gender on tax collection. For almost twenty years, there have been efforts to integrate gender perspectives into budgeting decisions by governments. The level of taxes to be charged should be matched with the expenditure levels. The eventual tax burden ratio for individual women and men is dependent on the distribution of gender for both taxes recompensed and services received (Fredrick & Peter, 2019). The goal of analyzing revenue on a gender basis is to observe how financial resources flow. This ensures the achievement of gender equity in generation of revenue and both sexes equally benefit from programs and services.

There is a huge concern that tax structures are biased against women (Adimasu and Jerene, 2016). These biases are both explicit and implicit. Explicit bias occurs when there are clauses in the tax system that handle women and men differently. An effective example is where married couples jointly file for income tax. The effect of this is that married women end up paying income

tax that is of a higher marginal rate than if they filed independently. Implicit bias on the other hand, occurs when tax structures purport to handle men and women equally but still appear discriminatory (Stock, 2014).

An example of this is taxes imposed on goods used by women for beauty such as artificial hair for braiding and weaving. Another example is the taxes imposed by governments on alcohol and cigarettes which manifest an implied partiality against men since men are primarily the buyers and consumers of these commodities (Brooks, 2011). In industrialized countries, there are personal income tax provisions that discourage female labor force participation.

Besley et al.'s (2019) submitted a paper which reported that, in comparison to men, women overestimate the risk of being caught for evasion and overestimate the fines for evasion. Women are more obedient to authority than men. The results of Ndichu's study (2019) revealed that demographic variables such as tax payer gender (male or female) have a positive and substantial impact on tax evasion among SMEs. Men and women vary dramatically in their ability to cooperate with taxes across countries and circumstances, according to the report (Grown & Valodia, 2010). Younger taxpayers are less concerned with fines and more willing to take risks. Taxpayers who are female are more compliant than those who are male. The study by Ndichu (2019) had methodological gaps where its only sampled 100 SMEs avoiding other sectors. Thus, it was not clear the effect of the gender and age on tax collection from tax payers in other sectors.

According to Fredrick and Peter (2019), gender plays a role in making tax enforcement easier and has a substantial impact on tax enforcement. Female taxpayers were more compliant than their male colleagues, which was significant. This is because women are often more concerned with the tax officer than men. Male taxpayers still take more risks than female

taxpayers, which helps to understand why they comply less than female taxpayers (Jeyapalan & Hijattulah, 2006). Women's empowerment and encouragement to engage in entrepreneurial business activities have recently improved in Uganda. In Uganda, women in industry are seen as the primary source of income, and therefore compliance with tax responsibilities is seen as one of the key factors in maintaining business stability. The study by Fredrick and Peter (2019) had contextual gaps where it was done among tax payers in Uganda, which suffers from different challenges than Kenya.

Gender was found to be a determinant of tax enforcement attitude with taxation in the region, according to Deyganto's (2018a) report. Sex of taxpayers is strongly associated with tax voluntary enforcement attitude, according to Deyganto (2018b). According to the findings of Wudeneh (2018)'s report, gender has no bearing on tax enforcement. Sex has an effect on tax enforcement, according to studies by Defitri and Fauziati (2018). All these studies used data from Ethiopia which constraints generalisation of the findings to Ethiopia. Thus, the studies had contextual gaps that were locked by the current study.

Hofmann et al.'s (2017) published a report that found that sex can explain a limited amount of variation in tax enforcement (about 0.36 percent). Women have a higher rate of tax enforcement than males. Furthermore, the findings indicate that gender and sex varied in their relationship to tax enforcement across regions. Though sex is a stronger predictor of tax compliance in some northern hemisphere countries (Western Europe, Eastern Europe & Central Asia, North America), it is a poor predictor of tax compliance in some southern hemisphere countries (East Asia & Pacific, Sub-Saharan Africa, Latin America & Caribbean). Data used in the study by Hofmann et al.'s (2017) was skewed to the European countries with very few representations from Africa. This

means that the findings informed more of the European than African challenges. So, the study had methodological gaps of sampling which were filled using the current study.

The results of McAuliffe (2017)'s study indicate a close link between gender and tax morale in the 12 countries studied. Men and women vary greatly in their ability to cooperate with their taxes across countries and circumstances, according to Widianto (2015). These disparities are striking, and they hold true across a diverse range of institutional options. Simply placed, in every country and under every circumstance, women continue to be much more tax compliant than men. The context of the study by was on tax morale but not tax collection which means it not clear the manner in which gender relates to tax collection. Thus, the study suffered from contextual gaps that were filled by the current study. Meanwhile, according to Widianto (2015), the gender of taxpayers has no statistically meaningful impact on individual tax enforcement.

Female taxpayers are more likely than male taxpayers to file a tax return, according to the findings. According to the findings of this report by Al-Mamun et al., (2014), both male and female respondents had identical compliant attitudes. while Widianto (2015) considered tax payers compliance with the tax system: category “a” tax payer’s in Addis Ababa, Al-Mamun et al., (2014) emphasised on tax Compliance attitude and behavior in Malaysia to show that these studies had contextual in that they did not show the manner in which tax payers compliance informs tax collection. Secondly, they were limited to certain geographical areas, Ethiopia and Malysia respectively. Thus, the applicability of the studies to the tax collection and demographics in Kenya was difficult.

2.3.3. Education and Tax Collection

Researchers found out that education and tax compliance have a positive correlation: (Fredrick & Peter, 2019; Masaku, 2019; Assfaw, & Sebhat, 2019; Ashir & Syed, 2019; Defitri & Fauziati, 2018; Deyganto, 2018a; Deyganto, 2018b; Wudeneh, 2018; Pretorius, 2015). The positive correlation between education and taxes can be attributed to improved tax fairness perceptions where the educated tax payers are capable of dealing with complex tax laws. Complex tax laws give an additional burden to tax payers to interpret the law and file returns. This often leads to tax evasion by taxpayers therefore taxpayer education is deemed critical (Braithwaite, 2016). The more educational attainment an individual had, the more he/she was likely to be hired and the more the level of salary he/she was likely to earn.

In Hungary, tax payers are expected to assess their own tax liability and pay their taxes through the National Tax and Customs Administration of Hungary (NTCA). For self-assessment of tax payers to be effective, tax payers should have a thorough understanding of tax rules and strategies and trust that the government would act justly and handle taxpayers according to their independent situations (Stock, 2014). This trust is built through tax payer education and promoting compliance and this gives the government a leverage over non-compliance. Public trust has also been achieved through the Tax Payers Deed which details a taxpayer's privileges and obligations, their expectations with regards to service standards and how their views can be considered.

According to the findings of Fredrick and Peter (2019) research, gender is significant, but education is not. According to the findings, the government should implement measures that make tax collection easier. As a result, the government should provide tax education to small-business

owners and sole proprietors around the country including by workshops and seminars, among other methods. Incentives for voluntary tax collection can also be introduced by the government.

Masaku (2019) revealed a positive significant relationship between taxpayers' education on value added tax (VAT) enforcement among micro and small enterprises in Embu County, Kenya, in his research. Despite the fact that there is a promising association between taxpayer education and value added tax enforcement, the study suggests that multiple obstacles remain, including a lack of understanding, technological sophistication, and taxpayers' unwillingness to apply value added tax on time. According to the results, despite the fact that taxpayer education has an effect on VAT enforcement, the majority of small-scale traders were unable to apply taxes on time and report real company profits. The study by Masaku (2019) was done across only one country out of the 47 Kenyan counties. This was a very small representation of the country's tax payers. This implies that the study had methodological gaps of sampling despite this being in Kenya.

According to the findings of Deyganto's (2018a) report, a lack of tax awareness is one of the determinants of tax enforcement attitudes in the region. The degree of education, on the other hand, has no bearing on the attitude toward tax enforcement. The results of this study show that education standard has little bearing on tax enforcement attitudes. This research by Deyganto's (2018a) suffered contextual gaps since it was done in Ethiopia; limiting applicability to Ethiopia and making it hard to use the findings in Kenya.

According to the findings of Defitri and Fauziati (2018), education has little effect on tax enforcement. The older the business and the higher the taxpayer's education, the less likely they are to comply with tax laws. The study's results led to the conclusion that demographic

considerations, such as education, had little impact on tax enforcement in Indonesia. Other demographic factors impacting tax enforcement, such as gender, wages, occupation, and marital status, may be to blame. The study by Defitri and Fauziati (2018) like the demographic factors to tax compliance and fell short of showing what this meant to tax collection.

Lack of tax awareness was found to be strongly associated with tax voluntary enforcement attitude in Deyganto's (2018b) report. The regression study also revealed that lack of tax awareness and the tax system's simplicity have a substantial impact on voluntary enforcement attitudes. Other factors, such as education level, were also found to be insignificant determinants of tax enforcement attitude in this report. Wudeneh (2018) found that education level is a major factor in tax enforcement in his research. Following that, it is necessary to raise public consciousness about the advantages of paying taxes, provide public education, and perform audits to deter noncompliance.

According to Wudeneh (2018), the quality of education has an effect on compliance. The results of the descriptive study showed that when one's education standard rises, so does the number of tax payers who are compliant. That was because, while trained taxpayers might be aware of noncompliance possibilities, their future improved understanding of the tax system, as well as their higher degree of moral growth, foster a more beneficial taxpayer mindset and, as a result, greater compliance. That is, a higher level of schooling correlates with a higher chance of compliance.

Individuals with a lower level of education are more tax compliant than those with a higher level of education, according to Hofmann et al., (2017). While the sociodemographic variables studied have a strong correlation with tax enforcement, their predictive capacity is minimal for age

and sex, and non-existent for education and income. The findings suggest that the location of data collection has an impact on the relationship between socio-demographics and tax enforcement. Education, in particular, varied by area in terms of its effect on tax enforcement (Pretorius, 2015). In terms of education, there are no significant differences between data collection regions; Oceania is the only exception to the general negative relationship between education and tax enforcement.

According to the findings of the report Gachiku (2015), education has an effect on tax enforcement procedures. Pretorius (2015) described a number of demographic factors that have a direct effect on small business registration enforcement. In each of the three tax groups listed, the demographic variables were examined separately. The findings then revealed that in the vast majority of cases, all three tax groups share the same demographic characteristics that have a positive or negative effect on the entity's enforcement. The company owners' educational degree has been described as a major demographic factor affecting payroll tax registration enforcement. If one's education level rises, the risk of enforcement rises as well. The studies by Gachiku (2015) and Pretorius (2015) were based more on enforcement than on tax collection. Thus, it was not clear the relationship between education and tax collection although education was related to enforcement.

Academic qualification and behavior are statistically relevant against conformity ($p=0.05$), according to the findings of Al-Mamun et al., (2014). Mogeni (2014) reported that education has a substantial impact on the level of tax enforcement among these registered businesses. As a result, it is wise for the tax system to improve education on how to file tax returns and the significance of paying taxes. As a result, the tax code can not only have a straightforward and simple checklist for filling out tax returns, but also improve taxpayer education programs so that taxpayers are aware

of their rights and responsibilities as taxpayers. Studies by Al-Mamun et al., (2014) and Mogeni (2014) were constraint to tax compliance but were silent on the manner in which education inform tax collection.

2.3.4 Income level and Tax Collection

Research has been carried out on the effect of income level on tax collection (Ashir & Syed, 2019; Ndichu, 2019; Defitri & Fauziati, 2018; Deyganto, 2018a; Deyganto, 2018b; Pretorius, 2015; Nathan, 2014). Researchers are not in agreement on whether it's the low-income or high-income taxpayers who are most compliant. The Ndichu (2019) research showed a favorable positive significant impact on the tax avoidance at revenue rate. While low-income taxpayers have a lower level of enforcement, middle-income taxpayers typically comply with tax laws. The amount of the company's profits thus affects the avoidance of conduct. Taxpayers at a lower level are relatively incompatible with tax legislation than taxpayers at a greater level of taxation. However, most of these studies had contextual gaps.

