INFLUENCE OF INFORMATION COMMUNICATION TECHNOLOGY ADOPTION ON TAX COMPLIANCE AMONG SMALL AND MEDIUM MANUFACTURING ENTERPRISES IN NAIROBI, KENYA

BY

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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS AND ECONOMICS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTERS IN TAX AND CUSTOMS ADMINISTRATION

MOI UNIVERSITY

2022

DECLARATION

Declaration by Candidate

This research project is my original work and has not been presented for a degree in any other University. This research project should not be reproduced without prior consent of the author and/or Moi University

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KESRA105/0133 /2019

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DEDICATION

I dedicate this project to my parents for their sacrifices and encouragement they have given me throughout my life.

ACKNOWLEDGEMENT

I wish to acknowledge Dr. Bernard Baimwera, and Dr. Ronald Bonuke, my supervisors for their professional guidance and critical evaluation of this academic piece of work. I recognize my other lecturers as well for taking me through my course work, including sharpening my social research skills, among others.

ABSTRACT

Globally taxes account for significant part of governments' revenue whereby up to 80% of the total revenue and over 50% of total revenue at least in each country even though important, underperformance still affects many nations. The study aimed at investigating the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi County. The specific objectives of the study were to establish the influence of *iTax* system influence on tax compliance, the influence of online tax filing knowledge on tax compliance and the influence of internet accessibility on tax compliance small and medium taxpayers in Nairobi County. The study was anchored on fiscal exchange theory, technology acceptance model (TAM) theory and the theory of planned behavior (TPB). The study adopted explanatory research design methods to collect, analyze data and present the study findings. The population of the study included 450 small and medium taxpayers where a sample size of 205 participants was drawn. Data was collected using a 5-point Likert scale with closed ended questions. Descriptive data was presented in tables while the inferential statistics was analyzed using regression and correlation analysis. Multiple regression analysis established a positive significant linear relationship between *iTax* systems and tax compliance among small and medium taxpayers in Nairobi County with evidence of $p=0.000$, $\rho<0.05$; with beta 0.289. Still, there was a positive significant linear relationship between online tax filing knowledge and tax compliance with evidence of $p=0.000$, $\rho<0.05$ with beta 0.430, and similarly a positive significant linear relationship between internet accessibility and tax compliance with evidence of $p=0.049$, $\rho\leq0.05$ with beta 0.214. The study revealed that *iTax* systems, online tax filing knowledge and internet accessibility had a positive relationship with tax compliance up to 89.8% or ($R= 0.898$). In addition, the results revealed that *iTax* systems, online tax filing knowledge and internet accessibility caused a variation of 81% or ($R2=0.807$ and adjusted $R2 =0.803$) on tax compliance. This implied that the remaining only 9% of the change was caused by other factors not included in the model. These other factors could be taxpayers perception on technology adoption, perception about the government tax expenditure, and other behavioral factors such as fear of the unknown in the use and adoption of technology. The regression equation showed that a constant change of 0.404, a unit change in *iTax* systems causes an increase of 0.275 in tax compliance while a unit change in online tax filing knowledge causes an increase of 0.377 in tax compliance. A unit change in internet accessibility caused an increase of 0.178 in tax compliance. The study concluded that *iTax* systems, online tax filing knowledge and internet accessibility played a significant role in tax compliance among small and medium taxpayers in Nairobi, Kenya. The study recommended that more efforts should be done on improving the interaction of the *iTax* systems with the taxpayers to achieve higher tax compliance effectively and efficiently. Further studies should be done to a larger population in other counties in Kenya for comparative purposes.

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ABBREVIATIONS AND ACRONYMS

ATAF	-	Africa Tax Foundation
iCMS	-	Integrated Custom Management System
ICT	-	Information Communication Technology
IMF	-	International Monetary Fund
iTax	-	Integrated Tax Management System
KNCC	-	Kenya National Chamber of Commerce
LAC	-	Latin America and the Caribbean
M-Service	-	Mobile Service for Tax Management
MSMEA	-	Micro Small and Medium Enterprises Authority
OECD	-	Organization for Economic Corporation and Development
RECTS	-	Regional Cargo Tracking Systems

OPERATIONAL DEFINITION OF TERMS

Information Communication Technology Adoption - The usage of all communication technologies, including internet, wireless networks, cellphones, computers, software, and other media applications and services enabling users to access, retrieved, store, transmit, and manipulate information for the purpose of achieving economic gains. All these are encompassed in internet access, iTax system, and online filing knowledge (FAO, 2016).

Internet Accessibility - The set of hardware and software necessary to communicate, receive feedback, initiate action, and accomplish a task by the tax revenue authorities and individual taxpayers influenced by internet connectivity, cost of compliance and network security (FAO, 2016).

iTax System - The collective term used to mean communication, communication gadgets, context to be communicated and the human capacity to effectively use ICT in order to register for tax, file tax returns, pay tax due, audit, tract and follow up by both tax authorities and taxpayers; these are obtainable through PIN, iTax registration and ability to invoice taxpayers electronically (World Bank, 2018).

Online Tax Filing Knowledge - The online login, online filing, and files uploading skillsets required for general, procedural, and legal understanding of the taxpayer to interact with information communication technology effectively and efficiently for improved compliance with tax laws and regulations (OECD, 2015).

Tax Compliance - The ability of taxpayers to completely adhered to the rules, regulations and existing laws that govern the implementation, and administration of applicable tax laws. These could be influenced by technology adoption and usage (IMF, 2018).

CHAPTER ONE

INTRODUCTION

The chapter introduced the study background and discussed the global, regional and national perspective of tax compliance basing on the theories and empirical literature on tax compliance. The chapter further progressed to discuss the statement of the problem, the research general and specific objectives. This was then followed by postulation of research hypothesis, the significance and the scope of the study.

1.1. Background of the Study

Taxes account for a significant part of government revenue. According to one estimate, total tax revenues make up to 80 percent of total government revenue in nearly every second country in the world, and more than 50 percent in almost every country (Ortiz-Ospina & Roser, 2019). Tax is the main source of every government's revenue and as such the backbone of every country's development. Every now and again various governments strive to increase their revenue collection to meet the ever-growing budgets. Paying tax is one of the most universal, frequent, and potentially contentious interactions that citizens have with their government. It can affect, and be affected by, an individual's broader perception of government (PWC & World Bank, 2020). Taxation patterns around the world today reveal large cross-country differences, especially between developed and developing countries. Developed countries today collect a much larger share of their national output in taxes than do developing countries; and they tend to rely more on income taxation to do so. Developing countries, in contrast, rely more heavily on trade taxes, as well as taxes on consumption (IMF, 2018).

Moreover, the data shows that developed countries collect much higher tax revenue than developing countries despite comparable statutory taxation rates, even after

controlling for underlying differences in economic activity. This suggests that cross-country heterogeneity in fiscal capacity is largely determined by differences in compliance and efficiency of tax collection mechanisms. Both factors may as well be affected by the strength of political institutions (OECD, 2021). Taxes on goods and services were the main sources of tax revenue among many countries in Africa. Total taxes on goods and services accounted for 51.9% of total tax revenue on average in 2018. In the Southern African Customs Union, the average tax to GDP ratio was at 19.6% in 2018 with variations from 12.1% in Botswana and 29.1% of GDP in South Africa. In East Africa, Community countries, according to OECD/AUC/ATAF (2020), the tax to GDP ratio was 15.5% in 2018 which was below the Africa average. Tax to GDP ratios in Rwanda and Kenya exceeded 17.0% in 2018 and while in Uganda, it amounted to 11.8%. These figures point to the fact that Africa and its regional tax authorities still perform poorly in tax revenue as compared to Latin America and the Caribbean (LAC) countries. Kenya was behind some of the continent regions, especially the South. It is also noteworthy that the main source of revenue currently for the continent and the country is from sales and consumption. However, the gap existing in target revenue collection can be narrowed by enhancing efficiencies through the adoption of technologies in the registration, payment, and auditing of tax systems (World Bank, 2018).

The world economy is transforming due to the rapid revolution and going use of information and communication technologies. Although the pace of digital transformation varies, all countries are being affected. This has significant implications on the implementation of the 2030 Agenda on Sustainable Development, presenting major opportunities and challenges for developing countries (UNCATD, 2020). According to Bruhn (2011), tax administration and therefore collection is also about the

relationship between the tax structure that ensures certainty and stability, and a functioning tax administration that ultimately leads to higher economic activity and a growing tax base. Generally, the existing data shows that Kenya has made good improvements on the administration of taxes and expanding its tax bases. Using online platforms such as iTax, RECTS, iCMS and systems electronic payments has improved both the filing and payment of taxes by embracing and using technological capabilities so far existing in the economy. The advancement of technology in Kenya, has led to enterprises whether small or large to as well as individuals to conduct their businesses over the technological platforms including internet technology and mobile telephony technology (PwC, 2018; World Bank, 2016). This has necessitated the need for tax revenue administration also to think toward adapting to technological advancements so as to enhance tax revenue collection.

1.1.1 Tax Compliance in Kenya

According to Kenya Revenue Authority Report on Tax compliance Financial 2018/2019 while looking back at the financial years 2017/2018; the revenue underperformed across various tax bases. Overall revenue collected for the financial amounted to KES 1.580 trillion compared to KES 1.435 trillion in the previous year. This was a growth of 11.3% against the previous FY of 5.1%. The exchequer revenue grew by 11.5% to collect KES 1.477 trillion against KES 1.340 trillion in the financial 2017/2018 and the revenue of domestic taxes and customs and border control experienced growths of 11.0% and 11.8% respectively. Even though there was a positive growth of the tax revenue collected of the two financial years period, it was still below the target that had been set for the revenue for the two financial years. Still the revenue missed its target by KES 68.139 billion representing a performance level

of 96.2%. This shows that there is need to improve on the tax compliance even though there is improvement on revenue generation.

In the financial year 2019/2020 the overall tax compliance according to Kenya Revenue Authority (2021) performed at 97.9% which is growth of 1.7% using the financial year 2018/2019 performance levels. This growth saw the collection of KES 1.607 trillion against the target of KES 1.642 trillion, leaving a gap of KES 33 billion approximately. Even though across many tax bases there was an improved compared to the previous financial year, domestic VAT, Domestic Excise and Oil/Fuel Taxes experienced declines by 7%, 6.4% and 1.4% in that order (KRA, 2021). Even though Kenya Revenue Authority has made strides and employed the use of technology to collect tax revenue, these gaps still need to be narrowed so as to empower the government to offer public goods and services (IMF, 2018).

From the above statistics it is clear that revenue has been underperforming as the set targets have not been achieved. However, according to the Micro Small and Medium Enterprises Authority's Strategic Plan 2020-2024 (2021), there are a total of 10,923 medium enterprises which are business trading between Kenya shillings five million and 500 million annually. There are 110, 796 small enterprises trading between Kenya shillings 500,000 to 5 million annually. But, according to Kenya Association of Manufacturers (2020), there are a total of 7.41 million businesses falling under micro small and medium enterprises with only 1.56 million being registered. This number if very huge and as noted by PwC (2018), efforts to turn informal business and streamlined unregistered business is critical to improved tax compliance.

Some of the challenges noted by the Kenya National Chamber of Commerce and Industry that hamper SMEs from being formal are the complications in business

registration processes, difficulties in complying with laws and regulations governing various economic sectors, complicated tax systems and regimes and multiplicity of taxation across various sectors in the economy making it hard for SMEs to grow. These factors among others, have led to many SMEs dying off before reaching their sixth birthday and even if they do not cease to operate, there losses incurred drive many out of business (KNCC, 2020). Among other challenges SMEs, despite the huge and existing potential to contribute to revenue collection have been untapped effectively. With advent and growth of technology to register, monitor and file taxes, there could be improvement around the SMEs towards more accountability on their incomes.

According to KRA (2020), there are a set of technological enablers that enhance the communication between the tax authority and the taxpayers. For the purpose of this study, the technological adapted includes iTax System and other factors that facilitate the use of this technology. Kenya Revenue Authority reports that iTax is an integrated tax management system where taxpayers upon registration through the online platform, the taxpayer can log in, declare the tax base of interest, file their taxes, and be issued with the tax invoice and the guidelines for payment of tax due. The systems are also used to access the tax ledger where the taxpayer would access the tax transactions for the purpose of records and clarity (KRA, 2019).

There are a number of factors that influence the use if these sets of technology. These include the ability of the taxpayers to have the relevant knowledge to use the iTax system, and the internet connectivity to facilitate communication between the technological systems and the taxpayers (FAO, 2016). Alibraheem and Abdul-Jabbar (2016), in Malaysia studied electronic tax filing adoption and its impact on employee's tax performance. The study has only one independent variable. Bramantyo (2020) studied the determinants of e-tax system and tools acceptance by users. Ayieni and

Afolabi (2020) studied the relationship between tax revenue, infrastructure development, and tax revenue in Nigeria. Karimi, Kimani and Kinyua (2017) studied the effect of technology and information systems on revenue collection by county government of Embu, Kenya.

