

**EFFECT OF DIGITALIZATION ON VALUE ADDED TAX COMPLIANCE  
AMONG SMALL AND MEDIUM ENTREPRISES IN EMBAKASI CENTRAL  
SUBCOUNTY, NAIROBI COUNTY, KENYA**

**BY**

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## DECLARATION

### Declaration by the Candidate

This research project is my original work and has not been presented for a degree in any university. No part of this project may be reproduced without prior written permission of the author and/or Moi University.

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## **DEDICATION**

I would like to dedicate this research project to my dear family, my spouse Annabel Apollo and our kids who have all been wonderful supporters until my research was completed. I would wish to dedicate it to my brothers and sisters who were all very supportive throughout the process.

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## ABSTRACT

Technological advancement is a key driver that builds efficiency in organizational processes as it offers cost cutting opportunities. The spread of digital services through capabilities of the internet and Information and Communication Technology has created an opportunity to save on costs of transactions. The motivation of this research lied in the contrasting result and the need to document the Kenyan case in respect to digitalization of a tax system and its effect on tax compliance. Hence, the general objective was to investigate the effect of digitalization on value added tax compliance among Small and Medium Enterprises in Embakasi Central Sub-County, Kenya. The specific objectives were: To establish the effect of online filing procedure on Value Added Tax compliance in Kenya, to determine the effect of use of electronic tax registers on Value Added Tax compliance in Kenya, investigate the effect of digital payment systems on Value Added Tax compliance in Kenya and to determine the effect of Value Added Tax automated assessment system on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. The study was anchored on these theories: Innovation Diffusion Theory, Technology Acceptance Theory and the Economic Deterrence Theory. This study used explanatory research design. The population of this study was 190 VAT registered taxpayers at Embakasi Central Sub County and sample size of 129 VAT taxpayers. In this study, primary data was obtained through issuance of a questionnaire. To elucidate on interdependence of variables, descriptive and inferential statistics were undertaken. The study findings indicated that online filing, electronic tax registers, digital payment systems, VAT automated assessment systems significantly affects value added tax compliance with evidence of beta and  $\rho$  values of ( $\beta_1$ ) of 0.286,  $\rho < 0.001$  for online filing, while electronic tax register had a beta coefficient ( $\beta_2$ ) of 0.329,  $\rho < 0.000$ , digital payment systems had a beta coefficient ( $\beta_3$ ) of 0.311,  $\rho < 0.000$ . Lastly, VAT automated assessment had a beta coefficient ( $\beta_4$ ) of 0.296,  $\rho < 0.000$ . The study results concludes that online filing, electronic tax registers, digital payment systems, VAT automated assessment systems had influence on VAT compliance. In light of the statistical results and conclusions, it is recommended that digitalization components can be further enhanced to achieve higher levels of VAT compliance. KRA should revamp digitalization to improve capabilities such as widening digital payment systems to include online cheques remittance, real time ETRs and improve the VAT automated assessment systems. More studies may be done in this area to offer more insights on other factors such as Taxpayer behavioral tendencies on tax revenue performance.

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**ABBREVIATIONS AND ACRYNOMS**

<b>ANOVA</b>	-	Analysis of Variance
<b>CBK</b>	-	Central Bank of Kenya
<b>DTD</b>	-	Domestic Taxes Department
<b>ETRs</b>	-	Electronic tax Registers
<b>ICT</b>	-	Information and Communication Technology
<b>KRA</b>	-	Kenya Revenue Authority
<b>PAYE</b>	-	Pay As You Earn
<b>PIN</b>	-	Personal Identification Number
<b>SAS</b>	-	Self Assessment System
<b>SMEs</b>	-	Small and Medium Enterprises
<b>SPSS</b>	-	Statistical Package for Social Sciences
<b>TAM</b>	-	Technology Acceptance Model
<b>VAT</b>	-	Value Added Tax

## DEFINITION OF TERMS

**Digital Payment Systems-** this refers to provision of payment services through safe, reliable and efficient online mechanism (World Bank, 2021).

**Digitalization-** refers to use of use of technology capabilities in undertaking processes in contrast to manual processes (OECD, 2022).

**Electronic Tax Registers-** these are devices that are used to capture tax invoices by the taxpayers to facilitate enforcement by revenue officers (Kenya Revenue Authority, 2022).

**Innovation-** this is an invention that changes the way things are done and tends to better activities in respect to efficiency (OECD, 2022).

**Online filing procedure-** refers to process of filing tax returns online right from filing templates and uploading returns (Kenya Revenue Authority, 2022).

**Small and Medium Enterprises-** in the Kenyan context, a small and medium enterprises is an organisation that is respect to annual turnover, has not exceeded Kenya shillings five million and has fewer than fifty employees (Micro and Small Enterprise Authority, 2022).

**Value added Tax automated assessment-** is a process that relates input VAT data from Output from purchasers and seller to identify any mismatch or inconsistencies at both ends (Kenya Revenue Authority, 2022).

**Value added tax compliance-** is a term that refer to observance of tax laws set in regard to value added tax (KRA, 2021)

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Overview**

The theme of chapter one is to offer an introduction to the study. The study delved in effect of digitalisation on valued added tax compliance in Embakasi Central Sub-County, Kenya with the focus being on small and medium enterprises. The chapter has different themes which basically introduces the concepts and variables. Firstly, it contains the background of the study, statement of the problem and objectives. Secondly, the section has research hypothesis, scope and limitations. Lastly, the section elucidates on significance of the study as it identifies users of the findings of the study.

#### **1.1 Background of the Study**

Tax is an instrumental source of government revenue. Thus, tax compliance is vital towards stability of public revenue that is needed to offer a wide array of services to the general public. High levels of tax compliance results to more revenue for governments (Neve, Imbert, Spinnewijin, Tsankova, & Luts, 2021; Alsuikait, Sara, Wilde, Gitanjali, & Sara, 2020). Low levels of tax compliance lead to reduction in government revenue thus impairing government's ability to offer vital services such as healthcare, security, education and propagate economic growth. Moreover, tax compliance generates funds for governments to improve infrastructure that steers socio-economic growth (Night & Bananuka, 2020). Dependence on tax revenue for public expenditure is common across all countries regardless of whether developed or developing. In absence of revenue from tax, most developing countries experience stunted growth because the natural resources that serve as alternative are either under

utilised or are exported in raw forms fetching low incomes (Nkundabanyanga, et.al., 2017; Musimenta & Nakukenge, 2017).

On the other hand, tax non-compliance is a major concern for governments because it hampers its ability to collect public revenue (Adeyeye, 2019). Tax evasion creates unstable economies due to erosion of resources through loss from tax evasion. Most countries around the globe adopt self-assessment systems that typically transfers tax administration to the taxpayers. In so doing, substantial administration costs are transferred to taxpayers from revenue authorities but not without risks of tax evasion (Nguyen, Le, & Dung, 2020). Rampant tax evasion creates societies that are characterised by socio-economic injustices because low income earners and the poor suffer the burden of tax while the wealthy evade taxes. Tax compliance has socio-economic implications that determine economic progress of countries (Janina, Olsen, Kogler, & Marcel, 2019).