While studies by Defitri and Fauziati (2018), Deyganto (2018a), Deyganto (2018b) and Wudeneh (2018) were restricted to Ethiopian tax payers, the study by Pretorius (2015) was limited to SMEs in South Africa, data used in the study by Ndichu (2019) was from Kenyan SMEs. The study by Hofmann et al., (2017) overrepresented Europe while overlooking Africa and the study by Kasper et al., (2015) cared more about tax evasion. Due to these methodological, contextual and scope gaps, it was found difficult to apply findings of these studies in Kenya, hence the current study.

The Basheer et al.'s (2019) claimed that revenue from wages only reduces tax avoidance to a significant extent. However, studies have also shown that the link between tax evasion and income is statistically important. According to the findings of Defitri and Fauziati (2018), income has an effect on tax enforcement. According to the results of Deyganto's (2018b) Pearson correlation matrix, income level is strongly associated with tax voluntary enforcement attitude. The findings of Wudeneh's (2018) study showed that the majority of tax payers remain noncompliant, and that income level has little impact on tax enforcement behaviour.

Income level variations have had an effect on taxpayers evading activities, according to a report by Kasper et al., (2015). It is generally assumed that higher income taxpayers comply more, and lower-income taxpayers comply less. High-income earners are required to demonstrate privilege by agreeing with taxation, while low-income earners are expected to conceal their true income from tax officials. It was found in the study by Hofmann et al., (2017), that income was negatively related to tax compliance, but also income explains a negligible percentage (0.16%) of the variance of compliance.

However, low-income earners have been presumed to evade taxes more than those who earn more income (On the contrary, high-income earners are considered more likely to evade taxes than those who earn less). The different results in tax compliance have prompted this research to find out more about the effect of income level on tax collection.

A summary of the empirical literature review is captured in Table 2.1

TABLE 2.1: Analysis by Empirical Literature Review

Author and year	Title	Variable	Methodology	Findings	Gaps
Borrallo, F., Párraga-Rodríguez, S. & Pérez, J. J. (2021).	Taxation challenges of population ageing: comparative evidence from the European Union, The United States and Japan.	Age, population Tax burden (both direct and indirect), tax rates	Literature Review using secondary data	The oldest segment makes a larger contribution to public finances owing to its increased relative weight in the population	The scope of the study was on developed economies. It focused on ageing population.
Mannan, K. A. Farhana, K. M. & Chowdhury, G M. O. F (2020)	Socio-economic Factors of Tax Compliance: An Empirical Study of Individual Taxpayers in the Dhaka Zones, Bangladesh.	Cost of complying, tax compliance, tax rate	Ordered Logistic Regression	There is a statistically significant negative relationship between tax compliance and cost of complying. Tax rate has had a negative and significant impact on tax compliance	There are mixed outcomes such as high tax rate is positively related with noncompliance and negatively related with tax compliance.
Fredrick, W. W., & Peter, O. I. (2019).	The Influence of Demographic Factors on Tax Payer compliance in Uganda	Gender, age, education, tax compliance	Quantitative approach as well as factor analysis and correlational analysis	Gender is significant while age and education are not significant to taxpayer compliance	The results were informed by correlational analysis which could not show the direction of effect
Masaku, P. N. (2019)	Taxpayers Knowledge and Value Added Tax Compliance Among Micro and	Taxpayers' education, VAT compliance	Inferential analysis	There exists a positive significant relationship between taxpayers' education and	The context of the study was on VAT which does not encompass a large part of tax collection

	Small Enterprises in Embu County, Kenya			VAT compliance among SMEs in Embu County, Kenya.	It did not investigate other variables and their influence on tax collection in the context of individuals
Ndichu, R. (2019).	Effect of personal and non-personal factors on tax evasion among Small and Medium Enterprises in Nairobi County, Kenya	Tax rate, Tax evasion, economic factors and demographic factors	Descriptive analysis, Inferential statistics (correlational analysis and regression analysis)	Demographic factors have strong, positive and significant effect on tax evasion	Avoided showing how the demographic factors of individuals influence the tax collection but rather showed that some demographic factors advance to tax evasion
Boyd, D. (2019)	Demographics, Aging, and State Taxes	Aging population, income, state tax revenue,	Descriptive analysis of secondary data	Faster growth in the elderly population leads to lower incomes and many do not have wages hence less sales tax revenue	The scope was constraints to older population in a developed economy, USA The context was on sources of income.
Assfaw, A. H. & Sebhat, W. (2019).	Analysis of Tax Compliance and Its Determinants: Evidence from Kaffa, Bench Maji and Sheka Zones Category B Tax Payers, SNNPR, Ethiopia.	Tax compliance, education level, age and sex	Descriptive and Chi-Square and ordinal logistic regression model (econometric model)	Tax compliance was positively affected by education level of tax payers while age, sex of respondents were statistically insignificant factors influencing compliance behavior of tax payers	The context of the study was compliance while in methodology it employed logistics regression while relying on primary data which were opinions
Cylus, J., Roubal, T., Ong, P. & Barber, S. (2019).	The Economics of Healthy and Active Ageing.	Population age, ability to generate revenues for health	Cross sectional design	There is the challenge of improving tax collection among relatively	The focus was on health financing policy options which would not

	Sustainable health financing with an ageing population: implications of different revenue raising mechanisms and policy options			younger population with a large share of the population at older ages, revenues from social contributions are likely to decline substantially	readily inform tax collection
Ashir, T. & Syed H. (2019).	Examining different factors of income tax non-compliance in a small sample in Bangladesh	Age, Income, tax compliance, tax education	Logit regression analysis on primary data as well as Exploratory factor analysis to identify key factors	Higher income earners are more likely to comply with income tax Tax educated people are more likely to be income tax compliant compared to people who have no tax education. monthly income and tax significantly influence the income tax compliance, while age has insignificant influence.	The relationship between tax collection and the demographicfactors was not espoused despite income being related to tax compliance
Defitri, S. & Fauziati, P. (2018).	The effect of demographic factors and e-filling usage on tax compliance	Age, education, tax compliance.	Survey	Age and education do not have effect on tax compliance.	The study was restricted to Micro Small-Medium Enterprises in Padang City in Indonesia
Deyganto, K. O. (2018a)	Determinants of Tax Compliance Attitude with Taxation:	Gender, education level, age, Tax compliance	Binary logistic regression model and	Gender and, age are determinants of tax compliance attitude with taxation in the	It focused only on determinants of compliance attitude of Category “A” tax

	Evidence from Category "A" Taxpayers in Gedeo Zone, SNNPRS, Ethiopia		Pearson correlation	zone. Whereas, education level has no impact on tax compliance attitude	payers in Gedeo Zone, SNNPRS. Consequently, the findings of this study may be difficult to generalize about all tax payers
Deyganto, K. O. (2018b)	Factors Influencing Taxpayers' Voluntary Compliance Attitude with Tax System: Evidence from Gedeo Zone of Southern Ethiopia.	Gender, education level, age, voluntary compliance attitude	Pearson correlation Binary Logistic regression	Gender and age are key factors influencing taxpayers' voluntary compliance attitude with tax system in the study area. Whereas variables such as education level has insignificant influence on tax voluntary compliance attitude.	attitude of taxpayers in Gedeo Zone of southern Ethiopia. Thus, the findings of this study can be generalized for all taxpayers
Wudeneh, M. (2018).	Factors affecting tax payers' compliance with the tax system: category "a" tax payers in Addis Ababa	Education level, tax compliance	Regression analysis	Education level, is a significant factor of tax compliance	It combined education with no demographic factors such as tax audit, government spending, referent group, personal financial constraint, awareness on offences and penalty rate, and tax knowledge
Gitaru, K. (2017).	The Effect of Taxpayer Education on Tax Compliance in Kenya. (a case study of	Taxpayers' education, Tax Compliance	Quantitative analysis on primary data among SMEs	Taxpayer education has positively and significantly high relationship with tax compliance	Data was collected using a questionnaire which were mere opinions. The study restricted itself to SMEs

	SME's in Nairobi Central Business District)				
Gachiku, M. W. (2015).	Tax compliance by small and medium enterprises in Nairobi North Tax Region, Kenya	Tax rates Level of education Formal training	The Pearson's correlation and a logit model	Economic and social factors affect small and medium-scale enterprises' tax compliance	It collected data from SMEs but not individuals
Pretorius, M. M. (2015).	South African Small Business' taxation registration compliance	Age, gender, education, tax compliance	Pearson's Chi-square test	Age has very highly significant effect on income tax, very highly significant with payroll tax and insignificant with VAT; very highly significant effect on income tax, insignificant with payroll tax and gender has insignificant effect on VAT; and education has very highly significant effect on income tax, is very highly significant with payroll tax and insignificant with VAT	The findings showed mixed results
Widianto, R. (2015).	The Effect of Demographic Factors on Individual Tax Compliance in Duren Sawit (East	Age, gender, Tax Compliance	Regression analysis	Age level is statistically significant in influencing individual tax compliance while gender of taxpayers has no	Yielded mixed results

	Jakarta, Indonesia)			statistically meaningful impact on individual tax enforcementFemale taxpayers are more likely than male taxpayers to file a tax return	
Nathan, T. M. (2014).	The Impact of Demographic Factors on Tax Compliance Attitude and Behavior in Malaysia	Age Gender Education level Employees Income	Quantitative research and correlation analysis	Male and female respondents have similar compliant attitudes. While gender had significant effect; age, academic qualification and income had statistically insignificant effect on compliance attitude	The findings were informed by correlation analysis which does not show the nature of relationship.
Mogeni,. D (2014)	The effects of compliance cost on tax compliance of companies listed at the Nairobi Securities Exchange	Education, tax compliance level	Inferential analysis	The study found out that company specific factor; education has significant effect on tax compliance level	The study focused on firms listed at Nairobi Securities Exchange while it centered on compliance cost to measure tax compliance but did not explore other demographic measures to determine tax collection. Hence, the findings are not conclusive as to whether the relations between demographic variables relate to tax collection

2.4 Conceptual Framework

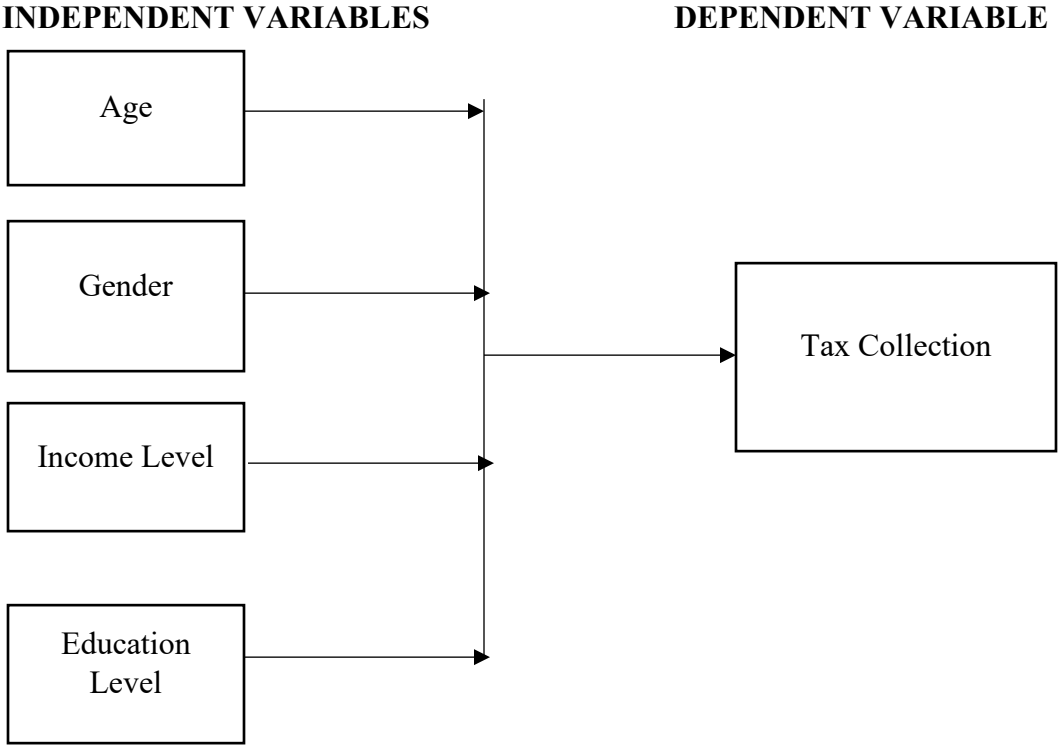


FIGURE 2.1: Conceptual Framework

2.5 Operationalization of Variables

This section identified the specific concepts that contributed to the key variables in the study. It sought to identify what defines the independent and dependent variable. The summary of the key items in the operationalization process was detailed in the table shown below.