1.2 Statement of the Problem

The major challenge for every country in the world is how to raise sufficient revenue for its economic growth and development, the provision of public goods and services. According to KRA (2020), due to efforts made to improve on tax compliance a total of Kenya shillings 1.607 trillion collected in the financial year 2019/2020. Poor coverage of the taxpayer base and inadequate monitoring of taxpayer compliance have been shown to create spiraling effect on tax administration leading to higher tax burden on small and medium taxpayer base. This directly leads to poor tax base performance from non-compliance and affects the overall collection of tax revenue in many countries in the world (ADB, 2014). Drawing from fiscal exchange theory, in the cases where taxes collected do not seem to correspond to the anticipated development, many taxpayers may feel discouraged to pay and hence lead to intentional non-compliance (Rethi, 2012).

Usman and Abdulahi (2020) studied on e-filing intentions of income tax return and compliance behavior in Nigeria. The study recommended that a model to predict taxpayer's behavior distinct from social, psychological, and economic factors should be tapped into by the tax authorities to improve behavior towards compliance. It is not contentious that small and medium taxpayers are a challenge and in particular that it is difficult to collect traditional combination of taxes from them (Shome, 2015). This may call for modification or introduction of technology into the efforts of collecting taxes from small and medium taxpayers. Adoption of information communication technology

into tax regimes could help harmonize tax collection among small and medium taxpayers ensuring that businesses data are properly captured to enhance transparency and accountability for taxation purposes (ADB, 2019). This study, therefore, added value to the challenging environment of maximizing tax compliance while ensuring equity and just contribution to tax revenue from small and medium taxpayers sector.

1.3 General Objective of the Study

The general objective of the study was to establish the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi County.

1.4 Specific Objectives of the Study

i. To investigate the influence of *iTax* system on tax compliance among small and medium taxpayers in Nairobi County.
ii. To evaluate the influence of online tax filing knowledge tax compliance among small and medium taxpayers in Nairobi County.
iii. To establish the influence of internet accessibility on tax compliance among small and medium taxpayers in Nairobi County.

1.5 Research Hypotheses

H_{01}: There is no significant of influence of *iTax* system on tax compliance among small and medium taxpayers in Nairobi County.

H_{02}: There is no significant influence of online tax filing knowledge on tax compliance among small and medium taxpayers in Nairobi County.

H_{03}: There is no significant influence of internet accessibility on tax compliance among small and medium taxpayers in Nairobi County.

1.6 Significance of the Study

The study investigated the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi County. The study findings could be used by the Kenya Revenue Authority to improve on the general performance of the revenue collection by ensuring that barriers to effective and efficient use of any ICT platform are unhampered. The findings of the study further could be used to enhance the registration, the tracking, the payment and auditing of small and medium taxpayers for improved tax compliance.

The study also investigated the *iTax* system influence on tax compliance among small and medium taxpayers in Nairobi, Kenya. The findings of the study could improve the technological tax administration platforms so that small and medium taxpayers improve on the time and duration taken to comply with tax requirements. The findings of the study could also be used to increase the knowledge and understanding of the ICT platforms used by Kenya Revenue Authority to administer various tax bases for overall improvement of tax compliance.

The study findings revealed the importance of technology adoption to revenue generation and therefore the academic fraternity could use the findings to improve knowledge on the role information communication technology adoption on tax compliance. Since taxation is a limited area of study in Kenya, other scholars, may look into these other factors that contribute to technology adoption which were not covered by this study. Further research could be conducted to continuously improve on tax compliance for greater economic growth and development of Kenya.

1.7 The Scope of the Study

The study attempted to establish the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi County. The study specifically targeted taxpayers who had been categorized by Kenya Revenue Authority as small and medium taxpayers. Majority of these taxpayers were corporate or business entities which had an annual business turnover of between KES 5,000,000 and KES 50,000,000. The focus of the study was all registered manufacturing firms and had a Personal Identification Number (PIN) from Kenya Revenue Authority. The study focused on the entire of industrial area of Nairobi County across selected sectors of the small and medium manufacturing enterprises. The area under the study was large enough to suffice the population and subject it to research techniques enabling sufficient data, subsequently analysis, interpretation and presentation of the study findings. The study focused onto the financial year 2019/2020 and 2020/2021.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section began with an introduction to the chapter and then proceeded to discuss the theoretical framework with which the study was anchored, conducted the empirical review based on the past, and ongoing studies on the study area, realized the research gaps, summarized the chapter and then finalized the chapter through diagrammatical presentation of conceptual framework.

2.2 Conceptual Review of the Study

The concept of the study was to investigate the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi, Kenya. The study further attempted evaluate the influence of *iTax* system on tax compliance, the influence of online tax filing knowledge on tax compliance and finally the influence of internet accessibility on tax compliance. The assumption was that in one way or the other, positively, or negatively information communication technology adoption influences tax compliance among the small and medium taxpayers. The individual concept was further discussed.

2.2.1 Tax Compliance

According to Kenya Revenue Authority (2020), the tax compliance in the financial 2019/20120 total Kenya shillings 1.607 trillion collected. This however can short of the estimated target by 2.2%. Even though there has been recorded growth on performance of revenue for the past 5 years, it still falls below the target revenue level that the country should be collecting (KRA, 2020). To narrow the gap realized in the collection of revenue, Kenya Revenue Authority has embraced information communication technology (ICT) to reach more taxpayers through registration, payment of the taxes

due, tracking and auditing of the tax systems to improve on revenue collection and hence better performance (KRA, 2019). Therefore, proper use of information communication technology can be a contributing factor to improving tax compliance.

2.2.2 *iTax* System

According to Kenya Revenue Authority (2021) there are *iTax* system used to value property and assess payable taxes thereon. There are currently three systems, and these are: Integrated Tax Management System - iTax; which is a system that allows taxpayers to update their tax registration details, file tax returns, register tax payments and make status enquiries with real - time monitoring of the taxpayers' ledger account. The second one is Integrated Customs Management System - iCMS; which replaced the older system SIMBA to streamline customs operations as well as automate manual operations. The iCMS integrates auto-uploading of cardo import data from shipping manifest, auto exchange of information with iTax and a virtual electronic auction platform to make Customs cargo auctions accessible to all. The third system used by the government is the Regional Electronic Cargo Tracking System - RECTS; which is a system that facilitates end-to-end monitoring of transits along the Northern Corridor. This system has greatly improved cargo security and helped fast-track the movement of goods along the Northern Corridor. All these are ICT based iTax systems which are used primarily for improved tax compliance.

2.2.3 Online Tax Filing Knowledge

Online tax filing knowledge is important to not only improving the tax compliance but also ensuring that the taxpayers observe the relevant laws and procedures including the specific times to pay required taxes. Online tax filing knowledge can be classified into three areas namely, general knowledge, procedural knowledge, and the legal knowledge (ADB 2019). The important of a taxpayer being knowledgeable is to reduce the tax

burden through fines and penalties while at the same time improving on tax compliance. The study assumed that there was a relationship between online tax filing knowledge and tax compliance. That the more the knowledgeable the taxpayer is the better the changes of tax revenue performing better. The study investigated further into this relationship between online tax filing knowledge and tax compliance.

2.2.4 Internet Accessibility

Information communication technology has come to be one of the leading global innovations. However, ICT depends on the functionality of internet accessibility to fully achieve its benefits to various users. According to Adams (2002), there is the necessity to integrate former existing structures is becoming more demanding since new applications need to be created to assist the dynamics of financial processes. Still, the quality of processing data augments each year that requires a scalable infrastructure to keep the fiscal processes working (Maxwell, 2005). The study assumed that internet accessibility is necessary so as to integrate communication and information between the taxpayers and the tax authority. This may have influence on the performance of revenue collected by the tax authority.

2.3 Theoretical Framework

The study aimed at investigating the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi, Kenya. The study was anchored on three theories that supported dependent and independent variables in the study. These three theories are the Fiscal Exchange Theory, Theory of Technology Acceptance Model (TAM) and the Theory of Planned Behavior. These were further discussed, critiqued, and related to the study in the subsequent sections.

2.3.1 Fiscal Exchange Theory

The fiscal exchange theory suggests that the presence of government expenditures may motivate compliance and that governments can increase compliance by providing goods that citizens demand in a more efficient and accessible manner (Moore, 2004). Compliance increases with perceptions of the availability of public goods and services. Accordingly, the main concern of taxpayers is what they get directly in return for their tax payment in the form of public services (Alm *et al*., 1992). In this perspective, taxation and the provision of public goods and services are interpreted as a contractual relationship between taxpayers and the government (Moore, 2004). Further, the theory posits those individuals may pay taxes because they value the goods provided by the government, and they recognize that their payments are necessary both to help finance the goods and services and to get others to contribute (Fjeldstad & Semboja, 2001).

The existence of positive benefits may increase the probability that taxpayers will comply voluntarily without direct coercion. Although most taxpayers cannot access the exact value of what they receive in return for taxes paid, it can be argued that they have general impressions and attitudes concerning their own and other in terms of trade with government (Bodea & LeBas, 2013). It is then reasonable, to assume that taxpayers' behavior is affected by his/her satisfaction or lack thereof with his or her term of trade with the government. Thus, if the system of taxes is perceived to be unjust, tax evasion may, at least partly, be considered as an attempt by the taxpayer to adjust to his/her terms of trade with the government. The fiscal exchange theory has received much attention and is well established theoretically. However, the evidence to support the theory is ambiguous (D'Archy, 2011). Therefore, within the fiscal exchange framework, we expect the probability of an individual's tax compliant attitude to be positively correlated to satisfaction with the provision of public goods and services.

The fiscal exchange theory is relevant to the study because taxpayers are usually encouraged to pay taxes when they feel that their efforts contribute to national economic growth and development. However, in the cases where taxes collected do not seem to correspond to the anticipated development, many taxpayers may feel discouraged to pay and hence lead to intentional non-compliance (Rethi, 2012). The theory, therefore, supports the dependent variable of income tax compliance since when taxpayers perceive that their taxes are used for economic and development goals, they are most likely to declare their incomes, file their taxes, pay taxes due and hence contribute to improving income tax performance. The theory of fiscal exchange will enable the study to relate technology adoption to tax compliance based on the underscored positions.

2.3.2 The Technology Acceptance Model (TAM) Theory

The theory of technology acceptance model was developed by Davis in 1989. Technology Acceptance Model theory is one of the most popular theories that is used widely to explain information systems usage. The theory models how users come to accept and use a technology. The model suggests that users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably perceived use, and perceived usefulness. Perceived usefulness is the degree to which a person believes that using a particular system would enhance his or her job performance. Davis (1989) defined perceived ease-of-use as the degree to which a person believes that using a particular system would be free from efforts.

So many studies have been conducted which have led to some changes on the originally proposed model. These include the TAB-TPB which integrated theory of technology acceptance model and theory of planned behavior. Vankatesh and Davis (2000) proposed a new version of TAM called TAM2 which added new variables to the existing model. Vankatesh *et al*. (2003) in a study published in MIS quarterly proposed

the unified theory of acceptance and use of technology model. Agarwal and Prasad (1998) modified TAM by adding the construct of compatibility in the technology acceptance model. Moon and Kim (2001) has added a new variable playfulness factor to study acceptance of the wide web. Lim (2000) proposed to modify TAM by adding variable like experience, self-efficacy, perceived risk, and social influence.

According to a study by Franco and Roldan (2005), the relationship between perceived usefulness and behavioral intention was strong among goal-oriented users of ICT. Chau and Hu (2000) compared three model Technology Acceptance Model, the Theory of Planned Behavior and a decompressed TPB model that is potential adequate in the targeted healthcare professional setting in Hong Kong. The results indicated that TAM was superior to TPB in explaining the physicians' intention to use telemedicine technology. TAM has been used by researchers worldwide to understand the acceptance of different types of information and technology systems. Shafeek (2011) tried to evaluate the acceptance of eLearning systems by teachers by using TAM. Pavlou (2003) developed a model to predict the acceptance of e-commerce by adding new variables trust and perceived risk, and found that where users perceive risks to minimal, there is increased of information communication technology platforms.

However widely researched and use Theory of Technology Acceptance Model is, it has some flaws. According to Bagozzi, Davis and Warshaw (2007) argued that because new technologies such as personal computers are complex and an element of uncertainty exists in the minds of decision makers with respect to successful adoption of the ICT, people form attitudes ad intentions toward trying to learn to use the new technology prior to initiating efforts directed at using ICT. Criticism of TAM as a theory include its questionable heuristic value, limited explanatory and predictive power, triviality, and lack of any practical value (Chuttur, 2009). Benbasat and Barki (2000),

suggest that TAM has diverted researchers' attention away from other important research issues and has created an illusion of progress in knowledge accumulation.