Technological advancement is a key driver that builds efficiency in organizational processes as it offers cost cutting opportunities. Specifically, use of technology reduces the bottlenecks in tax administration to both taxpayers and tax officials. With digitalization of tax processes comes benefits as tax procedures are faster, better and more accurate in contrast to manual tax processes. Digital tax services are characterized by ubiquity, are affordable, speedy and significantly affordable to taxpayers in Bangladesh (Azad, Sharmin, & Mazid, 2017). The spread of digital services through capabilities of the internet and Information and Communication Technology (ICT) has facilitated savings on costs of transactions. Primarily, digitalisation in tax administration entails development of systems that aid tax filing and payment processing. At the same time, digitalisation works well for both tax

administrators and taxpayers as it creates a seamless tax management system. Moreover, compliance checks are efficiently done in a digitalized tax system.

In the Caribbean peninsula, digitalisation in tax administration has seen nations improving revenue collection significantly (Barreix & Zambrano, 2018). Digitalization has saved time and costs of tax processes leading to an increase in tax compliance in Saudi Arabia, in double fold (Akram, Malik, & Shareef, 2018). Digitalization of tax administration in Croatia too has been based on integrating digital technology with users through electronic information sharing, social media and e-commerce which has been found to increase tax law observance (Sabina, 2020). Digitalization of tax systems is an increasingly significant construct of tax service in India because use of technology tends to lower the costs of storage, sharing and analyzing of information (Sury, 2019).

According to Akram et.al., (2018) digitalization improves systems of returns by taxpayers from different locations without having to visit a tax office. At the same time, enforcement of taxes through electronic systems is fast and seamless. Time used in systems tax returns and correspondences is significantly reduced where electronic systems are adopted. This thus improves the efficiency of tax compliance by taxpayers and tax administration duties by tax officers. Moreover, use of electronic documents without having to print paper work cuts on costs for filing and remittance of taxes. Online procedures entail transmitting of tax information in electronic forms. This in essence improves tax record systems, payments and review of tax records by the taxpayers (Azad, Sharmin, & Mazid, 2017).

There are benefits associated with digitalizing tax systems for both taxpayers and tax administration officers. Foremost, digitalization enables self-service in tax matters.



For example, a taxpayer can apply for taxpayer position and or amend status, file return and pay taxes. These processes take less time in contrast to physical processes (Barnnet, 2015). Moreover, verification of documents by tax authorities in a digitalized tax system is swift and fast. The effectiveness and efficiency in digitalized tax process is high. At the same time, digitalization has improved accuracy of tax filing and remittance.

According to Obert *et.al.*, (2018) use of digital tools in tax administration is a critical business process re-engineering whose goal is to boost revenue collection through costs and time savings. Worldwide, revenue authorities have adopted digital tools in tax administration for several reasons. To start with, digital tools foster and streamline tax filing, monitor correspondences and encourage voluntary tax compliance (Li, Wang, & Wu, 2020). Digitalization takes different perspective. For instance, most common aspects of digitalization entail use of electronic devices to record tax transactions, embrace technology in e-filing and permit e-payments of taxes. Online filing is typically defined as making a tax return through the internet enabled platform (Akram, Malik, & Shareef, 2018). Online tax filing seeks to enhance efficiency in fulfilling tax obligations. Electronic tax devices are tools that harness power of technology and record tax transactions. For example, the electronic tax register is an electronic device that is used to process tax invoice when a sale is made. It is an essential component in accounting for tax as it summarizes and collates all transactions for tax purposes. Digitalization permits e-payment of taxes (Dwenger, Kleven, Rasul, & Rincke, 2018).

In Africa, tax services have been digitalized to enjoy benefits associated with use of ICT. For example, in Zambia use of technology in tax services has made tax administration swift leading to improved tax compliance (Soneka & Phiri, 2019).

Moreover Fjeldstad, Kagoma, Ephraim, Sjursen and Somville (2020) note that use of ICT in tax services has immense benefits to both taxpayers and tax officials. Similarly, electronic tax devices employed in tax processes has led to increase in revenue levels in Tanzania (Eilu, 2018). Among the most impactful tax reforms in Rwanda relate to adoption of electronic billing machine as the digital tools have occasioned to an increase in value added tax compliance (Twesige, Gasheja, Baryandama, & Uwamahoro, 2019).

Tax process digitalization in Zimbabwe has become a key objective in the country's endeavor to increase tax compliance especially Value Added Tax (Obert, Rodgers, Tendai, & Desderio, 2018). Tax is a significant component of public revenue for the government in Kenya. Tax revenues has a direct impact on the operations of the government in relations to meeting its obligations such as rendering of public utilities to the citizens and payment of debts borrowed by the government (Ofurum, 2018). Without sufficient amounts of tax revenue, governments are not able to provide goods and services which critically contributes to economic growth and development. Whilst, taxes are important, tax compliance is not optimum as the Kenyan government has run deficit national budget for most fiscal years (Zachary, Kariuki, & Mwangi, 2017).

Digitalization has been at center of Kenya Revenue Authority's efforts to improve tax compliance. KRA has developed mechanisms in order to increase tax compliance. Digitalization of tax processes in Kenya has been taunted as key turnaround move to increasing tax compliance (Muturi & Kiarie, 2015). Locally, aspects of tax digitalization has received few scholarly interest. In Kiambu County, digitalization of tax process was found to have increased tax compliance by enhancing efficiency (Oduor, Sevilla, Wanyoike, & Mutua, 2016). In a digital tax system, taxpayers were

able to file their returns and do payments by use of mobile banking services available and this led to high levels of compliance. The Kenya government gets most of its public finance from various tax bases to offer services to general public (Muguchu, Wawire, & Wambugu, 2020). Sales tax had been in operation in Kenya since 1973 and was replaced by VAT whose inception took place in January 1990. Tax on consumer expenditure has undergone a number of changes with respect to its name and how it is executed since Kenya attained its independence from Britain. For instance, VAT shortfall amounted to sh. 15.9 billion in Value Added Tax collection from imports (KRA, 2021). This study delved on the effect of Digitalization on Value Added Tax Compliance in Kenya.

The VAT Act 2013 was introduced in Kenya on 14 August 2013 (KRA). Since its introduction, The VAT Act 2013 has undergone several changes to the contents of the repealed VAT legislation by doing away with some provisions and presenting several new ones (Nyaga & Omwega, 2016). Of interest is the deletion of VAT remission, elimination of reduced VAT rate of 12%, integration of former subsidiary legislation into the principal legislation, decrease in schedules from eight to two and introducing tax charge that was formerly zero rated and exempt supplies (Ernst & Young, 2014). VAT is a key tax incentive for the business sustainability as it determines the affordability of commodities and the profits made by entrepreneurs (Umeora, 2013).

Around the world, small and medium enterprises are defined differently. However, most countries' laws define and identify SMEs based on annual turnover and staff capacity. In the Eurozone, SME are entities that meets three thresholds, that is, have firm value measured by balance sheet totals of at most 43 million euros, staff capacity does not surpass 250 and total sales per one year is at most 50 million euros (E.U Law

2003/361). Following this definition, SMEs are therefore most prevalent in the Eurozone. Reports reveals that most business concerns in the region falls under the definition of SMEs and are more than 20 million in number directly employed more than 70 million employment opportunities (E.U Law 2003/361).