TABLE 2.2: Operationalization Framework

Variable	Indicator	Scale
Dependent variable Tax collection	Amount of tax revenue collected per year	Interval
Independent Variables Age	Average age of tax payers as per the following age groups: 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-55, 60-64 65+ and above.	Interval
Education level	Average education level as per the following categories; Primary, Secondary, Teacher Trainees, post-Secondary.	Interval
Income level	Average income level (per capita) as per the following categories: Below 10,000, 10,000-14,999, 15,000-19,999, 20,000-24,999, 25,000-29,999, 30,000-49,999, 50,000-99,999, 100,000+	Interval
Gender	Proportion of female/male tax payers	Interval

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This section outlined the various stages and phases that were utilized in completion of the research. These stages and phases included: research design, target population, sampling design, data collection procedure and data analysis.

3.2 Research Design

This research utilized a descriptive research design. A descriptive research design is used to gather information related to the current stature of the circumstances and to narrate "what exists" with regard to variables or states in a situation (Gorard, 2013). This research design is applicable for this research because this research sought to identify the trends, frequencies and correlations of the demographic factors affecting tax collection in Kenya.

3.3 Target Population

Mugenda & Mugenda (2003) define a population as a category of persons or objects that have the same form of characteristics. The population is the subject matter of the study where a sample is extracted and analysed by the researcher to obtain the required information. The researcher obtained the required information by drawing a sample from the population. The research consisted of data collected from Nairobi County. Nairobi county is preferable because it is cosmopolitan in nature with Kenyans from different regions of the country residing there.

3.4 Sampling Procedure

The duration considered was approximately eleven years between years 2008 to 2018. The sampling procedure was probability sampling specifically simple random sampling technique. This enabled each unit included in the sample to have a known and similar opportunity of being incorporated into the study**.**

3.5 Data collection

The study utilized secondary data collected from the KRA and KNBS websites. The data covered the period from 2008 to 2018.

3.5.1. Reliability Tests

Using Cronbach's alpha approach, this research conducted reliability tests for internal consistency to obtain Cronbach's alpha (α) coefficient. This coefficient (α) with its absolute is between Zero (0) and One (1) (Kothari (2012). Kothari (2012) indicates that in social sciences when Cronbach's alpha (α) is greater than or equal to 0.7, that tool is highly consistent otherwise it is inconsistent. A consistent instrument is accepted for the study to be used in collecting data while an inconsistent one is reviewed until it is consistent. The data for reliability testing was collected from tax records for the year 2007. On collecting the response, the study analysed the data to produce results in Table 3.1.

TABLE 3.1: Reliability Statistics

Item	Cronbach's Alpha if Item Deleted
Tax Collection	0.799
Income levels	0.847
Education Levels	0.901
Age	0.762
Gender	0.835
Cronbach's Alpha = 0.876, N= 5	

Source: Research Data (2021)

Informed by Table 3.1, Cronbach's alpha (α) coefficient among the five variables (N=5) was 0.876, an indication of highly reliable tool in that the reliability coefficient was approaching 1 while threshold is 0.7 (Kothari, 2012). Using the threshold provided Kothari's (2012), then it was deduced that the tool was having high internal consistency and highly consistent over time; Tax collection in Kenya (α = 0.799), Income levels (α = 0.847), Education Levels (α = 0.901), Age (α = 0.762), and Gender (α = 0.835). Since the instrument was found to be highly consistent, the research retained all the items in the tool and presented the tool for administration.

3.6 Data Processing and Analysis

Data obtained was examined using descriptive statistics and multiple regression analysis to evaluate how the dependent and independent variables are interconnected. The data on education level, income level, gender balance and age were regressed on tax collection. Data obtained was also examined using the STATA 13.

3.6.1 Analytical model

Regression analysis was utilized in testing the relations between tax collection in Kenya and the demographic characteristics namely: age, income level, gender, and education level. The regression equation is shown below;

$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e.$ ……(i)

Where;

Y = Tax collection

β_0 = Constant

β_1-β_4 = Coefficients associated with the independent variables

X_1 = Income level

X_2 = Education level

X_3 = Age

X_4 = Gender

ε = Error Term

3.7 Diagnostic tests

The study undertook diagnostic tests to determine the nature of the data and to determine the best model for analysis. The following are some of the tests that were employed to certify that

the data meets the basic presumptions of multiple linear regression model and the criteria used for decision making: Normality, Multicollinearity, Heteroscedasticity and Autocorrelation. These diagnostic tests have been explained below:

3.7.1 Normality

Normality tests were done to examine if the sample represents a normally distributed population through Shapiro Wilk W test. In this test, the null hypothesis states that the data is from a normally distributed population. When the P>0.05, the null hypothesis is accepted.

3.7.2 Multicollinearity

Multicollinearity alludes to the interconnectedness among independent variables. Multicollinearity is present when there is high correlation between independent variables ($r \geq 0.9$). This study utilized two tests: Variance Inflation Factor (VIF) and Pearson correlation coefficient (r) to check for multicollinearity. Variance Inflation Factor is used to identify multicollinearity in an Ordinary Least Squares (OLS) regression that evaluates the estimates of variance in the model. With regards to this model, the estimate of variance increases because of collinearity. Wooldridge (2000) opines that variance of the OLS should be tested using the following formula:

$$VIF = \frac{1}{1 - R^2}$$

The greater the VIF, the more the multicollinearity. If the VIF is less than 10, the model does not suffer from multicollinearity.

3.7.3 Heteroscedasticity

Heteroscedasticity refers to unequal scatter. It is present when the standard errors of a variable observed over a specific duration are irregular. When the error term is constant, the data suffers from homoscedasticity. This study tested heteroscedasticity issues at a level of 5%, using Breusch-Pagan / Cook-Weisberg test and there would have been heteroscedasticity if the p-value was less than 0.05. Breusch-Pagan / Cook-Weisberg tests the null hypothesis that the error variances are all equal versus the alternative that the error variances are a multiplicative function of one or more variables.

3.7.4 Autocorrelation/Serial correlation

Autocorrelation/Serial correlation is a form of data which indicates the extent of relatedness between the values of identical variables over consecutive intervals of time. This research adopted the Durbin-Watson test to identify autocorrelation. The formula that was used is as below:

$$DW = \frac{\sum_{t=2}^{T}(e_t - e_{t-1})^2}{\sum_{t=1}^{T} e_t^2}$$

Where: E_t represents the residuals from an ordinary least squares' regression.

The Durbin-Watson test reveals statistics between 0 to 4 where estimates between 0 to less than 2 show a positive autocorrelation while estimates above 2 to 4 show a negative autocorrelation. An estimate of 2 shows no autocorrelation.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter details the analysis, presentation and interpretation of the data pertinent to demographic factors influencing tax collection in Kenya. The objective of the study was to establish the demographic factors influencing tax collection in Kenya. Specifically, the study sought to determine the effect of age, income level, gender and education level on tax collection in Kenya**.** The data was analyzed using STATA 13 and presented in frequency tables. Descriptive and inferential statistics were used to discuss the findings of the study.

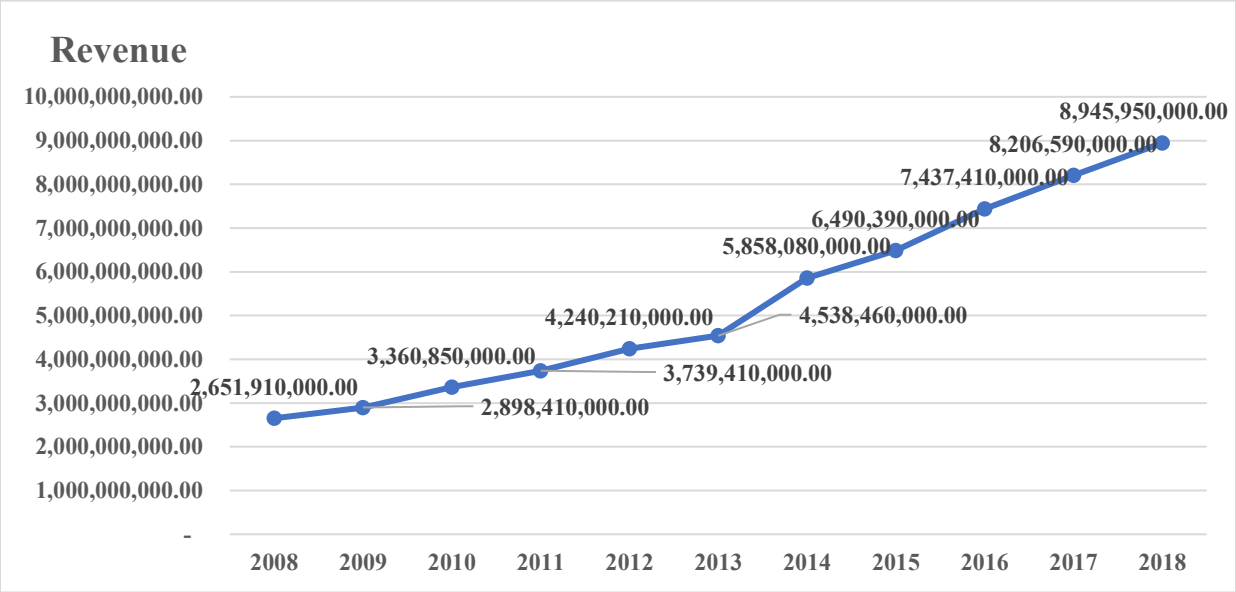
4.1.1 Response rate

The study collected its data from the institutions responsible for the country's tax related data; Kenya Revenue Authority (KRA) and the Kenya National Bureau of Statistics (KNBS). This data was for the period covering the years 2008 and 2018; a span of 11 years.