The theory of Technology Acceptance Model supports both the dependent and independent variables differently. To the dependent variable, the aim of improving the performance of tax revenue cannot be overstated. As seen in the previous chapter discourse, tax compliance has been tax compliance has been associated with good revenue performance. Using ICT enhances the ease of which business and individuals conduct transaction of tax payment with the Kenya Revenue Authority. With the introduction of a number of ICT based taxpayers' registration, tax filing, tax audit and tracking systems, Kenya Revenue Authority (2021), reports on the overall improvement of tax performance across many tax bases. The independent variable is also supported the theory of Technology Acceptance Model since information communication technology is what TAM is all about. There are *iTax* system as well as infrastructure and the knowledge to using these ICT platforms that is critical to the successful adoption, ease and critical to tax compliance is the time-cost savings that would otherwise be need if non-ICT platforms were in use.

2.3.3 Theory of Planned Behavior (TPB)

The theory of Planned Behavior is also known as the theory of Reason Action (TRA) in the early days. The theory of planned action was founded by Fishbein and Ajzen in 1975. The model posits that people's attitudes are formed after careful consideration of available information. The theory further attempts to explain the relationship between beliefs and attitudes, and interposed a new variable, behavioral intention, between attitudes and behavior (Peak, 1995). The work of Fishbein (1976) generated a powerful explanation of the conditions under which strong attitude-behavior relationships might be expected. This is the principle of compatibility. This principle holds that each

attitude and behavior have the four elements of action, target, context and time, and states that correspondence between attitudes and behavior will be greatest when both are measured at the same degree of specificity with respect to each element (Ajzen and Fishbein, 2005).

The theory of planned behavior further suggests that the proximal determinant of volitional behavior is one's behavioral intention to engage in that behavior. Behavioral intention represents a person's motivation in the sense of her or his conscious plan, decision, or self-instruction to exert effort to perform the target behavior (Trafimow & Wyre, 1993). Attitudes towards a specific behavior impact on performance of the behavior via intentions. Proponents of the theory of planned behavior postulate that the theory is more accurate due to the addition of perceived behavioral control which considers if a person truly believes that they have control over the behavior which they want to carry out (Sheeran, 2002). Further the theory states that the success on an individual's intention depends on the individual's control of all the different factors that go into his action (Ajzen, 1985).

The theory is applicable to various fields and industries ranging from healthcare, politics, and even general businesses and organizations. According to Strack and Deutsch (2001), when someone has negative attitude and feel that they do not have control of this action, that person is less likely to carry out that action. Also, if people within a society do not approve of the action to be carried out, then it would have a negative impact on a person's intention for the action. In relation to tax performance, since planned behavior is more a personal conscience and own volition to perform a function, tax payment is always an initiation of the individual or businesses. Lack of control on individual's behavior due to societal behavior and or pressure, the individuals would mostly be affected with what other taxpayers' practice. Perception

of the benefits earned in exchange of tax paid could also negatively influence behavior at the societal and individual level leading to poor tax compliance.

Azmi & Yusniza (2010) conducted a study on the influence of technology adoption and tax compliance from the taxpayers' perspective. The study findings revealed that despite the adoption, and use of technology, and the importance that e-filing plays, without proper and reliable integrated systems to capture taxpayers' details accordingly creates a perceived risk among the public. This perceived risk informs of the taxpayers behavior who then, may deliberately fail to comply due to perceived risks. Usman and Abdulahi (2020) conducted a study on e-filing intentions of income tax return and compliance behavior in Nigeria. The study recommended that a model to predict taxpayer's behavior distinct from social, psychological, and economic factors should be tapped into by the tax authorities to improve behavior towards compliance.

2.4 Empirical Review of Variables

The study attempted to investigate the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi, Kenya. The study also aimed at evaluating the influence of *iTax* system, online tax filing knowledge and internet accessibility influence on tax compliance. This section reviewed some of the studies that had been conducted in the past and were currently ongoing in the same area of the study.

2.4.1 Tax Compliance

Tax compliance has been defined in various ways by several authors. Dasgupta (2002, stated that tax compliance with tax laws involves true reporting of the tax base, correct computation of the tax liabilities, timely filing of tax returns and timely payment of the tax amount due. Kirchler (2007) stated that compliance might be voluntary or enforced.

That voluntary compliance is made possible by the trust and cooperation between tax authority and taxpayers, and it is the willingness of the taxpayer to comply with directives and regulations. Singh (2003) still defined tax compliance as an act of filing tax returns, declaring all taxable income accurately and making payment of the tax due within the stipulated period without having to wait for follow-up actions from the authority. Any behavior of the taxpayer to the contrary of the above definitions amounts to non-compliance.

Information communication technology is a broader term for information technology which refers to all communications technologies, including the internet, wireless networks, cell phones, computers, software, middleware, videoconferencing, social networking and other media applications and services enabling users to access, retrieve, store, transmit, and manipulate information in a digital form (FAO, 2015). ICTs are also used to refer to the convergence of media technology such as audio-visual and telephone networks with computer networks, by means of a unified system of cabling, including signal distribution and management, or link system. However, there is no universally accepted definition of ICTs considering that the concepts, methods, and tools involved in ICTs are steadily evolving on a daily basis (FAO, 2015). For the purpose of the study, ICT will be taken to mean both technologically and digitally based iTax system including the human capacity to effectively interact with revenue authority by the taxpayers to register, file taxes, generate invoices, receipts, and certificates, audit taxpayers, monitor and track movement of goods in Kenya.

Karimi, Kimani and Kinyua (2017) conducted a study on effect of technology and information systems on revenue collection by county government of Embu, Kenya. The study adopted descriptive research methodology. The data was analyzed using regression model and Pearson's Correlation. The study findings implied that adoption

of technology and information systems by county government helped in improving revenue collection. The findings further concur with Waema (2014), who argued that information communication technology has become essential in increasing transparency and accountability of government agencies, reduces transactions costs in service delivery and creates a sense of a working government.

In a study conducted by World Bank (2019) in Rwanda, it was found that the adoption of electronic billing machines reduced VAT compliance burden from 45 hours to 5 hours a year, and plans were underway to for replacing the physical hardware of EBM with a free, government issued software-based equivalent, geared up for use on newer technology of smartphones as well as on the taxpayers' own computers. It was notable that a key indicator to this successful adoption of ICT in Rwanda was ranking in the World Doing Business Index, whose 2019 report placed Rwanda at position 29, the only low-income economy at top 50. This shows that adoption of ICT and effective use of it leads to improved tax compliance because both the taxpayer and the revenue authority save on time and cost of tax administration. Efficiency in ICT adoption also goes a long way to improve business environment, attracting more employment of resources and improving on tax compliance.

Alibraheem and Abdul-Jabbar (2016) conducted a study in Malaysia on electronic tax filing adoption and its impact on tax employees' performance. The study used descriptive research methodologies. The study findings revealed that technology adoption does not only influence end-user, but it also improves employee performance as well. This performance was further associated with improved tax compliance through the use of other integrated ICT platforms. From the aforementioned studies, there is a strong relationship between information communication technology and tax

compliance. The study will further evaluate the existence of this relation among small and medium taxpayers using different variables.

2.4.2 *iTax* System and Tax Compliance

A tax system in the word primarily involves four key internal stakeholders including the tax agency, taxpayers, tax practitioners, and oversight agencies such as ministry of finance and other external stakeholders such as banks and company registrars (Crandall, 2010). Tools in a tax system are the individual avenues/platforms used to administer tax by both internal and external stakeholders. *iTax* system is inseparable since the tools cannot work automatically 100% without the involvement of the human capacity found within ICT adoption (ADB, 2014). Enabling taxpayers to perform self-service tax functions when they wish to and reaching out to taxpayers with regular refreshed information and alerts on tax matters, compliances, and liabilities, is likely to enhance taxpayers' perception of the tax authority as being responsive to their needs. Many studies have revealed that economic growth and tax revenue have seen increased growth through the implementation of simplified and convenient self-services based on electronic filing and payment iTax system (World Bank, 2018).

Azmi and Yusniza (2010) conducted a study on adoption of tax e-filing. The study adopted descriptive research methodology. The study findings revealed that despite the adoption and the importance that e-filing plays, without proper and reliable integrated systems to capture taxpayers' details accordingly creates a perceived risk among the public. Usman and Abdulahi (2020) conducted a study on e-filing intentions of income tax return and compliance behavior in Nigeria. The study adopted systematic literature review method. The study recommended that a model to predict taxpayer's behavior distinct from social, psychological, and economic factors. This would improve on the design of ideal tax iTax system for improved tax compliance.

Bramantyo (2020) conducted a study on the determinants of e-tax system and tools acceptance by users. The study adopted descriptive research design and used a structural equation modeling. The study findings showed that users of the e-tax systems are significantly influenced by the perceived usefulness, beliefs and compatibility of the e-tax system to the users. The study also found out that the users' intentions in using the e-tax system is influenced by self-efficacy and facilitating conditions. The reviewed literature showed that use of e-tax system is able to enhance tax compliance, but a number of factors were at play. The study would therefore assess the influence individual iTax system on tax compliance in light with the reviewed literature.

2.4.3 Online Tax Filing Knowledge and Tax Compliance

Aondo (2019) conducted a study on the effectiveness of taxpayers' education on compliance for SMEs in Kenya. The study adopted descriptive research and regression statistical analysis models. Pearson correlation was used to predict and describe the relationship between the variables. The study findings showed that online tax filing knowledge has influence on compliance across all tax bases including PAYE and others. According to a study conducted by Pattiasina *et a*l. (2020), on determinants of taxpayer compliance level in East Indonesia. The study adopted descriptive research model. The findings of the study revealed that online tax filing knowledge and tax sanctions have a significant positive effect on tax compliance. The study also revealed that online tax filing knowledge had a positive effect on taxpayer compliance. In addition, Rayahu, Setiawan, and Troena (2017), examined the roles of taxpayers' awareness, tax regulation and understanding and influence on taxpayers' compliance. The findings from the study showed that knowledge and understanding of tax regulations and tax awareness of the tax laws by taxpayers made a significant contribution to taxpayers' compliance hence improved tax compliance.

Rayahu, Setiawan, and Troena (2017), investigated the roles of taxpayers' awareness, tax regulation and understanding and influence on taxpayers' compliance. The findings from the study showed that knowledge and understanding of tax regulations and tax awareness of the tax laws by taxpayers made a significant contribution to taxpayers' compliance. This contribution was equally shared by tax compliance since compliance entails compliance to tax procedures and legal requirements which would influence tax compliance positively. According to a study done by Malgorzata (2016) on the typology of taxpayers and tax policy, the study adopted cluster analysis methods of social research. The findings of the study suggested that tax authorities should focus on campaigns strengthening society's tax norms. The state through its education policy could strengthen the collective belief that paying taxes is not an ethically detached act made by an individual but citizen's duty as part of the society. Information campaigns showing the prevalence of such attitudes and behaviours would reinforce rectitude shown by taxpayers adhering to taxation laws and would also have an impact on tax mentality through social conformity.

Online tax filing knowledge based on the literature reviewed is critical to compliance and compliance is important towards improved tax revenue. Even though it is hard to ascertain compliance fully among taxpayers, scholars do agree that general tax knowledge, procedural online tax filing knowledge and legal online tax filing knowledge are all required by the taxpayers to be compliant which then would improve filing and payment of various taxes increasing rate of compliance. With improved compliance, revenue would as well improve its performance.

2.4.4 Internet Accessibility and Tax Compliance

Yoshino and Abidhadjaev (2017) conducted an elaborate study covering a period between 1991 to 2003 on the impact of infrastructure on tax revenue, a case study of

high-speed train in Japan. The study adopted comparative analysis to tax performance raging in time series from the time the rail construction was commissioned to 4 years post completion. The findings of the study revealed that there is a spillover effect of the infrastructure on tax compliance. Specifically, the study notes that due to connectivity of the rail line to major networks of other railways, tax revenue significantly increased between the years under analysis. It was also found that when tax revenue increased as a result of technological infrastructural development and the revenue is ploughed back into the economy there is a spillover effect on other economic activities leading to more tax revenue collection (Yoshimo & Abidhadjaev, 2017).

Ayieni and Afolabi (2020) conducted a study on tax revenue, infrastructure development and economic growth in Nigeria. The study adopted annual secondary time series data analysis between 1981 to 2018. The series were examined using both Augmented Dickey Fuller (ADF) test and Phillip Perron (PP) test. Findings from the study showed that while tax revenue influences economic growth and infrastructure, internet infrastructure alone does not influence economic growth, but internet infrastructure significantly influence tax revenue collected. It was also noted in the study that there is a bi-directional cause effect between tax revenue and infrastructural development. Development of internet accessibility is important to improving tax revenue collected and the more the infrastructure is developed the more the likelihood of significant impact it has on tax compliance since taxpayers can easily interact with tax administration systems and tools.