The digital transformations in Asia, particularly in Indonesia and Malaysia has made the growth of small and medium enterprises impeccable where small entities have sprouted and grown to large business empires. In essence, SMEs are so common among businesses given that they do not require substantial start-up capital, technological input and management skills. Most small and medium enterprises start as micro entities that grow to larger sizes and eventually significantly contributes to countries' economic development (Utami & Hersen, 2019).

In spite of these roles, SMEs often find challenges in growth due to inefficient operations management, stiff competition among themselves due to dealing with similar products and competition from already established companies. Nevertheless, some SMEs grow to large entities that create many employment opportunities, enables wealth creation and lead to economic growth (Gwaro, Maina, & Kwasira, 2016). Among the subtle factors that has improved this growth is adoption of digital transformation. It is argued that where technology has been embedded to operations of SMEs, skills and mindsets of SMEs owners are enhanced and this builds a framework and blueprint for growth and progress monitoring.

According to Fany (2018) to small and medium enterprises around the world focus on cost-winner approach in deciding whether to pay taxes or not. For instance, by constant dissemination of behavioral messages to small taxpayers, tax responsiveness has been enhanced in middle level income countries. Additionally, it has been

established that digital tools and the overall aspect of digitalisation of tax administration has made information and report sharing much more economical than before and this has fostered the zeal and tax morale for most small-scale taxpayers. Again, digital tools are key towards ensuring timely compliance, accurate assessment and streamlines operations for most small taxpayers. Whilst this is true, there are other considerations that do influence tax obedience among small scale taxpayers. These include, perceptions, issue of public trust and understanding of the whole tax systems (Utami & Hersen, 2019).

A critical look at these aspects can infer that digitalisation is an inter-link between the factors and tax compliance. Digitalisation creates a technological framework where tax information is shared by the tax administrators and taxpayers at either ends. This is because, digitalisation entails use of computers and computers networks to disseminate information. Through this, information is shared fast, in understandable formats to the end users hence improving collaborations.

In Africa, Small and medium enterprises are instrumental in many ways. To start with, small and medium enterprises offer opportunities for individuals with low resource endowment to engage in activities by undertaking small ventures (Mutambara & Matsongoni, 2018). Thus, SMEs are crucial in wealth creation among low income earners in absence of which the living standards and general welfare of people would be put in jeopardy. It has been alluded that SMEs forms the backbone of economies of most countries in Sub-Saharan Africa. Secondly, SMEs aid in exploitation of resources that large firms may not find economically viable to do so. Small enterprises in Africa are involved in primary activities such as raw material harnessing, retail and also participate in manufacturing activities (Yergenthren & Rajendra, 2018; Wadesango, Bizah, & Nyamwanza, 2020). In this context, SMEs are

seen as vital drivers of economic growth. Moreover, small and medium enterprises are important in providing market for larger firms through the supply chain. Big firms are often unable to meet demand for small scale consumers. On the other end, small and medium enterprises play an important role of breaking bulk and offering products to consumers in quantities and weights they can afford.

In spite of these key roles that SMEs play, their survival is compromised by a number of challenges ranging from stiff competition, through inability to secure financing to unconducive regulatory environments such as punitive tax laws. Notably, SMEs undertake small scale operations which impairs their inability to enjoy benefits relating to economies of scale. This considered means that any costs, unrelated to direct costs and overheads, such as tax compliance costs affects their growth and financial standings. Again, SMEs are prone to evade tax due to their informal operations characterised by poor record keeping, inefficiencies in information synthesis and inadequate skills to address tax matters (Carsamer & Abbam, 2020; Yergenthren & Rajendra, 2018).

Locally, small and medium enterprises are vital economic units owing to their contribution in job creation, development of investment culture and accounts for a large percentage of economic growth. Moreover, SMEs are key drivers of wealth creation in a country that ultimate improvements in quality of life, innovations and boosting of economic welfare of the people and nations (Machira & Irura, 2012). These entities are an essential component in nation building among emerging and developed countries as they are subtle agents and drivers of innovations, entrepreneurship and uplifts people's lives (Nahida, Copp, Brett, & Sarker, 2014). Kenya too derives substantial benefits from existence of small and medium enterprises. The benefits are at least in four folds: SMEs are important in creating

wealth, creates job opportunities that curbs unemployment that is a menace in the country, adds to Gross Domestic Product and fundamentally transforms the society (Kenya National Bureau of Statistics MSME report, 2016). Additionally, SMEs in Kenya are the most common trading concerns and offer a market for raw materials, creates goods and services that would otherwise be imported, contributes to the tax basket and lead to flourishing of the economy (Gwaro, Maina, & Kwasira, 2016).

Whilst literature points that digitalisation is instrumental in streamlining operations leading to cost savings and efficiencies, it is unclear whether it motivates small taxpayers to obey tax laws. Moreover, the Kenyan SMEs sector is dynamic and faces stiff competition from larger firms that enjoy economies of scale. Even in implementation of electronic tax systems, SMEs costs of doing business is still high (Gwaro, Maina, & Kwasira, 2016). This study delved in elucidating tax compliance for SMEs in Embakasi Central because the region can serve as a representative of the urban set up in Kenya. The results from this present inquiry are in essential fit for generalization when tax obedience is discussed from a countrywide perspective.

## **1.2 Statement of the Problem**

Value Added Tax compliance has been low in all categories of countries and this has not been linked to any specific factors but a wide array of factors (Azmi *et.al.*, 2016). Digitalization of tax processes is a key driver of efficiency in processes as it targets to ease and streamline compliance (Azad *et.al.*, 2017; Akram *et.al.*, 2018; Ajape *et.al.*, 2017; Obert *et.al.*, 2018; Qi *et.al.*, 2021). Digitalization programs like e-filing, e-payments and e-registration significantly boost tax compliance (Sitorus, 2018). In contrast, Hamfiri and Marcellia (2017) notes that e-filing saves on time and costs but does not lead to an increase in tax compliance. E-tax system has no effect on revenue compliance in Nigeria (Ofurum, 2018). However, Ajape, Afara and Uthman (2017)

view that e-tax system indeed fosters tax compliance. In Kenya, VAT target is seldom achieved. In the fiscal year 2020/2021, domestic VAT declined by 7.9% to Kshs.196.99billion from that achieved in the fiscal year 2019/2020. In the year 2019/2020, the actual Domestic VAT revenue was Kshs.214.224 billion against a target of Kshs. 224.58 billion leading to a shortfall of Kshs. 10.35 billion. Also, in the fiscal year 2018/2019, Domestic VAT revenue target was Kshs. 241.124 billion and the actual result was Kshs.230.348 billion leading to a shortfall of Kshs. 10.776 billion (Kenya Revenue Authority, 2020). Similarly, in the fiscal year 2017/2018, VAT target was missed by 6.7% in which Domestic VAT was Kshs. 206.25 billion while VAT on imports amounted to Kshs. 144.8 billion against the target of Kshs. 376 billion (KRA, 2019). What this suggests is that there is an underlying challenge that is perennially facing VAT compliance targets efforts by KRA.