4.2 Tax collection

The study assessed the tax collection over the period between the years 2008 and 2018 to yield the results in Figure 4.1

FIGURE 4. 1: Analysis by Tax Collection Between 2008 and 2018



Source: Research data (2021)

These results show that the tax collection was increasing over the period of the study starting from Kshs. 2.651 billion in the year 2008 up to Kshs. 8.945 billion in the years 2018. There was consistent increase in tax collection between the year 2008 to 2012, which slackened in the year 2013 followed by a sharp increase from Kshs. 4.538 billion in the year 2014 to Kshs. 5.858 billion in the year 2015. Then the tax collection started increasing at a consistently higher growth rate than that of between 2008 and 2013.

4.3 Demographic Characteristics and Tax Collection

The study analysed the demographic factors of the individual taxpayers in the country in terms of their age, education level, income level and their gender as guided by the study objectives. Importantly, the study captured their Mean, Standard deviation, Maximum and

Minimum values. The number of observations were 11 for each analysis. Thereafter the study assessed the effect of the variables on tax collection using inferential analysis.

4.3.1 Income Level and Tax Collection

The first objective was to establish the effect of income level on tax collection in Kenya. The study assessed the performance of income levels over the period of the study to obtain the results in table 4.1.

TABLE 4.1: Analysis by Income Levels of Taxpayers Between 2008 and 2018

Variable	Obs	Mean	Std. Dev.	Min	Max
Less than 10,0000	11	210,354.50	29,472.20	174,500.00	258,500.00
Shs 10,000 to 14,999	11	656,318.20	379,146.40	409,300.00	1,429,400.00
Shs 15,000 to 19,999	11	3,245,282.00	808,789.40	2,065,600.00	4,058,700.00
Shs 20,000 to 24,999	11	3,910,109.00	510,694.00	3,051,000.00	4,717,100.00
Shs 25,000 to 29,999	11	4,538,700.00	696,145.50	3,440,300.00	5,640,600.00
Shs 30,000 to 49,999	11	6,063,855.00	1,379,241.00	4,008,000.00	8,113,300.00
Shs 50,000 to 99,999	11	4,855,718.00	1,113,151.00	3,384,900.00	6,510,000.00
Shs 100,000 and above	11	665,954.50	98,887.86	517,300.00	825,700.00

Source: Research Data (2021)

The annual average number of taxpayers earning less than Kshs, 10,000 was 0.210 million and their maximum number was 0.258 million with their yearly minimum being 0.174 million and a SD of 0.029 million. This was the smallest group of taxpayers. The average number of taxpayers earning between Kshs. 10,000 and 14,999 was 0.656 million with; maximum of 1.429 million, minimum of 0.409 and a high standard deviation of 0.379 million. The results showed that the average number of taxpayers earning between Kshs 15,0000 and Kshs 19,999 was 3.245 million with a maximum of 4.059, a minimum of 2.066 million and SD of 0.808.

The average number of taxpayers, earning between Kshs, 20,000 and 24, 999 was 3.910 million and the maximum number in year within this group was 4.717 million and their minimum was 3.051 with as SD of 0.510 million. A Mean (M) of 4.538 was registered among the number of taxpayers earning between Kshs, 25,000 and 29,999. In this category, the maximum number of taxpayers was 5.64 million with a minimum of 3.44 million and SD of 0.696 million.

The average contribution of each income band to tax collection is shown in Table 4.2

TABLE 4.2: Average Contribution of Each Income Bracket

Income Bracket	Average	Contribution
Shs 30,000 to 49,999	6,063,855.00	25.11%
Shs 50,000 to 99,999	4,855,718.00	20.11%
Shs 25,000 to 29,999	4,538,700.00	18.80%

Shs 20,000 to 24,999	3,910,109.00	16.19%
Shs 15,000 to 19,999	3,245,282.00	13.44%
Shs 100,000 and above	665,954.50	2.76%
Shs 10,000 to 14,999	656,318.20	2.72%
Less than 10,000	210,354.50	0.87%

Source: Research Data (2021)

This highest number of taxpayers were those earning between Kshs. 30,000 and Kshs. 49,999 since their annual average was 6.063 million (25.11%), with maximum in a year being 8.113 million and a minimum of 4.008 million, however, the SD was very high at 1.379, this implies a large deviation from the mean annual value. The mean number of taxpayers earning Kshs. 50,000 and 99,999 was 4.856 (20.11%) with a maximum of 6.51 million, a minimum of 3.385 million and SD of 1.113 million. The next group was those earning from Kshs. 25,000 to 29,999 contributing 4.539 million which was 18.80% followed by those earning between Kshs. 20,000 and 24,999, contributing an average of Kshs. 3.91 million which was 16.19% of the total contribution and then those earning from Kshs. 15,000 to 19,999 who contributed an average of Kshs. 3.245 million; translating to 13.44% contribution. The annual average number of taxpayers earning Kshs. 100,000 and above was 0.666 million (2.66%) while the maximum was 0.826 million, minimum of 0.517 million and SD of 0.099 million. Those earning less than Kshs. 10,000 contributed the least at 0.21million, a paltry 0.87% of the total tax collection.

Generally, these findings agree to the research by Ndichu (2019) of positive significant impact on the tax avoidance at revenue rate. However, they somehow differ with the findings that as low-income taxpayers have a lower level of enforcement, middle-income taxpayers typically comply with tax laws. In the case of the present study, it is the low-income earners (earning between Kshs 30,000 to 49,999) who are more compliant and had the highest effect on tax collection. This negates the assertion that taxpayers at a lower level are relatively incompatible with tax legislation than taxpayers at a greater level of taxation. The findings also disagree to those in the study by Hofmann et al., (2017) that income is negatively related to tax compliance and that also income explains a negligible percentage of the variance of revenue compliance. In the present study there was significant effect of income level on tax collection in Kenya.

Based on the assertion by Basheer et al.'s, (2019) that revenue from wages only reduces tax avoidance to a significant extent, then it may be claimed that those earning high income in Kenya are more exposed to tax evasion. This justifies assertions in the findings of Defitri and Fauziati (2018) that income has an effect on tax enforcement as well as the results of Pearson correlation matrix by Deyganto's (2018b) that income level is strongly associated with tax voluntary enforcement attitude. The findings in the present study however disagree to those in the study by Wudeneh's (2018) which revealed that the majority of tax payers remain noncompliant, and that income level has little impact on tax enforcement behaviour. The current study findings further disagree to those by Kasper et al.'s (2015) that income level variations have had an effect on taxpayers evading activities. It is generally assumed that higher income taxpayers comply more, and lower-income taxpayers comply less. According to Kasper et al.'s (2015) high-income earners are required to demonstrate privilege by agreeing with taxation, while low-income earners are expected to conceal their true income from tax officials. This is not true in the case of the

present study where more revenue was collected from low-income earners and the low-income earners also had significant effect on revenue collection.

4.3.2 Education Level and Tax Collection

The second objective was to establish the effect of education level on tax collection in Kenya. The study assessed the distribution of the taxpayers with respect to their educational level to produce the results in Table 4.3.

TABLE 4.3: Analysis by Education Level of Taxpayers Between 2008 And 2018

Variable	Obs	Mean	Std. Dev.	Min	Max
Primary	11	9,755,673.00	606,777.90	8,563,800.00	10,500,000.00
Secondary	11	2,152,990.00	558,539.70	1,382,210.00	2,942,700.00
Teacher Training	11	34,916.36	7,042.67	24,430.00	42,350.00
Post-Secondary	11	161,998.20	88,695.19	82,650.00	363,840.00

Source: Research Data (2021)

These results show that the mean number of the taxpayers, between 2008 and 2018, who were primary school dropouts, was 9.75 million while the maximum number in a given year was 10.5 million and the minimum was 8.56 million. The standard deviation was high at 0.6 million. The average number of taxpayers, who were secondary school leavers, was 2.15 million with a

maximum of 2.9 million in a given year, minimum of 1.38 million and a high SD of 0.558 million. The results show that the average number of taxpayers who had attended teacher training was 0.034 million and their maximum was 0.042 million with minimum being 0.024 million and moderate SD of 0.0007 million. In these results, it was found that the average number of taxpayers who had post-Secondary education was 0.161 million with a maximum of 0.363 million, a minimum of 0.083 million and a standard deviation of 0.009 million.

This agrees to Fredrick and Peter (2019) that education is not significant to tax collection since primary school dropouts are the majority. However, the study by Wudeneh (2018) revealed that education level has an impact on tax compliance. Such that as education level increases, the number of compliant tax payers' increase. This is because educated taxpayers may be aware of non-compliance opportunities, but their potentially better understanding of the tax system and their higher level of moral development promotes a more favorable taxpayer attitude and therefore greater compliance. So, education is directly linked to a likelihood of tax compliance and hence higher tax collection, in fact the present study shows that education significantly affects tax collection positively. The regression model by Al-Mamun et al.'s (2014) shows that academic qualification has a statistically significant effect on tax compliance.

These findings agree to those in the study by Masaku (2019) which revealed a positive significant relationship between taxpayers' education on value added tax (VAT) enforcement. According to the findings of Deyganto's (2018a) the degree of education, on the other hand, has no bearing on the attitude toward tax enforcement. The results of this study show that education standard has little bearing on tax enforcement attitudes. However, in this study, education had a significant effect on revenue collection to negate findings in the study by Deyganto's (2018a).

Despite disagreeing with Deyganto's (2018a), the findings in the present study agree to findings of Defitri and Fauziati (2018) that the higher the taxpayer's education, the less likely they are to comply with tax laws. The findings in the present study show the trained teachers as having significant effect on revenue compliance against the findings by Defitri and Fauziati (2018).

Lack of tax awareness was found to be strongly associated with tax voluntary enforcement attitude in Deyganto's (2018b) report. The regression study also revealed that lack of tax awareness and the tax system's simplicity have a substantial impact on voluntary enforcement attitudes. Other factors, such as education level, were also found to be insignificant determinants of tax enforcement attitude in this report. Wudeneh (2018) found that education level is a major factor in tax enforcement which totally agrees to the present research. Wudeneh (2018) suggests that, it is necessary to raise public consciousness about the advantages of paying taxes, provide public education.

According to Wudeneh (2018), the quality of education has an effect on compliance. The results showed that when one's education standard rises, so does the number of tax payers who are compliant. That was because, while trained taxpayers might be aware of noncompliance possibilities, their future improved understanding of the tax system, as well as their higher degree of moral growth, foster a more beneficial taxpayer mindset and, as a result, greater compliance. That is, a higher level of schooling correlates with a higher chance of compliance. According to Hofmann et al.'s (2017) individuals with a lower level of education are more tax compliant than those with a higher level of education, which was confirmed in the present study, However, according to the findings of the report by Gachiku (2015), education has an effect on tax enforcement procedures, which was in disagreement with the present study findings. On contrary,

Mogeni (2014) reported that education has a substantial impact on the level of tax enforcement which was asserted by the current study finding.

4.3.4 Age and Tax Collection

The third objective was to assess the effect of age on tax collection in Kenya. On assessing the distribution of the taxpayers according to their ages, the results in table 4.4, were obtained.