Yoshino, Hossain and Hesary (2020), found out that enhancing infrastructural development across many sectors of technology including telecommunication, roads, air, and rail has a greater spillover effect on tax compliance. This because when internet accessibility is well developed the tax authority would share the spillover benefits of

using technological platforms by the taxpayers. Even though that technological might not necessarily originate from the country under which tax is realized, then benefits would still be felt. This is particularly evident in the growth of digital economy and the tax revenue gained thereon such as of digital service tax. The study is aimed at evaluating the influence that internet accessibility has on tax compliance. Even though globally there is acceptance that technology influences tax compliance positively, in the case of Kenya there is not much and comprehensive studies to ascertain this causality.

2.5 Summary of Reviewed Literature and Research Gaps

The chapter began by looking into the concept of the study where the main concept of the study was to investigate the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi, Kenya. The study assumed that information communication technology influenced tax compliance among small and medium taxpayers in Nairobi, Kenya. Fiscal System Theory, Theory of Technology Acceptance and the Theory of Planned Behavior were also reviewed. Further the chapter looked into empirical review where a number of scholars had conducted studies on the subject information communication technology adoption and tax compliance within the variables of the study as well. Many scholars agreed that information communication technology affected in one way or another, tax compliance. Still studies revealed that systems and tools were knight together and one cannot mention systems alone without tools as tools complete the systems. The study then established the missing gaps in the study and then closed down with conceptual framework.

Alibraheem and Abdul-Jabbar (2016), in Malaysia studied electronic tax filing adoption and its impact on employee's tax compliance. The study has only one independent

variable. Bramantyo (2020) studied the determinants of e-tax system and tools acceptance by users. The variables in the study were perceived usefulness, beliefs and compatibility. Rayahu, Setiawan and Troena (2017) studied taxpayers' awareness, tax regulation, understanding and their influence on taxpayers' compliance. Ayieni and Afolabi (2020) studied the relationship between tax revenue, infrastructure development, and tax revenue in Nigeria. Karimi, Kimani and Kinyua (2017) studied the effect of technology and information systems on revenue collection by county government of Embu, Kenya. The study adopted descriptive research methodology. Aondo (2019), studied on the effective of taxpayers' education on compliance for SMEs in Kenya. The study adopted descriptive research methodology, regression and correlation analysis were used for data analysis.

There are several conceptual and contextual gaps exhibited by the above reviewed studies. Conceptually the studies majored on employees tax compliance which is just but part of income tax, based on taxpayers attitudes and general awareness on tax laws, rules and guidelines. Contextually, even though some studies were based in Kenya, their scope and variables were not as similar to this proposed study. What these studies failed to investigate is the importance of information communication technology as a major contributor to income tax compliance among small and medium enterprises. For this reason, this proposed study will investigate the influence of information, communication technology on income tax compliance among small and medium enterprises in Nairobi, Kenya. The variables in the study being *iTax* system, online tax filing knowledge and internet accessibility which are elements of information communication and technology. To the best knowledge of the researcher no study has been conducted with similar variables and under the same conditions.

2.6 Conceptual Framework

According to Wekesa (2016), a conceptual framework is about showing the interrelationship of various variables and how they are like to affect each other in the study. These were further illustrated as follows:

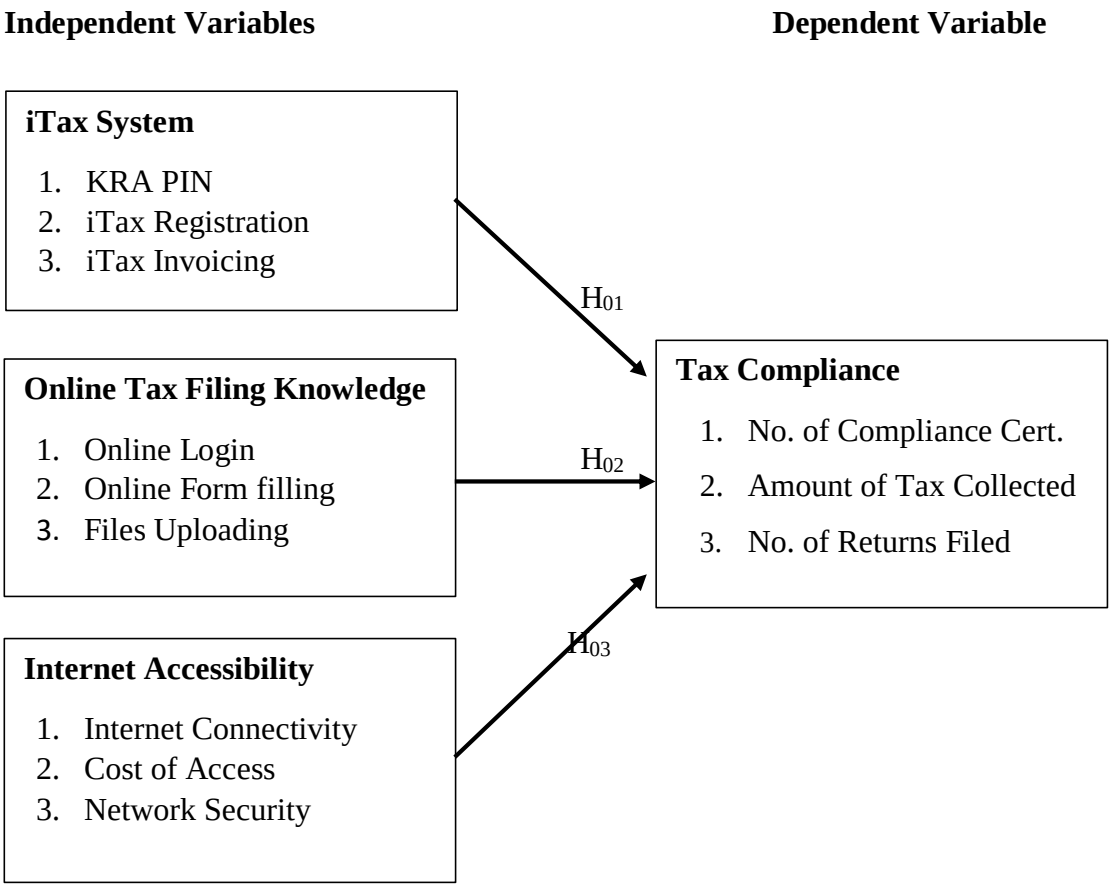

Figure 1: Conceptual Framework
Source: Author

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed the methods that were used to conduct the study. It began with setting out the research design, target population, sample procedure and sample size, data collection tools, validity and reliability of the research instruments, data collection procedure, data analysis technique and finally ethical considerations in the study.

3.2 Research Design

Research design is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context (Yin, 2009). It is all about establishing a systematic interface that ensures the interrelationship between the study's initial research questions and the empirical data that is accumulated thereon (Yin, 2009). This study adopted an explanatory research design. The primary purpose of explanatory research is to explain why phenomena occur and to predict future occurrences. Explanatory studies are characterized by hypotheses that specify the nature and direction of the relationship between or among variables being studied. This design is appropriate for the study because it allowed the researcher to generalize the findings to a larger population (Schindler & Cooper, 2003). The goal is often to generalize the results to the population from which the sample is selected (Fowler, 2002). According to Lawrence (2012), research design is a plan outlining techniques and strategies on how information is to be gathered for an assessment or evaluation that includes identifying the data gathering method, the instruments to be used, how the instruments will be administered and how the information will be organized and analyzed.

3.3 Target Population

Target population refers to the aggregate number of subjects or whole environment of concentration of the research as described by Oson and Onen (2011). The target population in this study were small and medium taxpayers as per Kenya Revenue Authority segregation of taxpayers. These were businesses with an annual turnover over of between KES 5 million and KES 50 million, within Industrial Area, in the East of Nairobi, in Nairobi County. These businesses were in the manufacturing sector. The target population comprised of 450 registered companies in various manufacturing sectors (KEMSA, 2021). The accountants were targeted as respondents. In the absence of the accountant, the immediate in-charge for taxes or finances was considered the respondent.

3.4 Sampling Procedure and Sample Size

This section described the strategies that were used to identify the main categories of respondents for the study.

3.4.1 Sampling Procedure

According to Kothari (2006), sampling enables the researcher to estimate unknown characteristics of the population and make generalization with overall accuracy. For this study, a cluster sampling procedure was adopted first where only small and medium taxpayers in the manufacturing sector were chosen to participate in the study. Further, stratified sampling was used in order to ensure that within the manufacturing sector, all eligible small and medium taxpayers were adequately represented in the sample within the sector stratum. Stratified random sampling is unbiased sampling method of grouping heterogeneous population into homogenous subsets then selecting within the individual subset to ensure representativeness. According to Kothari (2004), in stratified random sampling subjects are selected in such a way that the existing sub-

groups in the population are more or less represented in the sample. From the sample small and medium taxpayers, the accountants in each of the sampled SME were subjected to the study instrument. This was due to their roles and responsibilities in accounting for taxes within these respective manufacturing firms.

3.4.2 Sample Size

A sample is defined as a small proportion of an entire population, a selection from the population (Lohr, 2010). Sample size determination is the act of choosing the number of observations or replicates to include in a statistical sample. The sample size for this study was determined using Bridget and Lewin (2005) formula. This formula assumed a normal distribution on the assumption that the realtors were normally distributed in relation to the parameters under study.

Using the formula and a precision level of 5%, desired sample size is determined to be as below.

$$n = \frac{N}{1 + N\,(e)^2} = \frac{420}{1 + 420\,(0.05)^2} = 205\ small\ and\ medium\ taxpayers$$

Where n = sample size, N = population size, e = the error of sampling or precision/error limit at 95% level of confidence, p = 0.5 and 5% level of precision is required. This sample size was considered adequate since it was greater than 1% sample size of the target population (Gravette & Forzano, 2012). This was further distributed as follows along the sectors strata.

Table 3.1: Sample Size Distribution

Manufacturing Sector	Target Population	Percentage	Sample size	Percentage
Plastic & Rubber	82	19	39	19
Automotive	54	13	27	13
Chemical & Allied	81	19	39	19
Electricals & Electronics	49	12	25	12
Building & Construction	47	11	23	11
Leather & Footwear	17	4	8	4
Textile & Apparel	62	15	30	15
Pharmaceuticals	28	7	14	7
Total	**420**	**100**	**205**	**100**

3.5 Data Types and Sources

The study collected primary data using self-administered questionnaire as the main instrument for data collection from each of the respondent identified in the study. Cooper and Schindler (2012) noted that questionnaires work best with standardized questions that one can be confident to interpret the same way by all respondents. They further contended that questionnaires are mostly used for explanatory research. For the purpose of this research, the questionnaire was based on closed-ended questions aimed at generating brief and specific answers from the participants. The questionnaire was prepared in form of a five-point Likert scale and organized in line with the research objectives. On the other hand, secondary literature was reviewed to inform concepts of the study, theories and empiricism of the study. Secondary literature reviewed also enabled corroboration with the findings from the field to facilitate informed analysis, conclusions and recommendations.

3.6 Measurement and Operationalization of Study Variables

The study adopted four variables where tax compliance, the dependent variables measured by iTax system, online tax filing awareness, and internet accessibility as independent variables. Tax compliance was measured using the indicators of number of compliance certificates, amount of tax collected, and number of returns made. Alibraheem & Abdul-Jabber (2016) measured tax compliance using technology adoption and employee performance. Karimi, Kimani & Kinyua (2017), measured tax compliance using technology adoption and information systems. Data was collected using a five-point Likert scale questionnaire and analyzed using regression and correlation analysis.

iTax system was measured using ownership of personal identification number (PIN), *iTax* registration, and *iTax* invoicing. Data was collected using a five-point Likert scale questionnaire and data analyzed using regression and correlation analysis. Bramantyo (2020) though, measured tax systems using e-tax system, perceived usefulness, beliefs and systems compatibility. However, Usman & Abdulahi (2020) measured tax systems using e-filing intention, age of the taxpayer, and level of education of the taxpayers while interacting with the tax systems.

Online tax filing knowledge was measured using the indicators of online login, online form filling, and online file uploading. Data was collected using a five-point Likert scale questionnaire and data analyzed using regression and correlation analysis. Rayanu, Setiawan & Troena (2017) measured tax filing using the indicators of taxpayers knowledge, taxpayers understanding and taxpayers awareness of using the online platforms to interact with the tax authorities. Pattiasina *et al*. (2020) measured online filing with online tax filing knowledge and tax sanctions.