There was scarcity of studies done with central focus being the impact of digitalization on tax compliance for SMES and specifically on VAT compliance at Embakasi Central Sub County. This presented a contextual gap, as it was imperative to undertake this research in order to bridge the gap. The few studies done in Kenya were empirically inconclusive.

Gwaro, Maina, and Kwasira (2016) focused on online tax filing and compliance of SMEs in Nakuru. They found out that computer literacy influences tax compliance. However, the study did not consider Kenya as a whole and further centered on compliance which may not necessarily result into more tax revenues. Eilu (2018) undertook a review of whether use of digital tools such as ETR in tax administration enhances compliance with tax laws and noted that unless taxpayers are trained on their use and the cost implication in usage of such platforms be less, electronic devices may not lead to improvement in revenue collection. The motivation of this



research lied in the contrasting results and the need to document the Kenyan case in respect to digitalization of a tax system and its effect on tax compliance. Hence, this study interrogated digitalization and its effect on value added tax compliance among Small and Medium Enterprises in Embakasi Central Sub-County, Kenya.

### **1.3 Objectives of the study**

#### **1.3.1 General Objective**

The general objective was to investigate effect of digitalization on value added tax compliance among small and medium enterprises in Embakasi Central Sub-County, Kenya.

#### **1.3.2 Specific Objectives**

The specific objectives of this study were to:

- i. To establish the effect of online filing procedure on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County.
- ii. To determine the effect of use of electronic tax registers on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County.
- iii. To determine the effect of digital payment systems on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County.
- iv. To determine the effect of Value Added Tax automated assessment system on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County.

#### **1.4 Research Hypotheses**

The research hypotheses of this study were:

***H<sub>o1</sub>***: Online filing procedure does not have a significant effect on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County.

***H<sub>o2</sub>***: Use of electronic tax registers does not significantly affect Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County.

***H<sub>o3</sub>***: There is no significant effect of digital payment systems on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County.

***H<sub>o4</sub>***: There is no significant effect of Value Added Tax automated assessment system on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County.

#### **1.5 Scope of the Study**

This study was to investigate the effect of digitalization on Value Added Tax compliance in Kenya. The predictor variables were online filing procedure, use of electronic tax registers, digital payment systems and Value Added Tax automated assessment system. The dependent variable was value added tax compliance. In this study primary data was used by administering structured questionnaires. The geographical scope of this study was limited to VAT registered taxpayers in Embakasi Central Sub-County. The time scope in reference to VAT compliance for this study was three years 2018/2019, 2019/2020 and 2020/2021.

#### **1.6 Significance of the Study**

VAT is an important government revenue. However, VAT is one of the taxes that taxpayers evade as it is an indirect tax that is levied through the self-assessment

mechanisms. Digitalization seeks to cover these loopholes and boost compliance. Undertaking this study is significant to: This study is useful to the government of Kenya through the National Treasury as it can be used in policy formulation. The Government has put in place VAT reforms with the aim of boosting VAT compliance. Some of the key reforms is the digitalization of tax service processes is through introduction of ETRs and i-tax system in return and payment systems. The results of this study will provide empirical evidence to aid in policy making.

In spite of VAT reforms done by KRA, VAT compliance has been low since the targets have been missed perennially. Therefore, this necessitated a study to find out whether digitalization impacted on VAT compliance. Moreover, this study's results can be used in making day today operational decisions which can improve VAT compliance in Kenya. There was a need to undertake a study to determine how digitalization has affected various taxes' compliance in Kenya. The study offers a ground for other scholars and researchers to advance literature on tax in Kenya. More so, this study can be done in different tax service offices in order to provide more insights on effect of digitalization on tax compliance.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

Literature review encompasses discussion of concepts of the study. It is thematically arranged to capture key variables and variables that are assessed. The subheading in this section are review of concepts, theoretical review, empirical review, research gaps and conceptual framework.

#### **2.1 Review of Concepts**

This section presents a discussion of concepts and variables that were pertinent in this study. It contained the following thematic concerns: digitalization process, Value Added Tax and digitalization and Valued Added Tax compliance.

##### **2.1.1 Value Added Tax Compliance**

Originally, Value Added Tax was referred to as sales tax and this has since changed to its current form of VAT through introduction of VAT Acts. The Kenyan VAT Act was assented to with robust revisions and amendments in August 2013 (KRA). The VAT Act documents provisions of law that define, characterizes and operationalizes VAT in the County. In brief, the VAT Act stipulates that VAT is a tax component, a percentage of value that ought to be charged for all qualifying goods and services, both locally supplied and imported (Section 5 of the VAT Act). Moreover, the Act defines non-vatable goods and services (First and Second Schedule of the VAT Act).

VAT is synonymously known as sales tax given that it is charged on vatable goods and services at any points along the supply chain (Chen & Taib, 2017). VAT is levied as a percentage of value of goods or services being offered at the point of exchange (Hurst, Geng, & Benjamin, 2014). Value added tax can be transferred from one point

to another since the point of incidence and impact may be borne by different parties. Value added tax tends to increase the value of goods and services (Sabina, 2020).

In Kenya, businesses and individuals are supposed to register for VAT when turnover during the year is Ksh 5 million and above (Value Added Tax Act Cap.476, Sec.34, 2021). On registering for VAT, taxpayers are expected to charge VAT and remit it to KRA on all transactions at the earlier of payment, invoicing or rendering a service and file VAT return and pay tax due by the 20<sup>th</sup> of the following month (Kenya Revenue Authority, 2020). The VAT tax rates in Kenya are classified into 4 categories namely: the standard rate of 16%, special rate of petroleum products at 8%, exempt and zero-rated rate (Value Added Tax Act Cap.476, Sec.5, 2021).

Value added tax paid is the net off between sales VAT and purchases VAT of the business for the previous month. VAT charged on purchases is referred to as input VAT while VAT charged on sales is referred to as output VAT (Kenya Revenue Authority, 2020). If within any given month a taxpayer's purchases are more than the sales, they are required to file a credit VAT return which shall be claimable within the next subsequent months. If within a given month there is no transaction undertaken, a VAT registered entity is required to file a nil return.

In spite of Value Added Tax being one of the main types of indirect taxes in Kenya, VAT tax has not been properly collected from registered entities for a very long period due to evasion by business entities and individuals (Zachary, Kariuki, & Mwangi, 2017). Compliance with VAT laws therefore is likely to increase tax revenue for the government. VAT compliance can be measured in different aspects such as timely filing of VAT returns, timely payments of VAT due and correct

computation. In this study, VAT compliance was measured in terms of returns filed and timely remittance.

### **2.1.2 Digitalization Process**

Digitalization seeks to use capabilities from ICT in undertaking processes in contrast to manual processes (Ajape, Afara, & Uthman, 2017). Digitalization refers to the conversion of data from analog states to digital states that is specifically readable by machines. Digitalization is use of computers to manage processes and information and improves on time and resources usage. Electronic management of information is vital as it ensures that information trail is available. In the case of tax systems, digitalization entails the use of ICT in tax administration. Tax systems are digitized in order to improve on efficiency (Akpabi & Igbekoyi, 2019). Tax administration is a tedious process and entails use and systems of great deal of information which if done manually takes lot of time and resources hence reducing the performance of revenue departments.