TABLE 4.4: Analysis by Age of Taxpayers Between 2008 and 2018

Variable	Obs	Mean	Std. Dev.	Min	Max
20 to 24 Years	11	4,356,897.00	261,011.50	4,024,959.00	4,883,716.00
25 to 29 Years	11	3,877,620.00	289,627.40	3,387,494.00	4,216,861.00
30 to 34 Years	11	3,285,463.00	387,615.80	2,712,833.00	3,859,483.00
35 to 39 Years	11	2,634,101.00	362,954.10	2,115,012.00	3,208,096.00
40 to 44 years	11	2,043,280.00	309,631.70	1,615,366.00	2,534,811.00
45 to 49 Years	11	1,559,148.00	31,249.70	1,248,906.00	1,946,560.00
50 to 54 Years	11	1,187,591.00	164,505.00	964,959.00	1,458,584.00
55 to 59 Years	11	897,040.50	124,870.50	714,115.00	1,098,097.00
60 to 64 years	11	640,579.80	116,559.40	466,761.00	813,909.00

65 years and above	11	945,699.70	141,430.80	788,477.00	1,202,169.00

Source: Research data (2021)

These results show that the annual average of taxpayers aged between 20 and 24 years was 4.356 million while their maximum was 4.884 million and minimum of 4.024 million in a year with a SD of 0.261 million. The average number of taxpayers aged between 25 years 49 years was 3.878 million and the maximum annual number was 4.217 million while the minimum was 3.387million and the SD was 0.29 million. The results also show that the average number of taxpayers aged between 30 and 34 years were 3.285million with as a standard deviation of 0.388 where the minimum was 2.713 million and the highest was 3.859 million.

The taxpayer aged between 35 and 39 years were 2.634 with a standard deviation of 0.363 million while the least number in year was 2.115 million and the highest was 3.208 million. The average taxpayers aged between 40 and 44 years was 2.043 million with a standard deviation of 0.309 million, a minimum of 1.615 million and a maximum of 2.535. The mean of taxpayers aged between 45 and 49 years was 1.559 million while the standard deviation was 0.031 million, the minimum was 1.249 million and maximum of 1.947 million.

The average number of taxpayers aged between 50 and 54 years was 1.188 million while standard deviation was 0.165 million, the minimum was 0.965 million and the highest number was 1.459 million. Those who were aged between 55 and 59 years were an average of 0.897 million with a standard deviation of 0.125 million with minimum being 0.714 million and the maximum being 1,098 million. The average number of taxpayers aged between 60 and 64 years was 0.641 million with as standard deviation of 0.117 million while the minimum number was

0.467 million and the maximum was 0.814 million. The mean number of taxpayers aged 65 years and above was 0.946 million with a standard deviation of 0.141 million while the maximum number was 0.788 million and maximum was 1,202 million.

This agrees to the findings by Widianto (2015) that age is statistically significant in influencing individual tax compliance. However, Fredrick and Peter (2019) found that age does not significantly affect tax collection. That is the findings in the present study differ with those by Fredrick and Peter (2019), that age has no substantial impact on taxpayer enforcement but they agree with Deyganto (2018a) that age is a determinant of tax compliance attitude with taxation in the district. Furthermore, Deyganto's (2018b) research indicate that age has a substantial relationship with tax voluntary enforcement attitude. The findings of Wudeneh's (2018) study showed that age and gender had little bearing on tax enforcement conduct while Hofmann et al. (2017) found that while age has the largest average impact size in the relationship with tax enforcement, it only accounts for around 1% of the difference in tax compliance.

4.4.4 Gender and Tax Collection

The fourth objective was to ascertain the effect of gender on tax collection in Kenya. The study shows the distribution of taxpayers according to the two genders; male and female as shown in Table 4.5.

TABLE 4.5: Analysis by Gender of Taxpayers Between 2008 And 2018

Variable	Obs	Mean	Std. Dev.	Min	Max
Female	11	10,939,662.64	1,205,077.00	9,215,599.00	12,868,324.00
Male	11	10,487,757.09	1,165,742.00	8,823,283.00	12,353,962.00

Source: Research data (2021)

The average number of female taxpayers over the study period was 10.94 million while the yearly maximum number of female taxpayers was 12.868 million with a minimum of 9.216 million and SD of 1.205 million. On average, the number of male taxpayers was 10.488 million with a maximum of 12.354 million, annual minimum of 8.823 million and a SD of 1.166 million. The findings in the present study agree with the findings by Besley et al.'s (2019) that in comparison to men, women overestimate the risk of being caught for evasion and overestimate the fines for evasion. So, women are more obedient to authority than men, which was confirmed in the present study.

These agree to findings in the study by Besley et al.'s (2019) that taxpayers who are female are more compliant than those who are male. However, the findings by Besley et al.'s (2019) as well as Fredrick and Peter (2019) report might be used to justify the findings in the present study based on Deyganto's (2018a) report that gender was found to be a determinant of tax enforcement attitude with taxation based in the region. Sex of taxpayers is strongly associated with tax voluntary enforcement attitude. More so, Hofmann et al.'s (2017) posits that sex varied in their relationship to tax enforcement across regions. Though sex is a stronger predictor of tax

compliance in some northern hemisphere countries (Western Europe, Eastern Europe & Central Asia, North America), it is a poor predictor of tax compliance in some southern hemisphere countries (East Asia & Pacific, Sub-Saharan Africa, Latin America & Caribbean). Meanwhile McAuliffe (2017)'s study indicate that there is a close link between gender and tax morale. So, men and women vary greatly in their ability to cooperate with their taxes across countries and circumstances, according to Widianto (2015). These disparities are striking, and they hold true across a diverse range of institutional options.

4.4 Inferential analysis

After assessing the properties of the demographic factors of the individual taxpayers, the study sought to establish the effect of all these factors jointly on tax collection using inferential analysis. In this exercise, the study computed the rate of change of each of these indicators (change form from one month to the next) so as to obtain values for; income levels; education level, age, gender and tax collection respectively. That is for each indicator band, the study obtained the difference between the value for previous from value of the current month and divided this by the value of the current month. Then an average of these bands was obtained to yield to that indicator. For example, as [female taxpayer for June 2011 – female taxpayers for May 2011]/ female taxpayers for June 2011 and [male taxpayer for June 2011 – male taxpayers for May 2011]/ male taxpayers for June 2011; then get the average of the female and male.

These values were then used in the inferential analysis to obtain the associated relationships within the period of the study. At a 5% significance level, this research used inferential analysis, which included correlation and regression analysis. While correlation analysis was used to determine whether there was an association between study variables,

multiple regression was used to forecast a model that would be used to estimate the DV in the future.

4.4.1 Testing the Classical Linear Regression Model (CLRM) assumptions

In advance of submitting the data for inferential analysis, the study tested that data for the basic Classical Linear Regression Model (CLRM) assumptions; normality, multicollinearity, autocorrelation, and heteroscedasticity to yield results captured in this section. To ensure that the data utilised in the regression model was normally distributed, it was checked for normality. The Shapiro-Wilk W-test was employed.

In testing for normality, when the mean (M) and standard deviation (SD) of the data being examined are equal, it is called normal otherwise, it is called non-normal. The test yields a probability value (p-value) between 0 and 1, and if the p-value is greater than 0.05, the residual is asymptomatically normal, and the data is thus normally distributed. When the p-value is less than 0.05, the data is not normally distributed, and it should be examined until it is. In the case of the present study, the results in Table 4.6 were produced from normality tests.

TABLE 4.6: Normality Tests

Variable	Obs	W	V	z	Prob>z
Tax Collection	110	0.98619	1.235	0.471	0.31899
Income levels	110	0.91637	7.479	4.487	0.00000
Education Levels	110	0.93760	5.581	3.834	0.00006
Age	110	0.93996	5.369	3.748	0.00009
Gender	110	0.98881	1.001	0.002	0.49937

Source: Research Data (2021)

According to the results in Table 4.6, there was no normality on the data variables since the p-value for each; income levels ($p<0.01$), education levels ($p<0.01$), and age ($p<0.05$) was less than 0.05. although Tax Collection ($p=0.319$) and gender ($p=0.49937$) were normally distributed the entire data was not normal. Since the data was non-normally distributed, it was normalized. After normalization another Shapiro-Wilk W-test was performed to produce results in Table 4.7.

TABLE 4.7: Normalised Data Results

Variable	Obs	W	V	Z	Prob>z
Tax Collection	110	0.98523	1.321	0.620	0.2676
Income levels	110	0.98905	0.979	-0.047	0.5186
Education Levels	110	0.98329	1.494	0.896	0.1852
Age	110	0.98161	1.645	1.110	0.1336
Gender	110	0.98327	1.496	0.898	0.1847

Source: Research Data (2021)

According to Table 4.7, all data variables were normally distributed since the p-value for each research variable was greater than 0.05. The findings reveal that tax collection ($p=0.2676$), income levels ($p=0.5186$), education levels ($p=0.1852$), age (0.1336) and gender ($p=0.18473$) were normally distributed.

When IVs are highly correlated with one another and so share the same information, multicollinearity concerns occur. This issue decreases the predictive ability of the individual IVs involved, and in certain cases, none of the IVs involved contributes individually and significantly

to estimating the model once the other IV is added. When the variance inflation factor (VIF) is more than 10 and the tolerance is less than 0.1, multicollinearity exists.

Table 4.8 shows the findings of the current study.

TABLE 4.8: Tests on Multicollinearity Issues

Variable	VIF	Tolerance =1/VIF
Income levels	1.32	0.759081
Education Levels	1.27	0.785558
Age	1.13	0.887751
Gender	1.02	0.979235
Mean VIF	1.18	

Source: Research Data (2021)

The results show that the VIF income levels (VIF=1.32), education levels (VIF=1.27), age (VIF=1.13) and gender (VIF=1.02) which was less than 10, which implies that there were no multi-collinearity problems among the IVs. Furthermore, the mean VIF was 1.18 which was still less than 10.

This study looked for heteroscedasticity issues at a level of 5%, using Breusch-Pagan / Cook-Weisberg test and there would have been heteroscedasticity if the p-value was less than 0.05. the results are shown in Table 4.9.

TABLE 4.9: Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity

Statistics	Value
chi2(1)	0.03
Prob > chi2	0.8677
Variables	fitted values of tax collection
Ho	Constant variance

The narration below shows the results of the heteroscedasticity test.

Ho: Constant variance

Variables: fitted values of tax collection

chi2(1) = 0.03

Prob > chi2 = 0.8677

The p-value for all the variables (p=0.8677) was exceeding 0.05 so there were no heteroscedasticity issues.

The study tested for autocorrelation

Using the null hypothesis

H_0: There is no autocorrelation in the relationship between the IVs and DV

H_α: There is existence of autocorrelation in the relationship between the IVs and DV

On analysing it was found that:

Durbin-Watson d-statistic (5, 110) = 2.430917

Thus, the Durbin-Watson d-statistic was 2.431 while the critical values for Durbin-Watson Test statistics; Durbin-Watson Critical (5, 110) has lower value of 1.57 and upper value of 1.78. To accept H_0: the value Durbin-Watson d-statistic (5, 110) must be greater than 1.78 and since Durbin-Watson d-statistic (5, 110) = 2.430917 exceeds 1.78, accept the null hypothesis and hence we find that there was no autocorrelation.

4.4.2 Pearson's' Correlation analysis

The dissertation began the actual inferential analysis by doing a correlation study to check if there was a statistically significant link between IVs; income levels; education level, age and gender and DV; tax collection, yielding the results shown in Table 4.10.

TABLE 4.10: Results on Correlation Analysis

	Tax Collection	Income levels	Education Levels	Age	Gender
Tax Collection	1				
	110				
Income levels	0.4117	1			
	0.0000				
	110	110			
Education Levels	0.2781	-0.0623	1		
	0.0033	0.5176			
	110	110	110		

Age	0.4452	0.4377	0.0725	1
	0.0000	0.0000	0.4519	
	110	110	110	110
Gender	0.3929	0.2415	0.0735	0.3063
	0.0000	0.0110	0.4451	0.0011
	1.0000			

Source: Research data (2021)

Looming from Table 4.10, the results on relationship between tax collection and; income levels ($p<0.01$; $r=0.4117$), education levels ($p=0.0033$; $r=0.2781$), age ($p<0.01$; $r=0.4452$) and gender ($p<0.01$; $r= 0.3929$), illustrate significant relationships of the IVs with DV. This because each relationship has a p-value less than 0.05; income levels ($p<0.01$), education levels ($p<0.05$), age ($p<0.01$) and gender ($p<0.01$). Among these relationship, convenience of age ($r=0.4452$) which had the highest and then income levels ($r=0.4117$). Each of these two had moderate because the coefficient of correlation (r is between 0.3 and 0.6. They were then followed by gender ($r= 0.3929$) and then education levels ($r=0.2781$). The last two relationships gender ($r= 0.3929$) and then education levels ($r=0.2781$) are low because r does not reach 0.3.