Internet accessibility was measured using internet connectivity, cost of access, and internet network security. Data was collected using a five-point Likert scale questionnaire and data analyzed using regression and correlation analysis. Yoshima & Abidhadjaeve (2017) measured internet connectivity with connections availability. Ayieni & Afolabi (2020) measured connectivity using internet infrastructure and internet accessibility.

The study adopted ordinal technique of measuring the degree to which the dependent variable was affected by the independent variable. Pearson Correlation analysis (r) was used to determine and measure the strength and direction between dependent variable and each of the independent variables. Coefficient of Determination (r^2) was used to measure the proportion of variance in the dependent variable than can be explained by the independent variable. ANOVA, T- and F- tests were used to test the significance of the model in measuring the relationship between information communication technology adoption and tax compliance at 95% confidence level and 5% significance level. A confidence level of between 90% and 99% were sufficient to make conclusion on the model's significance while tested at P value (Zar, 1984).

3.7 Pilot Study

According to Payne (2016), a pilot study is a mini version of a full-scaled study executed as is planned for the intended study but on a smaller scale. The pilot study helped pre-test the research instrument in this case the questionnaire in order to test various indicators, methodological processes, and reveal any deficiencies present in the tool. A pilot test was carried on a smaller group of SMEs representing 10% making a total of 21 SMEs of the sampled population who were not part of the sampled respondents for the main study twice to pre-test all parameters in the questionnaire (Mugenda & Mugenda, 2003). The pilot study was conducted in Kajiado County,

Kitengela Township. The respondents were identified through stratified sampling where two representatives of every SME stratum was subjected to the study instrument. The strata were eight with five strata having the probability of three representatives being subjected to the study instruments. The respondents were encouraged to make comments and suggestions on questions that were not clear. The questionnaire was then adjusted based on the comments of the respondents and given to them for the second time. The scores of the first and the second time were recorded and correlated to test for reliability of the questionnaire. The reliability tests were recorded and reported in table 4.2.

3.7.1 Validity of the Instruments

Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are (Joppe, 2000). It is high if the study contains what one wants to study and nothing else. Content validity was considered based on the study objectives. Individual questions were developed to reveal whether the wording of items used to measure a concept relate to that concept or one of its dimensions. The purpose of this was to ensure that each measure assessed the construct it purported to assess. The questionnaire was then subjected to check by the supervisor. The supervisor reviewed the contents of the questionnaire and gave advice to ensure that the instrument aimed at getting responses that contributed to achievement of the study objectives.

3.7.2 Reliability of the Instrument

The questionnaires were tested for reliability during the pilot study. A test re-test technique was used which involved administering the same instrument twice to a different group after a certain time interval had elapse since the previous test. The scores of the first and the second time tests were recorded and correlated to test for the

reliability of the instrument. In this study the Cronbach's Alpha Coefficient was used to test the reliability of the measure used in the instrument. A test with reliability of values greater or equal to 0.7 was accepted as indicator of internal consistency (Mohsen and Reg, 2011).

3.8 Data Collection Procedure

Prior to the commencement of data collection, the researcher obtained the necessary document including an introduction letter from the University and permission from National Commission for Science, Technology, and Innovation (NACOSTI). Upon getting clearance, the questionnaires were administered by the researcher with the help of research assistants directly to the respondents at their workstation. For respondents who preferred being interviewed instead of filling the questionnaire, the researcher/ assistants read and filled the responses on their behalf.

3.9 Data Analysis Techniques and Presentation

Data analysis is the complete process, which starts immediately after data collection and ends at the point of interpretation and processing (Cresswell, 2015). Therefore, before processing the responses, the completed questionnaires were edited for completeness and consistency. Both quantitative and inferential statistics were used to analyse the data. Quantitative statistics generated such as frequencies, percentages, standard deviations, and mean scores were presented in tables. Linear regression was used to show a linear relationship between the independent variables and dependent variable.

3.10 Assumption of Regression Tests

Assumption of regression tests were carried out to empirically determine the quantitative effect of study design and shortcomings that might have been in the

regression analysis (Wheeler & Tiefelsdorf, 2005). The study conducted two main tests which were normality and multicollinearity as these were deemed most crucial to the explanatory design to validate the accuracy and reliability of the findings. The assumption was that there was true linear relationship between tax compliance and *iTax* System, online tax filing knowledge, and internet accessibility. The study also assumed that errors were normally distributed, there was equal variance around the regression line during the analysis of the variables and that the relationship was independent of one another to regress the relationship between the variables.

3.10.1 Normality Test

According to Amata (2017), normality test was used to determine whether a data set is normally distributed. Visual representation of the distribution of tests results determines whether it conforms to the bell-shaped normal curve (Amata, 2017). The normality test was done using Shapiro Wilk Test which is regarded as the most powerful test for all types of distribution where sample size are greater than fifty samples (Razali & Yap, 2011). In the study the sample size was two hundred and five with a respondent rate of 83% surpassing the minimum quantity required for Shapiro Wilk-test. The test revealed that data came from a normally distributed population which then was valid for further statistical analysis as shown in table 4.9.

3.10.2 Multicollinearity Test

It was important to test for multicollinearity among independent variables since the presence of multicollinearity leads to multiple errors in the analysis of data (Zainodin & Yap, 2011). When two or more independent variables are linearly dependent on each other, then one of them should be used in data analysis instead of the two or more as this increases the standard errors, making the results biased (Alin, 2010). The study used Variance Inflation Factor (VIF) of values to measure whether the independent

variables (IVs) suffer multicollinearity problem, a VIF value ≥10 shows there is a multicollinearity while any VIF value ≤ 10 with a tolerance factor of ≥ 0.2 is ideal and acceptable measure of multicollinearity. The test revealed that independent variables did not suffer multicollinearity as reported in table 4.10.

3.11 Analytical Model

The analytical model used in the study was multiple linear regression model as follows:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon}$$

Where: Y - Tax Compliance

β_0- β_3 - Regression coefficient of independent variables

X_1 – iTax systems on tax compliance

X_2 - Online tax filing knowledge on tax compliance

X_3 - Internet accessibility on tax compliance

ε - error term; it considers all the possible factors that would possibly influence the dependent variable though not captured in the model.

3.12 Ethical Considerations

The researcher assured respondents that all the information provided was treated with utmost confidentiality and that their identity was always protected. The researcher also adhered to all ethical issues of honesty, cultural sensitivity, informed consent, and voluntary participation. Moreover, respect for intellectual property was ensured by honoring patents, copyrights, and acknowledgment of other contributions from various parties and scholars. Personal particulars like name and address was not disclosed. To assure the respondents that the information provided was solely for academic purpose, the researcher presented the introduction letter from the university and research permit

from NACOSTI. Permission was sought and the respondents informed beforehand about the nature and the objective of the study. The researcher was bound to adhere to all ethical issues of honesty, privacy, cultural sensitivity, informed consent, and voluntary participation.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presented the study findings of the primary data collected through the use of closed ended questionnaires with the main areas of study analyzed were the questionnaires response rate, reliability statistics and the basic information of the respondents. The study objectives included: to investigate the influence of *iTax* system on tax compliance among small and medium taxpayers in Nairobi County, to evaluate the influence of online tax filing knowledge tax compliance among small and medium taxpayers in Nairobi County and to establish the influence of internet accessibility on tax compliance among small and medium taxpayers in Nairobi County. Both descriptive and inferential statistics were used in data analysis, presentation and interpretation of the data.

4.2 Questionnaire's Response Rate

The study target response rate was 205 questionnaires, whereby, 171 questionnaires were correctly filled and returned achieving an 83% return rate as shown in table 4.1. According to C.R. Kothari (2014), a response rate of more than 70% was considered appropriate for data analysis and aided in minimizing sample biasness.

Table 4.1: Response Rate

Return Rate	**Frequency**	**Percent**
Returned Questionnaires	171	83
Unreturned Questionnaires	34	17
Total	**205**	**100**

4.3 Reliability Statistics

A test with reliability of values greater or equal to 0.7 was accepted as indicator of internal consistency (Mohsen and Reg, 2011). Therefore, the reliability threshold for this study was 0.7 which was considered to be reliable. As shown in table 4.2, online tax filing knowledge had the highest reliability score of (α=0.887), followed by *iTax* system with (α=0.877). The other variables of internet accessibility and tax compliance had a reliability score of (α=0.825) and (α=0.746) respectively.

Table 4. 2: Reliability Statistics

Variable	Number of Items	Cronbach's Alpha Score	Conclusion
iTax System	5	.877	Reliable
Online Tax Filing Knowledge	5	.887	Reliable
Internet Accessibility	5	.825	Reliable
Tax Compliance	5	.746	Reliable

4.4 Basic Information

The basic information of the respondents in this study focused on the gender, age, highest level of education attained, how long one had been in this business, the respondents' role in the business and how much was their annual turnover for the last three years in Kenya Shillings.

4.4.1 Gender

The study asked for the respondents' gender as indicated in table 4.3, whereby, majority of the respondents at 57% were male while female presented 43% of the respondents. This displayed the male gender to be higher than the female gender.

Table 4.3: Gender

Gender	Frequency	Percent
Female	74	43
Male	97	57
Total	**171**	**100**

4.4.2 Age

The respondents' age was analyzed and presented in table 4.4. The study results indicated that majority of the respondents at 40% were between ages 29-39 years, followed by 26% of the respondents who were between ages 18-28 years. 23% and 11% of the respondents were 40-50 years and above 50 years respectively.

Table 4. 4: Age

Age	Frequency	Percent
18-28 years	44	26
29-39 years	69	40
40-50 years	39	23
Above 50 years	19	11
Total	**171**	**100**

4.4.3 Highest Level of Education

The study sought information regarding the respondents' highest level of education attained as shown in table 4.5. The study outcomes displayed that majority of the respondents at 34% had a secondary level, followed by 28% of the respondents who had a diploma level. 24% of the respondents had a degree level while 9% had a primary level. Only 5% of the respondents did respond to not having any level of education. These depictions exhibited good literacy levels of the respondents that helped in realizing excellent responses. Moreover, the respondents easily understood the study in perspective and answered with simplicity.

Table 4.5: Level of Education

Level of Education	Frequency	Percent
Primary Level	15	9
Secondary Level	58	34
Diploma Level	48	28
Degree Level	41	24
No Answer	9	5
Total	**171**	**100**

4.4.4 Duration in the Business

The study further solicited information concerning the duration the respondents had been in the business as represented in table 4.6. The findings revealed that majority of the respondents at 39% had been in the business between 16 and 25 years, followed by a 25% and 23% of the respondents who said they had been in the business between 6 and 15 years and less than 5 years respectively. Only 13% of the respondents had been in the business for more than 25 years. These responses gave a good representation in making of the study conclusions.

Table 4. 6: Duration in the Business

Duration	Frequency	Percent
Less than 5 years	39	23
6 and 15 years	43	25
16 and 25 years	66	39
More than 25 years	23	13
Total	**171**	**100**

4.4.5 Respondents Role in the Business

The study sought for the respondents' role in the business and the findings in table 4.7 revealed that majority of the respondents at 32% were the business owners while 26% of the respondents were sales executives. 23% and 19% of the respondents constituted of the local representatives and business accountants respectively.

Table 4.7: Respondents Role in the Business

Role	Frequency	Percent
Business Owner	55	32
Business Accountant	33	19
Local Representative	39	23
Sales Executive	44	26
Total	**171**	**100**

4.4.6 Annual Turnover

Finally, the study sought information regarding the respondents' annual turnover for the last three years in Kenya Shillings as represented in table 4.8. The study findings revealed that majority of the respondents at 32% achieved an annual turnover of between 5,000,000-10,000,000 while 26% of the respondents had an annual turnover of 10,000,000-15,000,000. 15% and 10% of the respondents mentioned of getting an annual turnover of between 15,000,000-30,000,000 and less than 5,000,000 respectively. 9% and 8% of the respondents had an annual turnover of 30,000,000-90,000,000 and 90,000,000 and more respectively. These results were well distributed to help in making the study's conclusions.

Table 4. 8: Annual Turnover

Turnover	Frequency	Percent
Less than 5,000,000	17	10
5,000,000 - 10,000,000	54	32
10,000,000 - 15,000,000	45	26
15,000,000 - 30,000,000	25	15
30,000,000 - 90,000,000	16	9
90,000,000 and more	14	8
Total	**171**	**100**

4.5 Tests for Statistical Assumptions

The study carried out various tests for linear regression assumptions. These include tests for normality research data using Shapiro-Wilk (SW); and tests for multicollinearity using correlation matrix and Variance Inflation Factors (VIFs).