Digitalization takes different basis in which the taxpayers can process returns online and the revenue departments can undertake tax administration activities online (Maphumula & Njenga, 2019). In Kenya, there has been a paradigm shift in tax administration through the use of itax system. I-tax system has revitalized the KRA as it enables close monitoring of activities for various businesses, allows online systems of returns and payment systems which is envisioned to promote tax compliance.

Digital tax platforms are crucial to making tax systems lean in that they permit real time access from across the globe and enables risks mitigations (Mcluskey & Huang, 2019). For instance, the use of ETRs in VAT administration in Kenya has gone a long way towards enhancing accuracy and completeness in disclosure on value added tax

computations. Use of digital platforms has been noted to improve compliance rates among businesses due to costs reductions that characterizes the platforms. Electronic tax management reduces corporate tax evasions without increasing overheads of the tax departments. Information Technology transforms activities and improves capacities of public organizations to offer service delivery.

### **2.1.3 Digitalization and Value Added Tax Compliance**

Digitalization of a tax administration system has been described as the process of adopting technology with the purpose of easing the process of compliance (Akram, Malik, & Shareef, 2018). The underlying benefit of digitalization lies in harnessing capabilities of ICT in providing seamless tax service processes. Tax compliance is a multi-step that entail booking of tax transactions and systems of returns. Advanced information systems improve tax reporting thus boosting tax compliance (Li, Wang, & Wu, 2020). Every business entity is geared towards reduction of cost of doing business and increasing its returns, and this has been proved time and again by use of technology (Akpabi & Igbekoyi, 2019). By use of advanced technology, business entities are able to reduce costs of generating revenue and fulfilling other legal requirements such as tax compliance. Essentially, a tax system digitalization basically represents the whole process of adopting technology and its consequences in order to bring tax compliance to reality within a population.

Digitalization is a dream of most of developing nations due to its efficiency and its ability to increase tax compliance within a given locality as it has the tendency of improving tax compliance due to improving efficiency of the entire process (Ajape, Afara, & Uthman, 2017). The Kenya Revenue Authority has been on the on the forefront of establishing strategies that reduce cost of tax compliance for entities and individuals and this has led to the adopting various mechanisms of technology in

order to reduce the compliance costs. For example, Value Added Tax processes has been digitized by use of electronic tax registers in recording transactions and i-tax for filing returns and systems payments.

On itax webpage taxpayers can login into their password protected KRA PIN accounts, file VAT returns and process payments at the comfort of their offices or homes without necessarily going to KRA offices (Kenya Revenue Authority, 2020). The VAT template has already been prepared in form of Excel spreadsheet which is easier to fill and this has greatly reduced the work load for systems VAT returns. Once the taxpayer fills in the sales and purchases, the Excel spreadsheet automatically calculates VAT tax payable and this has saved a lot of time and resources for taxpayers. Itax system runs on internet and this has ensured that taxpayers are able to file their returns online. Once filing is done, various payment methods such as mobile payments, bank transfer or payment through a cheque are at the disposal of the taxpayer (Kenya Revenue Authority, 2020).

## **2.2 Theoretical Review**

Theories are postulates that explain why things are as they are. In line with the variables, this study was anchored on these three theories: Innovation Diffusion Theory, Technology Acceptance Theory and the Economic Deterrence Theory.

### **2.2.1 Innovation Diffusion Theory**

Innovation diffusion theory is traceable to one Rodgers (1962) who delved in elucidating agricultural innovations in a rural setting at the state of Iowa in United States. In his doctoral dissertation, the theorist observed and trusted that application of innovations by different economic units, mostly people, followed a universal laid out process. This process was termed as social change as it often led to significant



changes in ways of doing things and this happened in different phases until all members of the society could adopt innovations and the cycle could start all over again as innovations were perpetual.

The main precepts of diffusion of innovation is that innovations, defined as new ideas pass across from inventors to their users at different rates (Rogers, 1962). Thus, innovations are picked up at different times by people in respect to their ability to take up risks in trying new things. Moreover, the theory underpins the reasons that explain the different adoption rates for new ideas. It posits that movement of new ideas within societal channels is dependent on perceived fitness in the ideas to specific people (Les Robinson, 2019). The theory has since been fine tuned to capture subtle propositions in movement of new ideas in the business realm. For instance, it has since emerged that people do not just pick new goods and services, but do so, if the new goods and services are perceived to have better utility (Rogers, 2003).

Diffusion of innovation theory is pertinent theory in understanding adoption of technology in business world. In most countries, technology is ever changing and this has led to complexities in adoption of ICT tools in business. The theory explains that there exist differences in response to innovations among the people. This is dependent on the channels used in bringing out the new technologies and risk-taking behavior of individuals in a social process. This theory further asserts that there are factors that boost diffusion or impair diffusion of innovations in a given society.

These factors are attributed to the new invention perception by the people or intended users, social and peer influence and information availability for the new idea (Maphumula & Njenga, 2019). This theory thus advocates for the existence of the four components for the innovation to be transferred to other users (Ismail, 2006).

Moreover, the theory indicates that the process of adoption of new technology heavily relies on human capital. According to Rogers (2003), new technologies are often efficient when compared to old versions. It is for this reason that organizations are often involved in developing new technologies in order to improve efficiency. For instance, adoption of electronic tax filing system reduces operational costs thus improving performance of tax departments.

According to Cox (2018) diffusion of innovation theory attempts to explain how ideas, products and technologies spread across social systems. Diffusion of innovation theory has pros and cons. To the start with, the theory provides substantive background information that has potential of being applied in practice. Diffusion of innovation theory indicates that flow of ideas across social channel succeeds or fails due to prevailing environmental conditions (Dearing & Singhal, 2020). The theory has so far identified key categories of adopters in respect to time they respond to new ideas. The categories are early adopters, early majority, late majority and ends with laggards which represent first adopters and late adopters respectively. This is in essence, the process that has been found to be in use in technological systems such as e-tax filing modules. Again, the recognition of social systems are media for adoption has practical implications and this has given this theory some life. The theory points that in a societal system, there are opinion leaders who play a role in deciphering information on new ideas and adoption of the same in a society set up.

The main criticism of diffusion of theory lies in its inability to coherently align itself to other theories which has made it rigid and stagnant. In this context, it is not possible to establish a practical framework for solving human problems that evolve over time. Secondly, the theory does not fundamentally quantify innovations or adoptions, nor diffusion and this makes the overall proposition complex to solve and

ascertain its role in human networks particularly because, human beings are complex. This too indicates that the subtle cause of diffusion has not been factored in its modelling, further complicating its adoption. Lastly, diffusion of innovations seldom captures role of variables in influencing diffusion in social systems but rather seems to build its case on criteria of adoption without focusing on heuristic approaches (Arvind & Peer, 2019).