4.4.3 ANOVA results

The study tested for the goodness of fit of the model by carrying out Analysis of variance (ANOVA) to produce results in Table 4.11. This where the study thus tested the hypotheses that;

H_0: There is no statistically significant influence of demographic factors on tax collection in Kenya

H_α: There is statistically significant influence of demographic factors on tax collection in Kenya

TABLE 4.11: ANOVA Results

	Number of obs = 110		R-squared = 0.3808		
	Root MSE = .00154		Adj R-squared = 0.3572		
Source	Partial SS	df	MS	F	Prob > F
Model	0.000153037	4	0.000038259	16.14	0.0000
Income levels	0.000022517	1	0.000022517	9.5	0.0026
Education Levels	0.00002663	1	0.00002663	11.24	0.0011
Age	0.000017125	1	0.000017125	7.23	0.0084
Gender	0.000019996	1	0.000019996	8.44	0.0045
Residual	0.000248869	105	2.37E-06		
Total	0.000401906	109	3.69E-06		

Source: Research data (2021)

The ANOVA results show that the model ($p<0.01$) was fit for predicting tax collection in Kenya using income levels, education levels, age and gender. Since $p<0.01$ was less than 0.05, it means that at least one of the beta values income levels (β_1), education levels (β_2), age (β_3), and gender (β_4) is not zero ($\beta_i \neq 0$). So, the null hypothesis was rejected while the alternate hypothesis accepted. Notably, the null is accepted when all the beta values are zero (H_0: $\beta_1=\beta_2=\beta_3=\beta_4=0$) while the alternate hypothesis is accepted when at least one of the beta value is not zero (H_α: At least one of the beta value is not zero; $\beta_i \neq 0$).

Accordingly, there is enough evidence to claim that demographic factors; income levels, education levels, age and gender are predictors of tax collection in Kenya. The p-value for IVs;

income levels (p<0.0026), education levels (p<0.0011), age (p<0.0084) and gender (p<0.0045) are less than 0.05 According to these results it shows that the p-value for each of; income levels (p<0.01), education levels (p<0.01), age (p<0.01) and gender (p<0.01) was less than 0.05 to infer that each IV was a suitable predictor of tax collection in Kenya.

4.4.4 Regression analysis

This research tested for relationship between all the IVs; income levels; education level, age and gender and tax collection using inferential analysis to help establish a unified model for explaining tax revenue using all these indicators jointly. Thereafter the study conducted multiple regression with Table 4.12 capturing the associated results.

TABLE 4.12 : Analysis by Regression of IVs and Tax Collection

Source	SS	df	MS	Number of obs = 110	
				F(4, 105) = 16.14	
Model	.000153	4	0.000038	Prob > F = 0.0000	
Residual	.000249	105	0.0000024	R-squared = 0.3808	
				Adj R-squared = 0.3572	
Total	.000402	109	0.0000037	Root MSE = .00154	
Tax Collection	Coef.	Std. Err	T	P>|t|	[95% Conf. Interval]
Income levels	.3175	.1030	3.08	0.003	.1133 .5219
Education Levels	.2042	.0609	3.35	0.001	.0834 .3250
Age	.1883	.0701	2.69	0.008	.0494 .3272
Gender	.2380	.0819	2.90	0.004	.0755 .4005
_cons	-.00023	.0009	-0.25	0.799	-.0021 .0016

Source: Research data (2021)

These results ($p<0.05$) show that the model was fit for estimating tax collection using income levels, education levels, age and gender because the probability value (p-value) of F-statistics was less than 0.001. These results show the coefficient of determination as 0.3572 which means that 35.72% change in tax collection is determined by income levels (p=0.003), education levels (p=0.001), age (p=0.008) and gender (p=0.004) jointly. In these results, income levels, education levels, age and gender had significant effect on tax collection in Kenya.

The regression model is;

$$Y = -0.00023 + 0.3175X_1 + 0.2042X_2 + 0.1883X_3 + 0.2380X_4 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{(i)}$$

Such that

Tax collection = -0.00023+ 0.3175(income levels) + 0.2042(education levels) + 0.1883(age) + 0.2380(gender).

These results show that income levels ($\beta = 0.3175$) had the highest effect on tax collection followed by gender ($\beta = 0.2380$) then, education levels ($\beta = 0.2042$), and lastly taxpayers age ($\beta = 0.1883$). When all the factors; income levels, education levels, age and gender are zero then tax collection reduces by rate of 0.00023. Income levels had positive effect of 0.3175 on tax collection such that an increase of unit in income levels increase the tax collection by a rate of 0.3175 and one-unit decrease of income levels decrease the tax collection by a rate of 0.3175. Generally, these findings agree to the research by Ndichu (2019) of positive significant impact on the tax avoidance at revenue rate.

However, they somehow differ with the findings that as low-income taxpayers have a lower level of enforcement, middle-income taxpayers typically comply with tax laws. In the case of the present study, it is the low-income earners who are more compliant and according to the regression results, this negates the assertion that taxpayers at a lower level are relatively incompatible with tax legislation than taxpayers at a greater level of taxation. The findings also disagree to those in the study by Hofmann et al.'s (2017) that income is negatively related to tax compliance and that also income explains a negligible percentage of the variance of revenue compliance.

In the present study there was significant effect of income on revenue collection in Kenya. This agrees to the study by Wudeneh (2018) which revealed that education level has an impact on tax compliance. Such that as education level increases, the number of compliant tax payers' increase. So, education is directly linked to a likelihood of tax compliance and hence higher tax collection. In fact, the present study shows that education level significantly affects tax collection positively. The regression model Al-Mamun et al.'s (2014) shows that academic qualification has a statistically significant effect on tax compliance.

These findings agree to those in the study by Masaku (2019) which revealed a positive significant relationship between taxpayers' education on value added tax (VAT) enforcement. According to the findings of Deyganto's (2018a) the degree of education, on the other hand, has no bearing on the attitude toward tax enforcement. The results of this study show that education level has little bearing on tax enforcement attitudes. However, in this study, education had a significant effect on revenue collection to negate findings in the study by Deyganto's (2018a). Despite disagreeing with Deyganto's (2018a), the findings in the present study agree to findings

of Defitri and Fauziati (2018) that the higher the taxpayer's education, the less likely they are to comply with tax laws.

Lack of tax awareness was found to be strongly associated with tax voluntary enforcement attitude in Deyganto's (2018b) report. The regression study also revealed that lack of tax awareness and the tax system's simplicity have a substantial impact on voluntary enforcement attitudes. Other factors, such as education level, were also found to be insignificant determinants of tax enforcement attitude in this report.

Education levels had a 0.2042 positive effect such that an increase of unit of education levels cause an increase at a rate of change of 0.2042 on tax collection and vice versa. Wudeneh (2018) found that education level is a major factor in tax enforcement which totally agrees to the present research. Wudeneh (2018) suggests that, it is necessary to raise public consciousness about the advantages of paying taxes, by providing public education. According to Wudeneh (2018), the quality of education has an effect on compliance. The results showed that when one's education standard rises, so does the number of tax payers who are compliant. That was because, while trained taxpayers might be aware of noncompliance possibilities, their future improved understanding of the tax system, as well as their higher degree of moral growth, foster a more beneficial taxpayer mind-set and, as a result, greater compliance. That is, a higher level of schooling correlates with a higher chance of compliance.

According to Hofmann et al.'s (2017) individuals with a lower level of education are more tax compliant than those with a higher level of education, which was confirmed in the present study. However, according to the findings of the report by Gachiku (2015), education has an effect on tax enforcement procedures, which was in disagreement to the present study findings. On the

contrary, Mogeni (2014) reported that education has a substantial impact on the level of tax enforcement which was asserted by the current study finding. However, they differ with those by Fredrick and Peter (2019) that education is not significant to tax collection.

Age had a positive effect of 0.1883 on tax collection where a unit increase of the same led to 0.1883 rate of change of increase in tax collection and vice versa. However, the findings in the present study differ with those by Fredrick and Peter (2019), that age has no substantial impact on taxpayer enforcement as they agree with Deyganto (2018a) that age is a determinant of tax compliance attitude with taxation in the district. Furthermore, Deyganto's (2018b) research indicate that age has a substantial relationship with tax voluntary enforcement attitude. The findings of Wudeneh's (2018) study showed that age and gender had little bearing on tax enforcement conduct while Hofmann et al.'s (2017) found that while age has the largest average impact size in the relationship with tax enforcement, it only accounts for around 1% of the difference in tax compliance. Widianto (2015) says that age level is statistically significant in influencing individual tax compliance. However, Fredrick and Peter (2019) say that age does not significantly affect tax collection.

Gender had an effect of 0.2380 on tax collection where a change of one unit on gender causes a rate of change of 0.2380 on tax collection in the same direction. Generally, the results agree to Ndichu's study (2019) which revealed that tax payer gender (male or female) have a positive and substantial impact on tax evasion among SMEs. Men and women vary dramatically in their ability to cooperate with taxes across countries and circumstances, according to the report. In the present study it was shown that both genders were contributing significantly to revenue collection. Furthermore, Hofmann et al.'s (2017) found that sex can explain a limited amount of

variation in tax enforcement (about 0.36 percent). Al-Mamun et al.'s (2014) study reveals that both males and females have similar compliant attitudes as in the case of this study. According to the results, gender has a significant effect on tax collection confirming the findings of the study by Widianto (2015) that gender of taxpayers is statistically significant to tax compliance.

More so, Fredrick and Peter (2019) concluded that gender has a significant effect on taxpayer compliance which approves of the findings in this study. In the study by Fredrick and Peter (2019), gender had a substantial impact on tax enforcement and female taxpayers were more compliant than their male colleagues, which was significant. This is because women are often more concerned with the tax officer than men. Male taxpayers still take more risks than female taxpayers, which helps to understand why they comply less than female taxpayers. Women's empowerment and encouragement to engage in entrepreneurial business activities have recently improved in Uganda where women in industry were seen as the primary source of income, and therefore compliance with tax responsibilities was seen as one of the key factors in maintaining business stability.

The findings by Besley et al.'s (2019) as well as Fredrick and Peter (2019) report might be used to justify the findings in the present study based on Deyganto's (2018a) report that gender was found to be a determinant of tax enforcement attitude with taxation based in the region. Sex of taxpayers is strongly associated with tax voluntary enforcement attitude. More so, Hofmann et al.'s, (2017) posit that sex varied in their relationship to tax enforcement across regions. Though sex is a stronger predictor of tax compliance in some northern hemisphere countries (Western Europe, Eastern Europe & Central Asia, North America), it is a poor predictor of tax compliance in some southern hemisphere countries (East Asia & Pacific, Sub-Saharan Africa, Latin America

& Caribbean). Meanwhile McAuliffe (2017)'s study indicate that there is a close link between gender and tax morale.