4.5.1 Normality Test

The study used Shapiro-Wilk test (SW-test) to ascertain that data was normally distributed since this is one of the assumptions of linear regression analysis. Shapiro Wilk test was adopted since data sample greater than 50 respondents. The study used Shapiro Wilk test to test for normality, whereby, if the p-value of Shapiro Wilk test is greater than 0.05, then the data is from a normally distributed population. If the p-value is less than 0.05, then it significantly violates the normal distribution assumption. The results Shapiro-Wilk tests were presented in table 4.9. Based on the results, the study concluded that data came from a normally distributed population.

Table 4. 9: Tests of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
Tax Compliance	.864	171	.068
iTax Systems	.672	171	.059
Online Tax Filing Knowledge	.799	171	.075
Internet Accessibility	.826	171	.063

4.5.2 Multicollinearity Test

Using a Variance Inflation Factor (VIF) of values to measure whether the independent variables (IVs) suffer multicollinearity problem, a VIF value ≥10 shows that there is multicollinearity while any VIF value ≤ 10 with a tolerance factorof ≥ 0.2 is ideal and acceptable measure of multicollinearity. The study results in table 4.10 indicated that the VIF values of ≤ 10 implied that there was no multicollinearity problem among the variables.

Table 4.10: Test of Multicollinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	iTax Systems	.222	4.509
	Online Tax Filing Knowledge	.114	8.794
	Internet Accessibility	.099	8.962

4.6 iTax System

The first objective of the study was to investigate the influence of *iTax* system on tax compliance among small and medium taxpayers in Nairobi County. The respondents views were indicated using a 5-point Likert-scale ranging from (1) = Strongly Disagree, (2) = Disagree, (3) = Neutral, (4) = Agree and (5) = Strongly Agree and the verdicts were shown in table 4.11.

The study findings indicated that majority of the respondents with a mean score of 4.01 agreed that their businesses were aware of the existence of iTax system used by the revenue authority to interact and communicate with taxpayers while a mean of 3.97 of the respondents equally agreed that their businesses preferred using iTax as it saved them time and money that would have otherwise been spent on visiting and being attended to physically. The mean scores of 3.94 and 3.88 of the respondents agreed their businesses were registered with Kenya Revenue Authority and thus it possessed the Personal Identification Number (PIN) and did not experience any challenges when using iTax system as it offered their businesses all the solutions, they needed to comply with tax requirements for their businesses respectively. Only a mean score of 3.78 of the respondents agreed that their businesses were registered on iTax where the businesses used the system to declare, file, compute and pay the amount of tax due.

Overall, with a mean score of 3.91 of the respondents, the study concluded that there was influence of *iTax* system on tax compliance among small and medium taxpayers in Nairobi County.

Table 4. 11: iTax Systems

Statements		SD	D	N	A	SA	Mean	Std. Dev
My business is aware of the existence of iTax system used by the revenue authority to interact and communicate with taxpayers	**f**	4	19	10	77	61	4.01	1.038
	%	2	11	6	45	36		
My business is registered with Kenya Revenue Authority and thus it possesses Personal Identification Number (PIN)	**f**	8	16	10	82	55	3.94	1.085
	%	5	9	6	48	32		
My business is registered on iTax where the business uses the system to declare, file, compute and pay the amount of tax due	**f**	9	22	14	79	47	3.78	1.142
	%	5	13	8	46	27		
I do not have any challenges using iTax system as it offers my business all the solutions, I need to comply with tax requirements for my business	**f**	4	19	16	86	46	3.88	1.005
	%	2	11	9	50	27		
My business prefers using iTax as it saves me time and money that would have otherwise been spent on visiting and being attended to physically	**f**	6	18	9	80	58	3.97	1.065
	%	4	11	5	47	34		
Composite Mean and Standard Deviation (n=171)							**3.91**	**1.067**

4.7 Online Tax Filing Knowledge

On the second objective, the respondents were asked to evaluate the influence of online tax filing knowledge on tax compliance among small and medium taxpayers in Nairobi County. The opinion results were measured using a 5-point Likert-scale ranging from (1) = Strongly Disagree, (2) = Disagree, (3) = Neutral, (4) = Agree and (5) = Strongly Agree and the study conclusions were as shown in table 4.12.

The study outcomes revealed that majority of the respondents with a mean of 4.13 agreed that their businesses found it cost-effective to file, compute and pay for taxes due online without having to go to revenue offices in persons while the means of 3.88 and 3.79 of the respondents agreed that they knew how to initiate online tax filing processes from the first step through to all steps required to complete any initiated process and their businesses always filed tax returns online, raised tax invoices online and uploaded receipts online respectively. In addition, respondents with mean scores of 3.52 and 3.30 agreed that they only came to know how to file taxes online since the time they were shown a demonstration on how it is done by the revenue authority personnel and their businesses sometimes missed filing tax online due to forgetfulness and being busy with other important business matters respectively.

Overall, with a mean score of 3.72 of the respondents, the study concluded that there was influence of online tax filing knowledge on tax compliance among small and medium taxpayers in Nairobi County.

Table 4.12: Online Tax Filing Knowledge

Statements		SD	D	N	A	SA	Mean	Std. Dev
My business always files tax returns online, raise tax invoices online and upload receipts online	f	5	28	13	77	48	3.79	1.113
	%	3	16	8	45	28		
I know how to initiate online tax filing processes from the first step through to all steps required to complete any initiated process	f	2	17	17	99	36	3.88	0.896
	%	1	10	10	58	21		
I only came to know how to file taxes online since the times I was shown a demonstration how it is done by the revenue authority personnel	f	15	36	7	71	42	3.52	1.303
	%	8	21	4	42	25		
My business sometimes misses filing tax online due to forgetfulness and being busy with other important business matters	f	14	48	15	55	36	3.30	1.301
	%	8	28	11	32	21		
My business finds it cost effective to files, compute and pay for taxes due online without having to go to revenue offices in persons	f	5	16	7	66	77	4.13	1.057
	%	3	9	4	39	45		
Composite Mean and Standard Deviation (n=171)							**3.72**	**1.134**

4.8 Internet Accessibility

The third objective of the study was to establish the influence of internet accessibility on tax compliance among small and medium taxpayers in Nairobi County. The views were measured using a 5-point Likert-scale ranging from (1) = Strongly Disagree, (2) = Disagree, (3) = Neutral, (4) = Agree and (5) = Strongly Agree and the outcomes were presented in table 4.13.

The study judgments showed that majority of the respondents with a mean of 3.85 agreed that their businesses depended on the internet availability to file, compute and pay for their taxes due to the revenue authority as required by law whereas a mean of 3.45 and 2.85 of the respondents agreed that their businesses depended on a shared wired or wireless internet connection which then the businesses use to file its tax returns and pay what is due and that their businesses incurred heavy costs to access the internet which then enabled them to access the revenue authority's systems respectively. Furthermore, respondents with means of 2.76 and 2.35 with of the respondents agreed that they thought that internet accessibility was always unreliable and therefore should had been a second option to tax and that their businesses had failed at least once to comply to tax laws, rules and requirement as a result of internet failure and connectivity breakdown respectively.

Overall, with a mean score of 3.05 of the respondents, the study concluded that there was influence of internet accessibility on tax compliance among small and medium taxpayers in Nairobi County.

Table 4. 13: Internet Accessibility

Statements		SD	D	N	A	SA	Mean	Std. Dev
My business depends on the internet availability to file, compute and pay for my taxes due to the revenue authority as required by law	**f**	8	22	12	75	54	3.85	1.143
	%	5	13	7	44	32		
My business incurs heavy costs to access the internet which then enables me to access the revenue authority's systems	**f**	28	59	15	48	21	2.85	1.327
	%	16	35	9	28	12		
My business has failed at least once to comply to tax laws, rules and requirement as a result of internet failure and connectivity breakdown	**f**	62	52	9	31	17	2.35	1.387
	%	36	30	5	18	10		
My business depends on a shared wired or wireless internet connection which then the businesses use to file its tax returns and pay what is due	**f**	16	32	15	75	33	3.45	1.256
	%	9	19	9	44	19		
I think that internet accessibility is always unreliable and therefore should be a second option to tax filing, computation and payment	**f**	37	55	14	42	23	2.76	1.387
	%	22	32	8	25	13		
Composite Mean and Standard Deviation (n=171)							**3.05**	**1.300**

4.9 Tax Compliance

The dependent variable for this study was tax compliance among small and medium taxpayers in Nairobi County. The observations were measured using a 5-point Likert-scale ranging from (1) = Strongly Disagree, (2) = Disagree, (3) = Neutral, (4) = Agree and (5) = Strongly Agree and the study outcomes were presented in table 4.14.

The study results indicated that majority of the respondents with a mean of 3.80 agreed that their businesses contributed to tax compliance by ensuring the rightful tax filing procedures were adhered to as provided for by the law while a mean of 3.73 of the respondents agreed that their businesses had at least once, or more been engaged to an external expert to handle their tax matters which was costly though. Similarly, respondents with means of 3.01 each agreed that they knew that information communication technology adoption and use was important to improving tax compliance and given the opportunity in their businesses, they would avoid and evade payment if they knew there were no negative economic consequences respectively. Furthermore, the mean score of 2.61 of the respondents agreed that since their businesses fell under small and medium taxpayers, they were ever confused between so many tax bases on which to comply with.

Overall, with a mean score of 3.23 of the respondents, the study concluded that there was tax compliance among small and medium taxpayers in Nairobi County.

Table 4.14: Tax Compliance

Statements		SD	D	N	A	SA	Mean	Std. Dev
My business contributes to tax compliance by ensuring the rightful tax filing procedures are adhered to as provided for by the law	**f**	3	27	15	82	44	3.80	1.049
	%	2	16	9	48	26		
I know that information communication technology adoption and use is important to improving tax compliance	**f**	4	18	9	83	57	3.01	1.012
	%	2	11	5	49	33		
Given the opportunity in my business, I would avoid and evade payment if I know there will be no negative economic consequences	**f**	26	48	18	57	22	3.01	1.322
	%	15	28	11	33	13		
Since my business falls under small and medium taxpayers, I am ever confused between so many tax bases on which to comply with	**f**	42	54	15	48	12	2.61	1.312
	%	25	32	9	28	7		
My business has at least once or more have to engage an external expert to handle our tax matters which is costly though	**f**	9	27	14	73	48	3.73	1.183
	%	5	15	8	43	28		
Composite Mean and Standard Deviation (n=171)							**3.23**	**1.176**

4.10 Inferential Statistics

This was done using correlation analysis which employed Pearson Correlation coefficient to show the strength of relationships between the independent variables and the dependent variable. A high correlation meant that two or more variables had a strong association with each other, while a weak correlation meant that the variables were hardly related. The results for this study were exhibited in table 4.15.

4.10.1 Correlation Analysis

Pearson correlation coefficient (r) was used to assess strength of association between the study variables and the conclusions for this study were shown in table 4.15 which revealed that iTax systems was positively and significantly associated with tax compliance as shown r=0.844 and p=0.000<0.05). Also, the results revealed that online tax filing knowledge was positively and significantly associated with tax compliance as shown r= 0.878 and p=0.000<0.05). Again, the results presented that internet accessibility was positively and significantly associated with tax compliance as shown r=0.870 and p=0.000<0.05

Table 4. 15: Correlation Analysis

		Tax Compliance	iTax Systems	Online Tax Filing Knowledge	Internet Accessibility
Tax Compliance	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	171			
iTax Systems	Pearson Correlation	.844**	1		
	Sig. (2-tailed)	.000			
	N	171	171		
Online Tax Filing Knowledge	Pearson Correlation	.878**	.857**	1	
	Sig. (2-tailed)	.000	.000		
	N	171	171	171	
Internet Accessibility	Pears on Correlation	.870**	.877**	.939**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	171	171	171	171

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

4.10.2 Regression Analysis

The overall objective of the study was to establish the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi County. And to achieve this, the study focused on three main objectives which were iTax systems, online tax filing knowledge and internet accessibility. Additionally, the hypotheses were likewise formulated.

4.10.2.1 Model Summary

Table 4.15 revealed that iTax systems, online tax filing knowledge and internet accessibility had a positive relationship with tax compliance up to 89.8% or (R= 0.898). In addition, the results revealed that iTax systems, online tax filing knowledge and internet accessibility caused a variation of 81% or (R2=0.807 and adjusted R2 =0.803) on tax compliance. This implied that the remaining only 9% of the change was caused by other factors not included in the model.

Table 4. 16: Effect of iTax Systems, Online Tax Filing Knowledge, Internet Accessibility on Tax Compliance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.898[a]	.807	.803	.369

a. Predictors: (Constant), ITax Systems, Online Tax Filing Knowledge, Internet Accessibility

4.10.2.2 Analysis of Variance

Likewise, ANOVA tests were done to determine whether the model works in explaining the link among variables as assumed in the conceptual framework. The study interpretations from table 4.17 displayed an F statistics value of 232.605 with a significance level of P=0.000<0.05, hence, establishing the model is statistically significant. The implication is that each independent variable contributed significantly to changes in the dependent variable.