Innovation Diffusion Theory is related to this study in two folds. The theory insights on how innovations spread from one sector to another. For instance, the digital capacities being harnessed in tax administration emerged from the ICT sector and have since spread to other sectors in the economy. Additionally, Innovation Diffusion Theory creates a sound framework for understanding how new innovations brings change. In this study, emergence of technological innovations has changed how tax computation is done, filing and payment of taxes. This theory was linked to this research because this study related digitalization on VAT compliance in Embakasi Central Sub County. Innovation diffusion theory presents arguments on what factors influences spread of new ideas in the society. Adoption of digital tax platforms by the KRA may have faced resistance by taxpayers due to associated perceived difficulty in their use. Not all taxpayers have requisite skills in operating ICT tools.

### **2.2.2 Technology Acceptance Model Theory**

Technology Acceptance Model Theory (TAM; Davis, 1989) is a theory postulate that has been widely used to substantiate on grounds that guide adoption of new technologies. In a broad spectrum, TAM is grounded on two main principles that are reasoned as important in fostering or impairing acceptance of new processes and items of technology. These precepts are how the item is easily used and how the item is useful. Moreover, these two parameters are in essence subjective as they are

considered perceived and thus change from party to party. Technology Acceptance Model Theory is an information system theory that explains how consumers come to consent and adopt technology because of its professed user-friendliness and making activities less tedious and fast (Davis, 1989).

This theory proposes that when consumers are offered with fresh expertise they are indifferent on its adoption and the choice of whether to adopt is defined by two factors namely; professed effectiveness which is the capacity in which the use of the new technology will enhance the productivity of the person and the perceived simplicity of usage which is the level in which an individual considers that using a given technology will be simple and seamless (Bagozzi, Warshaw, & Davis, 1989). Hussein et al., (2018) envisions that acceptance of new technologies as per this theory is dependent on value created by the new technologies. New technologies are considered new, if they are able to increase efficiency and user friendliness in reference to existing technologies. Given this, the newness of a technology is vital to its acceptance among people in a social system. In practice, TAM has been operationalized and proven useful in predicting acceptance of new technologies. Carter *at..el.*, (2019) delved in validating the principles of TAM in respect to e-filing tax systems. Other discourses have evidenced that user friendliness and perceived utility are key components of tax system adoptions.

The principles outlined in this theory has far reaching use in various organisational processes. For instance, understanding value creation, utility and ease of use of systems can be instrumental in fostering good acceptance of technologies (Akpubi & Igbekoyi, 2019; Hendayana, Mulyadi, Reyta, & Halim, 2021). Technology acceptance model has pros and cons. On pros, the theory provides constructive discourse that underpins the acceptance of technologies. The theory is pegged on two constructs,

usefulness and ease in use which are both perceived attributes. They change from person to person, which is the exact perspective of human behavior which gives this theory wide usage in human behavior studies (Bostjan, Lewis, & Lah, 2020). Moreover, the theory picks its representation in few factors which makes its application easy. Again, TAM takes cognisance of external and societal attributes as part of its framework.

In spite of these benefits, TAM is criticised for taking a simplist approach in which only few paramaters are put into consideration in its formation. Additionally, the theory is pegged on subjective behavior intentions which is a subjective aspect. Thus, measuring behavioral intention is complex and may not substantially lead to good outcomes in testing for role of ease of use and usefulness of items. The theory too does not envision a situation where other factors such as experiences, interpersonal skills and knowdge on technology can mediate or moderate the association between perceived ease of use, perceived usefulness and adoption of technologies (Maqbool, 2018).

TAM was relevant to this study as it provides information on why new ideas are adopted either fast or at slow pace. The theory provides insights on what intrinsic and external factors influence acceptance of new technology. This theory indicates that new technologies if perceived as more useful and easier to use are likely to be adopted faster than those that are difficult to use.

TAM therefore explains all items of the independent variables (digitalization). KRA has since enhanced the use of ETRs and itax system phasing out manual processes of tax compliance. It was imperative to assess the uptake of the fiscal devices and how it influenced VAT compliance.

### **2.2.3 Economic Deterrence Theory**

Allingham and Sandmo (1972) founded economic deterrence theory that is applicable in tax discourses and is pegged on the premise that there are underlying factors that deter the commitment of crime by offenders in a given setting. Moreover, economic deterrence theory focuses on how countries can exert pressure to influence actions of parties, either individuals or corporates. In connection to tax, the theory matches with the main postulate of the rational choice idealism which undertakes that the taxpayers are motivated to make obedience choices that make best use of their utility (Dwenger, Kleven, Rasul, & Rincke, 2018). Largely, economic deterrence is a proposition that with respect to taxation posits that punitive or persuasive mechanisms can be employed in dealing with tax evasion. The economic deterrence theory provides a coherent framework that idealises tax evasion as a function of a wide array of factors such as costs incurred and benefits from it (Mendoza, Wielhouwer, & Kirchler, 2017). To put this theory in its perspective, it denotes that punitive means such as tax audits to detect tax cheats, punitive penalties and higher tax rates for those involved in tax malpractices can be used to deter tax evasion. The intentions of this theory forms one of the essential approaches of the tax departments of enforcing tax compliance through forced methods (Kiow, Salleh, & Kassim, 2017). Presently, there has been a paradigm shift as tax departments are stressing on the procedure of quality service as it builds maintainable tax obedience behavior, other than the use of power and forced means which has since been found not to be effective (Brockman, Genschel, & Seelkopf, 2016).

The chances of being detected for fraud is a function of tools employed in detecting tax evasion and perceived benefits of engaging in tax frauds (Alstadsæter *et al.*, 2017; Chau and Leung, 2009). Economic deterrence theory indicates that taxpayers tend to

evaluate the compliance environment in respect to benefits and risks. This is because, tax evasion, lead to profit savings, but when caught, it has tough ramifications. This is because, taxpayers look into likelihood of being detected for tax cheating and the accompanying punishments if caught. Allingham and Sandmo (1972) envisioned that if chance of being detected for tax malpractice is high, the situation, more often than not, leads to reduced tax crimes. Tax evasion is high where detection chances are low and that the punishment is less severe (Abdixhiku, 2013; Almunia and Lopez-Rodriguez, 2018). Literature points at an inverse association between detection and evasion (Almunia and Lopez-Rodriguez, 2018; Ayers *et al.*, 2015; Bott *et al.*, 2017; Slemrod *et al.*, 2001).

Economic deterrence model theory was selected in this study as it presented valuable arguments on tax compliance. It offers plausible evidence of how deterrence measures can be used to deter taxpayers from engaging in tax evasion. In essence therefore, this is an instrumental theory in understanding tax evasion and compliance. It therefore related to the VAT compliance. Whilst, tax compliance is a phenomenon that is influenced by various factors, this study focused on digitalization. The overall aim was to offer a linkage or lack of thereof between digitalization on VAT compliance.

## **2.3 Empirical Review**

Empirical reviews entail an assessment of prior studies in an attempt to establish research gaps. Research gap is an integral aspect of research as it bridges the literature gaps and contributes to theory on what is known about variables.