Meanwhile, according to Widianto (2015), the gender of taxpayers has no statistically meaningful impact on individual tax enforcement. Female taxpayers are more likely than male taxpayers to file a tax return, according to the findings. According to the findings of this report by Al-Mamun et al., (2014), both male and female respondents had identical compliance attitudes. Thus, although there are mixed findings, that is: sometimes males contribute more than females in tax collection and other time females contribute more than their male counterparts while at other times it is not clear, this study established that in Kenya females are more significant than their male counterparts.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents key findings from the study, draws conclusion from the findings, and makes appropriate recommendations. The conclusions and recommendations drawn were focused on addressing the major objectives of the study.

5.2 Summary of the Study

The study findings are summarized in this section and the summary is in line with the study objectives; to establish the effect of income level on tax collection in Kenya, establish the effect of education level on tax collection in Kenya, assess the effect of age on tax collection in Kenya, and ascertain the effect of gender on tax collection in Kenya

5.2.1 Income Level and Tax Collection

The study established that income level significantly affects tax collection in Kenya with the highest taxpayers being those earning between Kshs. 30,000 and 49,999 followed by those earning Kshs. 50,000 and 99,999 and those earning from Shs 25,000 to 29,999. These are followed by those earning between Shs 20,000 and 24,999 and then those earning from Shs 15,000 to 19,999 and taxpayers earning Kshs. 100,000. The least contributors are those earning less than Kshs. 10,000. The tax band suitable for estimating tax collection are taxpayers earning between Kshs 25,000 and 29,999, between Kshs 20,000 and 24,999, between Kshs 10,000 and 14,999, and less than 100,000. It was found that at 5% significance level, income levels have a positive

significant effect on tax collection in Kenya contributing to a rate of 0.3175 when all the other predictors are zero.

5.2.2 Education Level and Tax Collection

The study found that education is directly linked to tax collection in Kenya such that it significantly affects tax collection positively. It was established that education level; in terms of; taxpayers with highest level of education as primary school, taxpayers with teachers training qualifications, and taxpayers with post-secondary education, account for 97.40%. In terms of contribution to tax collection, primary school dropouts are the highest, followed by secondary school leavers, then taxpayers who had post-secondary education qualifications and lastly taxpayers who had attended teacher training. The study established that education level did not contribute to tax collection per se, but the number of tax payers in each category. This was because the data on target taxpayers in each category was not used in the study. In that primary school dropouts comprise of majority of the workforce in Kenya, they took the first position.

5.2.3 Age and Tax Collection

The study found that age affects tax collection in Kenya significantly with a positive effect. The study established that most of those contributing to tax collection are the youthful (aged between 20 and 49 years) who comprise of majority of the workforce in the country. Despite those aged 50 years and above being within the active labor force, their contribution is less in that they are now planning outside active labor force and most of them are retiring to being business owners where their tax records are associated with their businesses.

5.2.4 Gender and Tax Collection

The study found that gender is a suitable predictor of tax collection in Kenya; having a positive significant effect on tax collection. The females are the highest contributors to tax collection with the male almost equally catching up with the female taxpayers. Although there is always a gender disparity in Kenya; giving females higher recognition, the male taxpayers are up in arms to playing their role in active labour force. The male taxpayers are catching up with females thereby seeking to become as compliant as their female counterparts. The study found that gender has a significant effect on tax collection.

5.3 Conclusions of the study

The study concludes that at 5% level of significance income levels have a statistically significant positive effect on tax collection in Kenya predicted by tax payers earning between Kshs. 25,000 and 29,999, between Kshs. 20,000 and 24,999, between Kshs. 10,000 and 14,999, and less than Kshs. 100,000. The most significant contributors are those earning between Kshs. 30,000 and 49,999, Kshs. 50,000 and 99,999, Kshs. 25,000 to 29,999, Kshs. 20,000 and 24,999 and Kshs. 15,000 to 19,999. That is the those earning between Kshs. 10,000 and below Kshs. 100,000.

The study concludes that at 5% significance level education has a statistically positive significant effect on tax collection in Kenya which is determined by primary school drop outs, taxpayers with teachers training qualifications, and taxpayers with post-secondary education qualifications. The level of education does not account for the tax collection but it is the number of taxpayers in a cluster that counts. That is the reason behind the primary school dropout tax

payers being the highest, followed by secondary school leavers, then taxpayers who had attended teacher training and taxpayers who have post-secondary education qualifications.

In concluding, the study indicated that at 5% significance level, age significantly affects tax collection in Kenya; with the most significant age levels being those aged between 20 and 49 years and taxpayers aged between 50 and 59 years. The most vibrant age level of tax payers is the youthful; aged between 20 and 49 years. Thus, it was found that those aged between 20 to 49 years are the highest contributors to tax collection. Those aged 50 to 59 years, 60 to 64 years, tax payers aged 65 years and above contribute the least. The study established most of those contributing to tax collection are the youthful (aged between 20 and 49 years) who are comprise of majority of the workforce in the country.

Despite those aged 50 years and above being within the active labor force, their contribution is less in that they are now planning outside active labor force and most of them are retiring to being business owners where their tax records are associated with their businesses. In conclusion, the study states that, at 5% significance level, gender has a statistically significant positive effect on tax collection in Kenya with the females contributing slightly more significantly than the males.

The study revealed that at 5% significance level, income level, education level, age and gender are predictors of tax collection in Kenya where they account for 35.72% of change in tax collection in Kenya. Each of these predictors have significant positive effect on tax collection in Kenya.

5.4 Recommendations of the study

The study suggested policy recommendations and recommendations for further study. The study recommends for effective strategies to be adopted for improving tax collection in Kenya. Further studies are proposed for the benefit of strengthening tax collection in Kenya.

5.4.1 Policy recommendations

The following policy recommendations were therefore made based on the findings. Firstly, KRA in collaboration with the Government of Kenya (GoK) should create a stronger bridge between themselves and the public. In addition to awareness and tax education, KRA should understand what motivates tax payers and introduce tax incentives to motivate them into effective tax compliance.

Secondly, the study recommends that the Kenya Revenue Authority (KRA) should design its taxpayer education to enable taxpayers to comprehensively understand tax laws, regulations and procedures so as to improve tax compliance behavior.

Thirdly, the study recommends that the KRA should concentrate much of their effort in creating awareness on the benefits of tax to the Kenyan youth who are aged between 20 and 49 years. It should encourage these taxpayers by allowing incentives such as priority tax service, tax reliefs or tax holidays on certain forms of tax. Importantly, KRA and the Government of Kenya (GoK) should introduce friendly tax compliance policies; those that do not hurt the youths.

Lastly, the KRA with assistance of government of Kenya should carry out a nationwide tax awareness and education targeting males. KRA should as well consider introducing male-specific tax incentives to encourage male taxpayers to comply effectively.

5.5 Recommendation for further studies

The study found that 35.72% of change in tax collection is determined by income levels, education levels, age and gender. This means that other factors account for the 64.28% so other studies should be done to ascertain the factors accounting for 64.28% change in tax collection. More so, other studies should be conducted to establish the relationship between each demographic factor; income levels, education levels, age and gender independently. Such that it will be possible to exactly find out the relationship between gender and tax collection without considering the effect of income levels, education levels, and age. Studies on non-demographic factors influencing tax collection in Kenya should also be done.

5.6 Limitations of the study

The study relied on total taxpayers instead of obtaining information of the target population of tax payers in each group and comparing this with the total number of those paying tax. So, it was not possible to establish weighted contribution of any particular group. For this reason, it was not possible to establish the relationship between education level and tax collection. So other studies should be done on the relative contribution of each demographic indicator to tax collection for instance the contribution of education to tax collection.

The study found that females contribute more than males to tax collection. However, these were the number of those who participated. It was not clear the tax compliance level among the two groups. So, in addition to establishing the amount contributed by each group, a study should be conducted to assess the level of compliance by each group.

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APPENDIX

APPENDIX 1: Data collection tool

Year	Tax Revenue (Ksh. billion)	Ave. Age of taxpayers	Proportion of female tax payers	Ave. education level (categorical) pri; sec; post-sec	Ave. income level (per capita)
2000					
2001					
2002					
2003					
2004					
2005					
2006					
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014					
2015					
2016					
2017					
2018					

Table A1: Monthly Data

Extracted Data					
Year	Tax Collection	Age	Gender	Education Levels	Income Levels
2008	0.0307	0.0321	0.0333	0.0425	0.0486
2008	0.026	0.0269	0.0267	0.0433	0.0462
2008	0.034	0.0321	0.0367	0.0417	0.0414
2008	0.0287	0.0279	0.0367	0.0342	0.0336
2008	0.0252	0.0269	0.0267	0.0375	0.0393
2008	0.036	0.03	0.03	0.035	0.0407
2008	0.0307	0.0321	0.0333	0.0417	0.0421
2008	0.0287	0.03	0.0367	0.0367	0.0429
2008	0.0473	0.04	0.0433	0.0342	0.0336
2008	0.032	0.03	0.0333	0.0392	0.04
2009	0.03	0.03	0.0333	0.0225	0.0429
2009	0.0393	0.04	0.0433	0.0358	0.0407
2009	0.03	0.03	0.0267	0.0358	0.0407
2009	0.0367	0.04	0.0233	0.045	0.0471
2009	0.036	0.03	0.03	0.0367	0.0407
2009	0.0233	0.02	0.03	0.0367	0.0386
2009	0.0367	0.04	0.0267	0.0417	0.0407
2009	0.034	0.04	0.0367	0.04	0.04
2009	0.03	0.0277	0.03	0.0367	0.0429
2009	0.0367	0.03	0.0267	0.0433	0.0443
2010	0.0287	0.03	0.0367	0.0383	0.0414
2010	0.03	0.03	0.0267	0.0442	0.0414

2010	0.04	0.04	0.03	0.0358	0.0314
2010	0.03	0.03	0.0367	0.04	0.0379
2010	0.0233	0.04	0.0267	0.0408	0.04
2010	0.0247	0.03	0.03	0.0325	0.0457
2010	0.03	0.03	0.0267	0.0425	0.045
2010	0.0267	0.03	0.0367	0.0308	0.0236
2010	0.0367	0.03	0.04	0.0342	0.0371
2010	0.03	0.03	0.03	0.0383	0.0493
2010	0.0287	0.03	0.0333	0.0442	0.0414
2010	0.03	0.0323	0.0267	0.04	0.0321
2011	0.0467	0.04	0.03	0.0458	0.05
2011	0.0267	0.03	0.0267	0.0408	0.0279
2011	0.03	0.0277	0.0367	0.0225	0.0457
2011	0.045	0.0493	0.0267	0.0475	0.0429
2011	0.03	0.02	0.03	0.0342	0.0314
2011	0.0247	0.02	0.0267	0.0417	0.0429
2011	0.03	0.02	0.0333	0.04	0.0214
2011	0.0367	0.03	0.03	0.0117	0.0371
2011	0.04	0.04	0.0367	0.0475	0.05
2011	0.0267	0.02	0.0267	0.0392	0.0329
2012	0.0333	0.02	0.03	0.0483	0.0407
2012	0.0267	0.02	0.0333	0.0342	0.0321
2012	0.0267	0.0314	0.0267	0.03	0.0336
2012	0.0367	0.02	0.0333	0.035	0.0407
2012	0.0433	0.02	0.0267	0.0233	0.05
2012	0.03	0.0371	0.0233	0.0367	0.0421
2012	0.0433	0.02	0.0267	0.04	0.0436