Table 4. 17: ANOVA Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	95.257	3	31.752	232.605	.000[a]
	Residual	22.797	167	.137		
	Total	118.054	170			

a. Predictors: (Constant), Internet Accessibility, ITax Systems, Online Tax Filing Knowledge
b. Dependent Variable: Tax Compliance

4.10.2.3 Regression Analysis Model

The regression analysis model exhibited the association between iTax systems, online tax filing knowledge and internet accessibility as shown in table 4.18.

Table 4. 18: Regression Analysis Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.404	.155	.404	2.612	.010
	iTax Systems	.275	.069	.289	3.997	.000
	Online Tax Filing Knowledge	.377	.089	.430	4.261	.000
	Internet Accessibility	.178	.090	.214	1.981	.049

a. Dependent Variable: VAT Compliance
b. Predictors: (Constant), VAT Knowledge, VAT Imposition Procedures, VAT Tools and Systems

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

From table 4.18 the regression model is:

$Y= 0.404+ 0.289\ X_1+0.430\ X_2+ 0.214\ X_3$

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

Where:

Y= Tax Compliance, β_0 = Constant term.

β_1- β_3 - Regression coefficient of independent variables

X_1= iTax systems on tax compliance

X_2 = Online tax filing knowledge on tax compliance

X_3 = Internet accessibility on tax compliance

ε = error term.

β_1 β_2 and β_3 are coefficients of the various determinants of performance; and ε is error term.

The regression equation showed that a constant change of 0.404, a unit change in iTax systems causes an increase of 0.289 in tax compliance while a unit change in online tax filing knowledge causes an increase of 0.430 in tax compliance. A unit change in internet accessibility causes an increase of 0.214 in tax compliance.

4.10.2.4 Test of Hypotheses

The first hypothesis H_{01} stated that there is no significant of *iTax* system on tax compliance among small and medium taxpayers in Nairobi County. However, *iTax* system had a positive effect on the tax compliance among small and medium taxpayers in Nairobi County. The results on table 4.18 revealed that p value was less than 0.05, ρ=0.000 and a standardize beta of 0.289 which implied that the relationship was statistically significant therefore the null hypothesis was rejected.

The second hypothesis H_{02} stated that there is no significant influence of online tax filing knowledge on tax compliance among small and medium taxpayers in Nairobi County. However, online tax filing knowledge had a positive effect on tax compliance among small and medium taxpayers in Nairobi County. The results on table 4.18 revealed that p value was less than 0.05, ρ=0.000 and a beta of 0.430 which implied that the relationship was statistically significant therefore the null hypothesis was rejected.

The third hypothesis H_{03} stated that there is no significant influence of internet accessibility on tax compliance among small and medium taxpayers in Nairobi County. However, internet accessibility had a positive effect on the tax compliance among small and medium taxpayers in Nairobi County. Hence, the results on table 4.18 revealed that p value was equal to 0.05, ρ=0.049 and beta of 0.214 which implied that the relationship was statistically significant therefore the null hypothesis was rejected.

4.11 Discussion of Findings

This segment displayed the discussion of the results of various tests carried out on the study. The outcomes of each of the hypothesis in this study were as discussed.

4.11.1 iTax Systems and Tax Compliance

The first objective of the study was to investigate the influence of *iTax* system on tax compliance among small and medium taxpayers in Nairobi County. The deductions revealed that the relationship between iTax systems and tax compliance was statistically significant at a p value of 0.000 which was less than 0.05 the probability significance level and beta value of 0.289. The study had hypothesized that there is no significant influence of *iTax* systems on tax compliance which was however rejected since hypothesis testing revealed otherwise. Drawing from the theory of technology acceptance model, proponents of the theory posited that when taxpayers are faced with the new technology adoption options, they perceive the usefulness of that technology. The perceived usefulness tend to influence them to use that technology which in turn work towards the improvement on the objectives of the technology being adopted. In this case, the usage iTax systems once perceived as useful, taxpayers would increase usage with then leads to better compliance (Bagozzi, Davis & Warshaw, 2007)

In concurrence with the results ADB (2014) further stated that *iTax* system was inseparable since the tools cannot work automatically 100% without the involvement of the human capacity found within ICT adoption. This enabled taxpayers to perform self-service tax functions when they wished to and reaching out to taxpayers with regular refreshed information and alerts on tax matters, compliances and liabilities. This ability was likely to enhance taxpayers' perception of the tax authority as being responsive to their needs and hence develop a habit of compliance as they found it easier to reach the authorities through the technological platforms such as *iTax* systems. Additionally, various studies had revealed that economic growth and tax revenue had seen increased growth through the implementation of simplified and convenient self-services based on electronic filing and payment *iTax* system (ADB, 2014; IMF, 2016 & World Bank, 2018). These previous studies are in agreement with this study findings as has been shown by both regression, correlation and hypothesis testing where all the p values and beta values showed positive and significant relationship with tax compliance.

4.11.2 Online Tax Filing Knowledge and Tax Compliance

The second objective of the study was to evaluate the influence of online tax filing knowledge on tax compliance among small and medium taxpayers in Nairobi County. The inferences showed that the relationship between online tax filing knowledge and tax compliance was statistically significant at a p value of 0.000 which was less than 0.05 the probability significance level with stronger beta value of 0.430. The study had hypothesized that there was no significant influence of online tax filing knowledge on tax compliance, however the findings showed that the influence was statistically significant and hence the null hypothesis was rejected. The theory of fiscal exchange pointed that that when taxpayers perceive the benefits they get from payment of taxes,

this would attract their attention to be more compliant. Taxpayers would seek more information and gain the requisite knowledge to be compliant while interacting with the exiting technology (Bodea & LeBas, 2013).

In agreement to these study results were Aondo (2019) who conducted a study on the effectiveness of taxpayers' education on compliance for SMEs in Kenya and found out that online tax filing knowledge had influence on compliance across all tax bases including PAYE and others. Likewise, Pattiasina *et a*l. (2020) on determinants of taxpayer compliance level in East Indonesia revealed that online tax filing knowledge and tax sanctions had a significant positive effect on tax compliance. Online tax filing knowledge based on the literature reviewed is considered critical to compliance and compliance is vital towards improved tax revenue. Even though it is hard to ascertain compliance fully among taxpayers, scholars do agree that general tax knowledge, procedural online tax filing knowledge and legal online tax filing knowledge are all required by the taxpayers to be compliant which then would improve filing and payment of various taxes, increasing rate of compliance. With improved compliance, revenue would as well improve its performance.

4.11.3 Internet Accessibility and Tax Compliance

The third objective of the study was to establish the influence of internet accessibility on tax compliance among small and medium taxpayers in Nairobi County. The assumptions revealed that the relationship between internet accessibility and tax compliance was statistically significant at a p value of 0.049 which was equal to 0.05 the probability significance level with a stronger beta value of 0.214. even though the study had hypothesized that there was no significant influence of internet accessibility on tax compliance, findings revealed that internet accessibility was significant to

taxpayers compliance. Internet accessibility is critical to enhance communication between the taxpayers and the tax authority. The constant access to these tax payment capabilities aided by reliable internet access, enhances the behaviour to comply with tax obligations especially filing returns and payment of taxes due. The theory of planned behaviour further strengthened these findings since frequent access to tax authorities using the internet would enhance the behaviour of compliance since taxpayers would perceive tax authorities as always within reach and accessible to solve problems and challenges that they would have otherwise faced.

Ayieni and Afolabi (2020) conducted a study on tax revenue, infrastructure development and economic growth in Nigeria and noted that development of internet accessibility was important to improving tax revenue collected and the more the infrastructure was developed the more the likelihood of significant impact it had on tax compliance since taxpayers could easily interact with tax administration systems and tools. Enhancing infrastructural development across many sectors of technology including telecommunication, roads, air, and rail has a greater spillover effect on tax compliance. This because when internet accessibility is well developed the tax authority would share the spillover benefits of using technological platforms by the taxpayers. Even though that technological might not necessarily originate from the country under which tax is realized, then benefits would still be felt (Yoshino, Hossain & Henry, 2020).

CHAPTER FIVE

SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter comprised of summary of the findings, conclusions, recommendations and area of further study. The inferences and recommendations drawn were focused on addressing the purpose of the study which was to establish the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi County.

5.1 Summary of Findings

The overall objective of this study was to establish the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi County. In regard to this, the study sought to investigate the influence of *iTax* system on tax compliance among small and medium taxpayers in Nairobi County, to evaluate the influence of online tax filing knowledge on tax compliance among small and medium taxpayers in Nairobi County and lastly to establish the influence of internet accessibility on tax compliance among small and medium taxpayers in Nairobi County.

5.1.1 Effect of iTax Systems on Tax Compliance

This first objective was to investigate the influence of *iTax* system on tax compliance among small and medium taxpayers in Nairobi County. Correlation analysis showed that *iTax* system on tax compliance among small and medium taxpayers in Nairobi County was positively and significantly associated. Equally, the regression analysis showed there was a positive significant linear relationship between *iTax* system on tax

compliance among small and medium taxpayers in Nairobi County with evidence of p=0.000, ρ<0.05.

5.1.2 Effect of Online Tax Filing Knowledge on Tax Compliance

The second objective was to evaluate the influence of online tax filing knowledge on tax compliance among small and medium taxpayers in Nairobi County. Correlation analysis showed that online tax filing knowledge on tax compliance among small and medium taxpayers in Nairobi County was positively and significantly associated. Equally, the regression analysis showed there was a positive significant linear relationship between online tax filing knowledge on tax compliance among small and medium taxpayers in Nairobi County with evidence of p=0.000, ρ<0.05.

5.1.3 Effect of Internet Accessibility on Tax Compliance

The third objective was to establish the influence of internet accessibility on tax compliance among small and medium taxpayers in Nairobi County. Correlation analysis showed that internet accessibility on tax compliance among small and medium taxpayers in Nairobi County was positively and significantly associated. Still, the regression analysis showed there was a positive significant linear relationship between internet accessibility on tax compliance among small and medium taxpayers in Nairobi County with evidence of p=0.049, ρ≤0.05

5.2 Conclusions

Based on the findings of the study, the first null hypothesis was rejected and therefore, it was concluded that *iTax* system has a positive and significant effect on tax compliance among small and medium taxpayers in Nairobi County. From the findings of the study, it was also concluded that *iTax* system plays a significant role in tax compliance among small and medium taxpayers in Nairobi County. Tax compliance is dependent on *iTax*

system which comprised of ownership of KRA PIN, being registered through *iTax* system and being able to generate invoices through *iTax* system by small and medium taxpayers in Nairobi County.

The study also rejected the second null hypothesis and concluded that online tax filing knowledge had a positive and significant effect on tax compliance among small and medium taxpayers in Nairobi County. Both correlation and regression analyses showed that online tax filing knowledge had a significant influence on tax compliance among small and medium taxpayers in Nairobi County. Thus, the study concluded that online tax filing knowledge has influence on tax compliance among small and medium taxpayers in Nairobi County. Tax compliance depends on online tax filing knowledge since those taxpayers who do not have knowledge on filing are not likely to complete the filing process hence non-compliant.

The study lastly rejected the third null hypothesis and concluded that internet accessibility had a positive and significant effect on tax compliance among small and medium taxpayers in Nairobi County. Internet accessibility was found to have strong positive correlation and positive significance on tax compliance among small and medium taxpayers in Nairobi County. Thus, the study concluded that tax compliance is dependent on internet accessibility especially in the era in which technology has revolutionized the way in which government businesses are managed. The study also concluded that without the access to the internet, tax compliance would be challenging since current tools and systems that facilitates the interaction between the taxpayer and the tax authority is online based.

5.3 Recommendations

The findings of the study showed that *iTax* system had a positive and significant influence on tax compliance among small and medium taxpayers in Nairobi County. Drawing from various empirical literature reviewed and anchoring on the theory of technology acceptance model which all have shown that tax systems impact on tax compliance. The study therefore recommends that the revenue authority should put more resources, efforts and emphasis in ensuring that iTax system's seamless integration with all taxpayers. That the system should promote and facilitate the enhancement of taxpayers behaviour for improved compliance.

The findings of the study revealed that online tax filing knowledge had positive and significant influence on tax compliance among small and medium taxpayers in Nairobi County. Drawing from the theory of fiscal exchange, when taxpayers associate the taxes paid to both social and economic benefits from the government, many taxpayers tend to gain the requisite knowledge that would enhance taxpayers compliance. Several empirical studies reviewed also pointed to the significance of online tax filing knowledge on tax compliance. The study thus recommends to the revenue authority that even though, tax system has been made facilitate self-service, occasionally taxpayers should be taken through online filing procedure to consider newly recruited taxpayers and also ensure that existing taxpayers are update with changing technological and systemic environments.