### **2.3.1 Online Tax Filing Procedure and VAT Compliance**

Akram, Malik and Shareef (2018) undertook a study to find out how the online tax filing was affecting the tax collection of organizations at Saudi Arabia. The researcher

sought to establish how technology affected online tax filing and the subsequent effect on tax collection. A web-based investigation was embraced to assemble information for the enquiry. The focus population was four hundred and nine users of online tax filing services. The information was analyzed using the covariance based structural equation modelling. Results of the study showed that online tax filing procedure had a major influence on tax collection of companies in Saudi Arabia. However, it was noted that online tax filing may be impaired by low network capabilities. In this context, Kamarulzaman and Azmi (2010) points that whilst online systems are fundamentally important in streamlining operations, they are only as such if they are able to handle network traffic during peak periods. In the event that network lags occur during high use seasons, the perception towards the systems is hampered and this may limit its use (Nakiwala, 2010). This can in turn occasion poor perception that is an impediment towards good results in system use (Mugo, 2013).

Hendayana, Mulyadi, Reyta and Halim (2021) were motivated to examine the e-filing knowledge and tax obedience in Bangladesh among a sample of 85 SMEs in Bandung West Java. Questionnaires were used to collect data in this study. Partial least square method was used to analyze the data collected. It was revealed that the existence of e-filing services promoted taxpayer knowledge but had no significant impact on tax compliance.

Akpubi and Igbekoyi (2019) examined fast food restaurants in Nigeria in respect of whether electronic tax awareness shaped tax obedience. The study focused on small and medium enterprises in the City of Lagos. The researchers were motivated to determine how electronic tax filing affected tax compliance on SMEs. The study employed survey design primary data was collected from two hundred and eighty one



firms. Output of data analysis showed that online filing procedure and knowledge of it boosted tax obedience.

Barnnet (2015) investigated taxpayer's attitude towards introduction of e-filing and its impact on tax compliance in Dr Ruth Segomotsi Mompati district, South Africa. Questionnaires were administered to a sample of 202 individual taxpayers to aid in the collection of data. On analysis, it emerged that e-filing is an instrumental aspect of tax processes that bettered tax compliance.

Gwaro, Maina and Kwasira (2016) examined online filing and its consequence on tax compliance in Kenya. It was in the interest of the researchers to evaluate how the level of awareness of online filing impacted on tax law adherence on small and medium sized enterprises in Nakuru County. The researchers hypothesized that digital tax filing led to high compliance. A descriptive exploration strategy was employed and the results led to the conclusion that online filing of returns was critical to small and medium sized enterprises and enhanced their compliance, thus increasing tax collection by KRA.

Maithya (2020) purposed to examine the impact of i-tax adoption on value added tax compliance among the big corporation taxpayers in Nairobi. Structured questionnaire was used to gather data. Inferential and descriptive statistics models were used to analyze the data. It was revealed that online tax return systems and monitoring activities had a positive and significant contribution to the compliance with tax laws.

### **2.3.2 Electronic Tax Registers and VAT Compliance**

Le and Nguyen (2021) undertook a study that evaluated how the use of electronic devices affected tax compliance in Vietnam. Data was collected from four hundred small taxpayers using a structured questionnaires. Results showed that electronic

devices in tax systems boosted compliance. Moreover, the level of compliance was influenced by perceived ease of use on electronic tax devices, tax awareness, efficiency of the revenue authority and perceived tax policy fairness.

Twesige *et.al.*, (2019) examined ICT tax reforms on tax compliance and revenue collection in Rwanda. The scholars sought to establish how the various reforms such as online filing procedures and use of electronic billing machines (EBM) influencing tax collection at the RRA. A population on 128 employees of RRA were targeted and a sample of fifty-six employees was selected. The findings of the study were that ICT Tax reforms such as online tax filing had a major influence on tax compliance and improved revenue collection by the RRA.

Obert *et.al.*, (2018) focused on e-tax systems and its role on tax compliance in Zimbabwe. The study focused on taxpayers in Harare. In this study primary data was sourced and processed in line with the tenets of descriptive statistics. The results were that e-tax systems significantly improved tax compliance for both large taxpayers and small taxpayers. This is attributed to time savings and costs efficiencies linked to e-tax system. Moreover, the study found out that e-tax system fostered accurate self-assessment of taxes thus boosting compliance.

Chege, Kiragu, Muthoni and Lagat (2015) examined the effect of fiscal devices on VAT compliance in Tanzania. Data was sourced from three hundred and ninety-one respondents. Data analysis was done using descriptive statistics. Results evidenced that fiscal devices significantly improved levels of Value Added Tax compliance. Moreover, fiscal devices were noted to significantly enhance compliance checks and enforcement thus boosting VAT compliance and revenue at the same time.

Wasao (2014) interrogated the role of online tax systems on tax compliance among small entities in Kenya. The study was a case of SMEs in East of Nairobi station. Primary data was collected from a sample of one hundred and sixty respondents. Results of regression analysis showed that online tax devices and platforms did not foster compliance among small taxpayers. Moreover, online registration, return filing and payments were found to be insignificant on tax compliance among SMEs in Kenya.

### **2.3.3 Digital Payment Systems and VAT Compliance**

Ajape, Afara and Uthman (2017) sought to find out the effect of e-payment system on tax administration and tax revenue generation at Lagos state revenue services. Survey research design was employed for the study in which first-hand data was used for assembling of information. The target population was one hundred and fifty employees of the Lagos State Revenue Services. A sample of one hundred and ten employees was chosen and collected data was processed in form of descriptive statistics. Results indicated that digital payments of taxes enhanced revenue collection at the Lagos state as well as on the efficiency of tax administration.

Syafira, Ratnasari and Ismail (2020) undertook a review on tax collection through digital payments in Indonesia. The researchers were motivated to study how generosity and trust was affecting tax collection in a digital payment environment. The target population was two hundred Muslims selected from Muslim community were considered in determining the effect of religiosity and trust on collection of zakat, infaq, endowment and alms. Questionnaires were used to collect the data. The results of the study were that religiosity and trust have a major impact on digital payment of zakat, infaq, endowment and alms in Indonesia.

Ofurum *et.al.*, (2018) sought to provide experimental confirmation on the consequence of automated tax payment on revenue generation in Nigeria. Secondary data was used for the enquiry and the data was analyzed using the trend analysis, descriptive statistics of mean and standard deviation. The results of the study were that there was an insignificant positive influence of digital payment on tax collection in Nigeria.

Eilu (2018) sought to determine the effect of embracing electronic devices for VAT compliance in Kenya and Tanzania. It was an empirical study to establish the findings of previous studies on the adoption of electronic tax assessments devices on tax compliance. In this study a systematic review method was adopted whereby a step by step comprehensive and detailed review of literature was undertaken. It was determined that adoption of electronic tax assessments devices such as electronic fiscal devices were impacting on increase in tax compliance.

#### **2.3.4 Valued Added Tax Automated Assessment and VAT Compliance**

Nazarov, Mikhaleva and Chernousova (2019) purposed to study the possibility of digital technologies in influencing process of tax administration. Secondary data from journals was used in this study. Content analysis was used to analyze the data gathered. It was revealed that, use of technologies provides tax administration with the real time tax data and also enabled assessment of non-compliance. Moreover, results portrayed that real time tax systems boosted compliance.