2012	0.0333	0.03	0.0233	0.0392	0.04
2012	0.0333	0.03	0.0267	0.0425	0.0429
2012	0.0182	0.03	0.0367	0.04	0.0407
2013	0.0467	0.03	0.0467	0.0392	0.0407
2013	0.0433	0.0486	0.0367	0.045	0.0471
2013	0.0333	0.02	0.0333	0.0367	0.0407
2013	0.026	0.0329	0.0367	0.02	0.0386
2013	0.0367	0.02	0.0333	0.0417	0.0407
2013	0.0333	0.02	0.0367	0.04	0.04
2013	0.03	0.02	0.0367	0.0408	0.0429
2013	0.0367	0.05	0.04	0.045	0.03
2013	0.04	0.03	0.0333	0.0483	0.0407
2013	0.0367	0.0277	0.0367	0.035	0.0464
2014	0.0473	0.03	0.04	0.0433	0.0486
2014	0.0353	0.04	0.0367	0.0458	0.0429
2014	0.0373	0.03	0.03	0.0417	0.04
2014	0.03	0.03	0.0333	0.04	0.0386
2014	0.0353	0.03	0.0333	0.0208	0.0429
2014	0.0367	0.0479	0.0233	0.0425	0.0486
2014	0.0233	0.0307	0.03	0.0392	0.0271
2014	0.0487	0.03	0.0333	0.0483	0.05
2014	0.0233	0.03	0.0333	0.0342	0.0221
2014	0.0333	0.0314	0.03	0.0442	0.04
2015	0.0387	0.03	0.0333	0.0367	0.0407
2015	0.04	0.02	0.0367	0.0258	0.0436
2015	0.04	0.0371	0.0433	0.02	0.0443
2015	0.0467	0.04	0.0467	0.0492	0.0429

2015	0.0333	0.03	0.0367	0.04	0.0386
2015	0.0467	0.0493	0.0367	0.0417	0.0429
2015	0.0387	0.03	0.0267	0.0492	0.04
2015	0.0367	0.03	0.03	0.04	0.04
2015	0.0387	0.0486	0.0233	0.0483	0.0414
2015	0.0367	0.03	0.0267	0.0417	0.0407
2016	0.0433	0.02	0.0333	0.045	0.0464
2016	0.03	0.0371	0.0267	0.0333	0.0479
2016	0.0267	0.03	0.04	0.0433	0.0471
2016	0.0333	0.03	0.0367	0.04	0.04
2016	0.0333	0.03	0.0267	0.0425	0.0414
2016	0.0333	0.02	0.0333	0.0433	0.0407
2016	0.03	0.03	0.0267	0.0433	0.0414
2016	0.0433	0.02	0.03	0.045	0.0471
2016	0.0333	0.02	0.0367	0.04	0.0407
2016	0.0233	0.0329	0.04	0.02	0.0379
2017	0.0367	0.0486	0.0333	0.03	0.0407
2017	0.0333	0.0314	0.0367	0.035	0.04
2017	0.03	0.02	0.03	0.04	0.0429
2017	0.0367	0.0371	0.0333	0.0417	0.03
2017	0.0205	0.0137	0.0251	0.0279	0.0294
2017	0.0251	0.0342	0.0274	0.0308	0.0205
2017	0.0274	0.0205	0.0228	0.033	0.0278
2017	0.0251	0.019	0.0251	0.0239	0.0317
2017	0.0324	0.0205	0.0274	0.0296	0.0333
2017	0.0242	0.0274	0.0251	0.0313	0.0294
2018	0.0255	0.0205	0.0205	0.0285	0.0274

2018	0.0205	0.0205	0.0228	0.0274	0.0264
2018	0.0242	0.0205	0.0228	0.0142	0.0294
2018	0.0251	0.0328	0.0159	0.0291	0.0333
2018	0.0159	0.021	0.0205	0.0268	0.0185
2018	0.0333	0.0205	0.0228	0.033	0.0342
2018	0.0159	0.0205	0.0228	0.0234	0.0151
2018	0.0228	0.0215	0.0205	0.0302	0.0274

Table A2: Moderated Inferential Data

Moderated Data					
Year	Tax Collection	Age	Gender	Education Levels	Income Levels
2008	0.00907	0.00652	0.00855	0.01025	0.00513
2008	0.00802	0.01119	0.00816	0.00839	0.01072
2008	0.00648	0.00466	0.00466	0.00979	0.00839
2008	0.00674	0.00466	0.00855	0.00979	0.00746
2008	0.00776	0.00746	0.00769	0.00466	0.00886
2008	0.00571	0.00839	0.00699	0.00792	0.00839
2008	0.00559	0.00746	0.00855	0.00979	0.00746
2008	0.00606	0.00699	0.00652	0.00466	0.01072
2008	0.00513	0.00466	0.00746	0.00326	0.00886
2008	0.00699	0.00979	0.00739	0.00652	0.00699
2009	0.00652	0.00792	0.00804	0.0028	0.00652
2009	0.00419	0.00513	0.00816	0.00559	0.00839
2009	0.00543	0.00886	0.00699	0.0031	0.00886
2009	0.01072	0.00606	0.00855	0.00839	0.01025
2009	0.00466	0.00466	0.00739	0.00792	0.00513

2009	0.00466	0.00652	0.00855	0.00746	0.00652
2009	0.00979	0.00886	0.01009	0.00746	0.00792
2009	0.00419	0.00641	0.00816	0.00792	0.00652
2009	0.00513	0.00559	0.00739	0.01072	0.00746
2009	0.00373	0.00466	0.00562	0.00652	0.00606
2010	0.00559	0.00513	0.00776	0.00746	0.00559
2010	0.00559	0.00559	0.00292	0.01025	0.00792
2010	0.00559	0.00466	0.00816	0.00559	0.00699
2010	0.00839	0.01072	0.00466	0.00652	0.00792
2010	0.00792	0.00364	0.00739	0.01025	0.00513
2010	0.00886	0.00886	0.00699	0.00886	0.00839
2010	0.00606	0.00466	0.00655	0.01025	0.00699
2010	0.00513	0.00513	0.0066	0.00886	0.00839
2010	0.00559	0.00559	0.00506	0.00652	0.00606
2010	0.00699	0.00606	0.00932	0.0028	0.00792
2010	0.00652	0.00839	0.00506	0.00559	0.00932
2010	0.00699	0.00932	0.00776	0.00886	0.00839
2011	0.00932	0.00979	0.00968	0.01025	0.01072
2011	0.00652	0.00652	0.00543	0.01009	0.00792
2011	0.00776	0.00699	0.00622	0.00839	0.00792
2011	0.00746	0.00746	0.00466	0.00746	0.00699
2011	0.00466	0.00886	0.00932	0.00886	0.00839
2011	0.01025	0.01072	0.0066	0.01025	0.00932
2011	0.00776	0.00513	0.00506	0.01119	0.00839
2011	0.00466	0.00606	0.00776	0.00652	0.00792
2011	0.00606	0.00466	0.00506	0.00979	0.00746
2011	0.00652	0.00652	0.0035	0.01165	0.00839

2012	0.00802	0.00886	0.00699	0.01119	0.00513
2012	0.00839	0.00932	0.00932	0.00839	0.00559
2012	0.00466	0.00513	0.00732	0.0028	0.00792
2012	0.00979	0.00746	0.00699	0.00559	0.00652
2012	0.00597	0.01072	0.00543	0.0031	0.00932
2012	0.0083	0.00699	0.0066	0.00233	0.01025
2012	0.00285	0.01025	0.00699	0.00419	0.00513
2012	0.0083	0.00839	0.00816	0.00699	0.00652
2012	0.00802	0.01072	0.00466	0.00839	0.00792
2012	0.00674	0.00513	0.00699	0.00746	0.00652
2013	0.00648	0.00886	0.00855	0.00792	0.00746
2013	0.00622	0.01025	0.00583	0.01072	0.00606
2013	0.00751	0.00746	0.01165	0.00699	0.00746
2013	0.01025	0.01119	0.00816	0.01165	0.00792
2013	0.00855	0.00792	0.00825	0.00746	0.00932
2013	0.00881	0.00839	0.00893	0.00932	0.00699
2013	0.00674	0.00652	0.00855	0.00746	0.00746
2013	0.00648	0.00839	0.00932	0.00699	0.00699
2013	0.00792	0.00886	0.00699	0.00466	0.00886
2013	0.00776	0.00746	0.00792	0.00886	0.00652
2014	0.00725	0.00652	0.00776	0.00792	0.00886
2014	0.00389	0.00746	0.00562	0.00886	0.00746
2014	0.00802	0.01049	0.00748	0.01025	0.00932
2014	0.00648	0.00513	0.01049	0.00932	0.00792
2014	0.00932	0.01119	0.01049	0.00699	0.00932
2014	0.00699	0.00652	0.01063	0.00839	0.00699
2014	0.00991	0.00886	0.01009	0.00699	0.00839

2014	0.00991	0.01025	0.01095	0.00641	0.01165
2014	0.00559	0.00746	0.00855	0.00979	0.00746
2014	0.00606	0.00699	0.00652	0.00466	0.01072
2015	0.00513	0.00804	0.00746	0.00326	0.00886
2015	0.00699	0.00979	0.00739	0.00652	0.00699
2015	0.00979	0.00746	0.00699	0.00559	0.00652
2015	0.00597	0.01072	0.0096	0.0031	0.00932
2015	0.0083	0.00699	0.0066	0.00233	0.01025
2015	0.00285	0.01025	0.00699	0.00419	0.00513
2015	0.0083	0.00839	0.00816	0.00699	0.00652
2015	0.00802	0.01072	0.00466	0.00839	0.00792
2015	0.00932	0.01119	0.01049	0.00699	0.00932
2015	0.00699	0.00652	0.01063	0.00839	0.00699
2016	0.00991	0.00886	0.00881	0.00699	0.00839
2016	0.00606	0.00699	0.00652	0.00466	0.01072
2016	0.00513	0.00466	0.00746	0.00326	0.00886
2016	0.00699	0.00979	0.00739	0.00652	0.00699
2016	0.00979	0.00746	0.01072	0.00559	0.00652
2016	0.00907	0.00652	0.00511	0.01025	0.00513
2016	0.00802	0.01119	0.00816	0.00839	0.01072
2016	0.00802	0.01049	0.00748	0.01025	0.00932
2016	0.00648	0.00991	0.01049	0.00932	0.00792
2016	0.00932	0.01119	0.00575	0.00699	0.00932
2017	0.00648	0.00466	0.00792	0.00979	0.00839
2017	0.00674	0.00466	0.01072	0.00979	0.00746
2017	0.00776	0.00746	0.00769	0.00466	0.00886
2017	0.00416	0.00839	0.00489	0.00792	0.00839

2017	0.00549	0.00218	0.00512	0.00701	0.00638
2017	0.00415	0.00119	0.00448	0.00701	0.00478
2017	0.00351	0.00351	0.00452	0.00606	0.00574
2017	0.00382	0.00382	0.00346	0.00446	0.00415
2017	0.00478	0.00415	0.00638	0.00792	0.00542
2017	0.00446	0.00574	0.00346	0.00382	0.00638
2018	0.00478	0.00638	0.00531	0.00606	0.00574
2018	0.00415	0.00478	0.00446	0.00319	0.00733
2018	0.00351	0.0015	0.0051	0.00623	0.00606
2018	0.00478	0.0067	0.00506	0.00446	0.00478
2018	0.00461	0.00319	0.00585	0.0067	0.0051
2018	0.00531	0.0051	0.00526	0.00619	0.00606
2018	0.00391	0.00574	0.00478	0.00542	0.00574
2018	0.00382	0.0011	0.00585	0.0067	0.0051

YEARLY DATA

PLICK DOUBLE CLICK TO SEE THE DATA

NEW DATA.xlsx