The findings of the study suggested that internet accessibility had positive and significant influence on tax compliance among small and medium taxpayers in Nairobi County. Several reviewed empirical studies showed that internet access played critical role in enhance the interaction between taxpayers and the tax authorities. When taxpayers perceive that the interaction with the tax authority is easily accessible aided

by technology, they form behaviour to consistently interact and seek guidance apart from filing and paying for taxes using online platforms. This formed behaviour improves compliance among taxpayers. the study thus recommends that the government should put more efforts in ensuring that both software and hardware required to access the internet is available country. This would lead to increased interaction between the revenue authority and the taxpayers, for improved compliance.

Tax compliance is critical to revenue collection as had been shown by various secondary literature reviewed, the theories that anchored the study and the findings of the study. Since tax compliance is dependent *iTax* system, online tax filing knowledge and internet accessibility, as revealed by the findings of the study. The study generally recommends to the government to improve on the areas of internet accessibility to all taxpayers and improve on the interaction between iTax system and the taxpayers. These improvements would lead to better revenue collection, better social and economic growth and development of the nation.

5.4 Suggestions for Further Research

The findings of the study revealed that *iTax* systems, online tax filing knowledge and internet accessibility had a positive relationship with tax compliance up to 89.8% or (R= 0.898). Further, the results revealed that *iTax* systems, online tax filing knowledge and internet accessibility caused a variation of 81% on tax compliance. The implication of the remaining 9% of the change was caused by other factors not included in the model. These factors could vary from taxpayers perception, social and religious issues of taxation, demographic, and economic factors in taxation. The study therefore suggests that further research should be conducted by scholars on these factors that might intervene, moderate, or control technology adoption on tax compliance among small and medium taxpayers and not necessarily limited to Nairobi County, Kenya.

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APPENDICES

Appendix I: Letter of Introduction

Dear Respondent,

I am a student at Kenya School of Revenue Administration **conducting a study on the influence of information communication technology adoption on tax compliance among small and medium taxpayers in Nairobi County.** This study will enlighten the business community, policy makers and the general public about the above area of the study. In order to accomplish process, I kindly request you to complete this questionnaire.

The information obtained will be used purely for academic purposes and therefore, will be treated with utmost confidentiality and of good faith. Thank you in advance for participating and making this study successful.

Yours Sincerely,

……..

John Makori Nyakundi

KESRA105/0133 /2019

Appendix II: Respondents Questionnaire

Instructions for Use

This questionnaire is divided into sections A, B, C and D. You are requested to be as honest as possible when answering the questions. You are required to put a tick, circle, or mark your answers in the spaces provided and as per the instruction given, where applicable.

Respondent's Number: _____

SECTION A: BASIC INFORMATION

1. What is your gender?

Female ☐ Male ☐ Choose not to say ☐

2. How old are you?

18 – 28 years ☐ 29 – 39 years ☐ ☐

40 – 50 years ☐ above 50 years ☐

3. What is the highest level of education attained?

Primary level ☐ Secondary level ☐ Diploma level ☐

Degree level ☐ Others (*Specify*) ……

4. For how long have you been in this business?

Less than 5 years ☐ 6 and 15 years ☐ 16 and 25 years ☐

More than 25 years ☐

5. What your role in this business?

Business Owner	☐	Business Accountant	☐
Local Representative	☐	Sales Executive	☐

6. How much was your annual turnover for the last three years in Kenya shillings?

Less than 5,000,000	☐	5,000,000 - 10,000,000	☐
10,000,000 - 15,000,000	☐	15,000,000 - 30,000,000	☐
30,000,000 - 90,000,000	☐	90,000,000 and more	☐

PART B: *iTAX* SYSTEM

This section seeks to understand the influence of iTax system on tax compliance among small and medium taxpayers. To what extent do you agree or disagree with the following statements. Kindly put a tick where applicable.

Use a scale of 1-5 where; 1= Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree.

		1	2	3	4	5
1.	My business is aware of the existence of iTax system used by the revenue authority to interact and communicate with taxpayers.					
2.	My business is registered with Kenya Revenue Authority and thus it possesses Personal Identification Number (PIN).					
3.	My business is registered on iTax where the business uses the system to declare, file, compute and pay the amount of tax due.					
4.	I do not have any challenges using iTax system as it offers my business all the solutions, I need to comply with tax requirements for my business.					
5.	My business prefers using iTax as it saves me time and money that would have otherwise been spent on visiting and being attended to physically.					

PART C: ONLINE TAX FILING KNOWLEDGE

This section seeks to understand the influence of online tax filing knowledge on tax compliance among small and medium taxpayers. To what extent do you agree or disagree with the following statements. Put a cross a tick in the spaces provided. *Use a scale of 1-5 where;* ***1= Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree.***

		1	2	3	4	5
1.	My business always files tax returns online, raise tax invoices online and upload receipts online.					
2.	I know how to initiate online tax filing processes from the first step through to all steps required to complete any initiated process.					
3.	I only came to know how to file taxes online since the times I was shown a demonstration how it is done by the revenue authority personnel.					
4.	My business sometimes misses filing tax online due to forgetfulness and being busy with other important business matters.					
5.	By business finds it cost effective to files, compute and pay for taxes due online without having to go to revenue offices in persons.					

PART D: INTERNET ACCESSIBILITY

This seeks to understand the influence of internet accessibility on tax compliance among small and medium taxpayers. To what extent do you agree or disagree with the following statements. Put a tick in the spaces provided. *Use a scale of 1-5 where;* ***1= Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree.***

		1	2	3	4	5
1.	My business depends on the internet availability to file, compute and pay for my taxes due to the revenue authority as required by law.					
2.	My business incurs heavy costs to access the internet which then enables me to access the revenue authority's systems.					
3.	My business has failed at least once to comply to tax laws, rules and requirement as a result of internet failure and connectivity breakdown.					
4.	My business depends on a shared wired or wireless internet connection which then the businesses use to file its tax returns and pay what is due.					
5.	I think that internet accessibility is always unreliable and therefore should be a second option to tax filing, computation and payment.					

PART E: TAX COMPLIANCE

This section seeks to understand more about tax compliance among the small and medium taxpayers. To what extent do you agree or disagree with the following statements. Put a cross (X) in the spaces provided. *Use a scale of 1-5 where;* ***1= Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree.***

No.		1	2	3	4	5
1.	My business contributes to tax compliance by ensuring the rightful tax filing procedures are adhered to as provided for by the law.					
2.	I know that information communication technology adoption and use is important to improving tax compliance.					
3.	Given the opportunity in my business, I would avoid and evade payment if I know there will be no negative economic consequences.					
4.	Since my business falls under small and medium taxpayers, I am ever confused between so many tax bases on which to comply with.					
5.	My business has at least once or more have to engage an external expert to handle our tax matters which is costly though.					

THE END

Thank you for your participation!

Appendix III – University Letter

Kenya School of Revenue Administration

KENYA REVENUE AUTHORITY

ISO 9001:2015 CERTIFIED

REF: KESRA/NBI/036

15th September 2021

TO: WHOM IT MAY CONCERN

RE: REQUEST FOR RESEARCH PERMIT

JOHN MAKORI NYAKUNDI- REG. NO.: KESRA/105/0133/2019

This is to confirm that the above named is a student at Kenya School of Revenue Administration (KESRA) Nairobi Campus pursuing Masters in Tax and Customs Administration.

The named student is undertaking Research on TOPIC: **"INFLUENCE OF INFORMATION COMMUNICATION TECHNOLOGY ADOPTION ON TAX REVENUE PERFORMANCE AMONG SMALL AND MEDIUM TAXPAYERS IN NAIROBI, KENYA."**

The purpose of this letter is to request your good office to assist the above student with the information he requires to enable him work on his project.

Your support to KESRA in this regard will be highly appreciated.

Thank you.

Dr. Marion Nekesa, PHD,
Head Academic Research
KESRA

KENYA SCHOOL OF REVENUE ADMINISTRATION
DEAN OF STUDIES
15 SEP 2021
ACADEMIC AFFAIRS DIVISION

P. O. Box 48240 – 00100, Nairobi **Email:** kesratraining@kra.go.ke **Tel:** +254715877535/9

Tulipe Ushuru Tujitegemee!

Appendix IV: National Commission of Science and Technology Innovation (NACOSTI)

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **155105**

Date of Issue: **14/October/2021**

RESEARCH LICENSE

This is to Certify that Sr.. John Nyakundi makori of Kenya School of Revenue Administration, has been licensed to conduct research in Nairobi on the topic: INFLUENCE OF INFORMATION COMMUNICATION TECHNOLOGY ADOPTION ON TAX REVENUE PERFORMANCE AMONG SMALL AND MEDIUM TAXPAYERS IN NAIROBI, KENYA. for the period ending : 14/October/2022.

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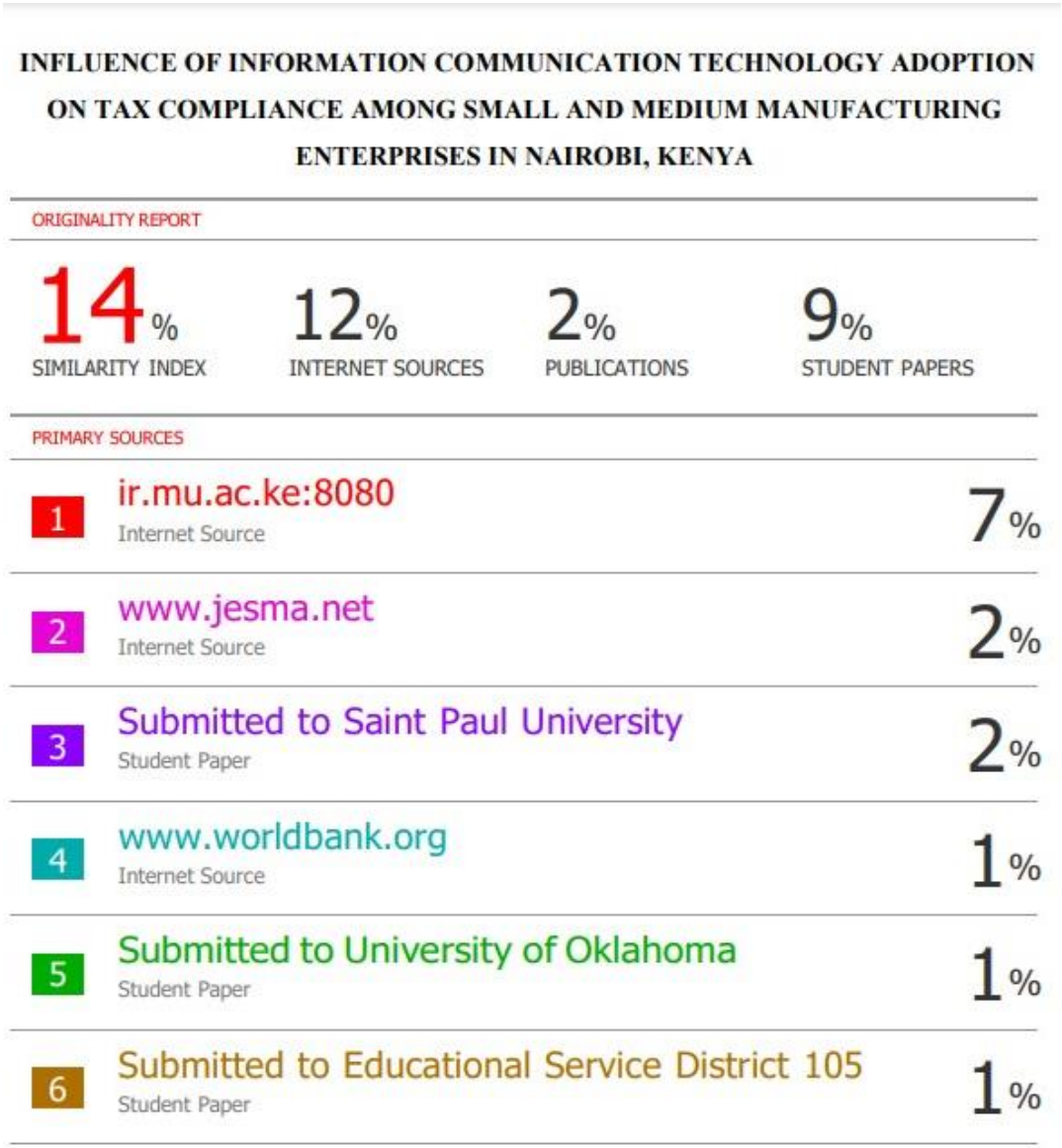

INFLUENCE OF INFORMATION COMMUNICATION TECHNOLOGY ADOPTION ON TAX COMPLIANCE AMONG SMALL AND MEDIUM MANUFACTURING ENTERPRISES IN NAIROBI, KENYA

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