Obert, Rodgers, Tendai and Desderio (2018) carried out a research to assess the impact of the availability of electronic tax administration systems towards tax compliance in Harare, Zimbabwe. Questionnaires were used for data collection. Data was processed using inferential statistics. It was established that electronic tax filing

instrumentally bettered tax compliance. Moreover, verifiability of tax data was found to enhance compliance.

Evnevich and Ivanova (2020) aimed at examining correlation between digital technologies and tax monitoring and evaluation in Russia. In this study, both primary and secondary data were employed. Questionnaires were used to collect primary data and secondary data was obtained from the Federal Tax Service's statistics. The automation of tax control systems significantly increased tax audits efficiency and reduced the informal tax administration schemes. This translated to more compliance and increase in tax revenue.

Adeyeye (2019) investigated the impact of technological innovation on tax administration in Nigeria. Structured questionnaires were used to obtain primary data from a sample of two hundred and nineteen Federal Inland Revenue Service employees. ANOVA, regression and descriptive statistics models were used in the process of data analysis. Findings portrayed that information technology led to an increase and improvement in tax administration by provision of real time control on tax administration.

Supardianto, Ferdiana and Sulisty (2019) were motivated to look into the effects of information technology on start-up entities in respect to financial governance and taxation. Field information was acquired through usage of questionnaires which were self-administered to a sample of thirty-seven small business owners. The data was analyzed using the regression analysis model. The researchers concluded that many start-up owners used technology for financial governance but never used it for the taxation applications especially for final income tax. This meant that technology may not impact compliance.

## 2.4 Summary of Literature and Research Gaps

Whilst numerous studies have been undertaken in relation to digitalization and tax compliance, there still exist a conceptual and contextual gap that need to be addressed. Akram *et.al.*, (2018) carried out a study to find out how digital filing was influencing tax compliance in Saudi Arabia. This study did not consider digital payment systems that is an integral aspect of digitalization of tax administration systems. Twesige *et.al.*, (2019) studied to establish how online tax reforms were impacting on tax compliance in Rwanda. However, the study did not consider digital tax payments which is a vital element in digital tax platforms.

Ofurum *et.al.*, (2018) sought to provide experimental substantiation on the outcome of electronic tax payment on revenue generation in Nigeria. It was determined that there was an insignificant positive influence of digital payment on tax compliance and revenue generation in Nigeria. The study did not review aspects such as online tax filings. Ajape *et.al.*, (2017) sought to find out the effect of e-tax system on tax administration and tax revenue generation at Lagos State Revenue Services.

It was determined that digital payment has enhanced revenue collection by improving compliance at the Lagos state as well as on the efficiency of tax administration. Only descriptive statistics were done while this current study further undertook regression modelling. Gwaro *et.al.*, (2016) examined online filing and its effect on tax compliance in Kenya. It was established that online tax filing had enhanced tax compliance and therefore increased tax collection at KRA. The study reviewed SMEs only and had a broad spectrum. The current study focussed on value added tax compliance in Embakasi Central Sub County. Eilu, (2018) wanted to determine the effect of acceptance of electronic fiscal devices for VAT collection in Kenya and Tanzania. It was determined that adoption of electronic tax assesment devices such as

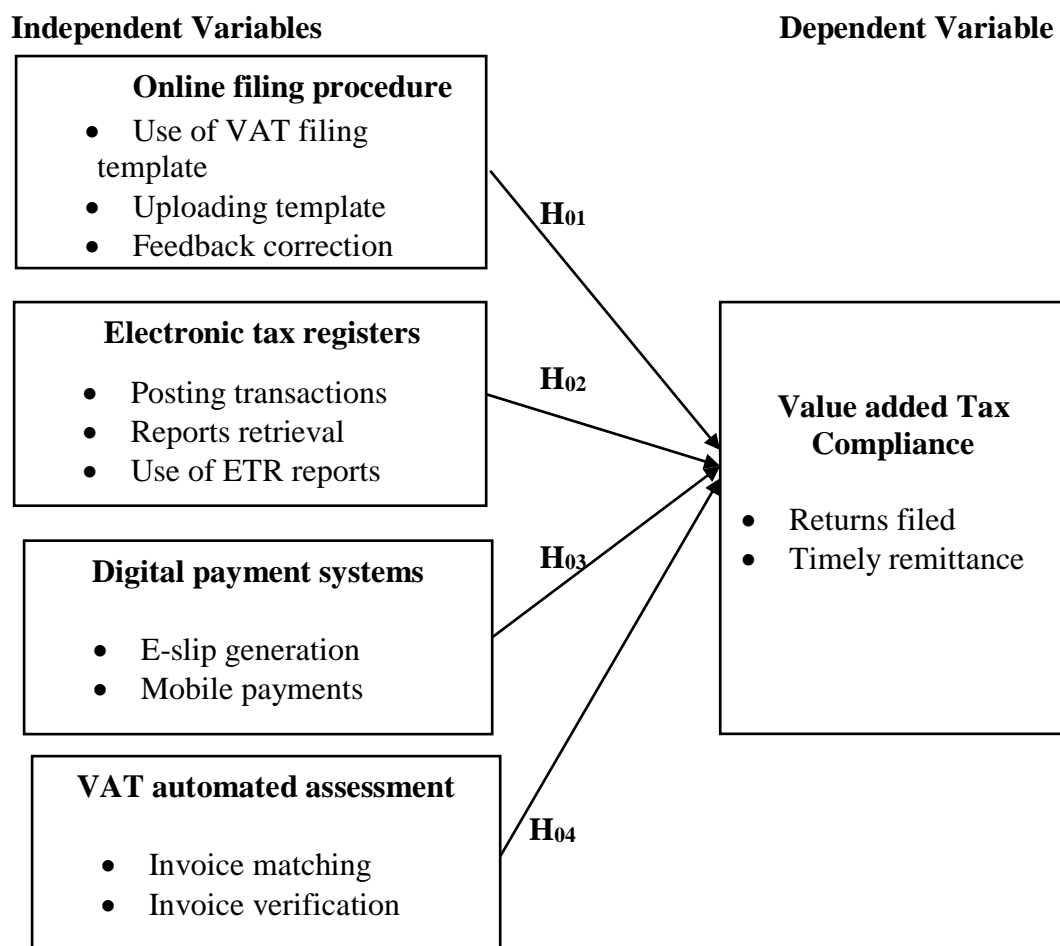
electronic fiscal devices increased tax collected. This study was an empirical analysis of past studies and used secondary data for analysis.

Nazarov, Mikhaleva and Chernousova (2019) revealed that use of technologies provides real time tax data that enhance administration leading to higher compliance. However, the study did not assess role of online tax filing, digital payments and electronic tax filing as the current study purposed to do. Obert, Rodgers, Tendai and Desderio (2018) examined electronic tax technologies and noted that real time tools boosted tax obedience. Similarly, this study did not focus on online tax filing, digital payments, electronic tax devices and automated assessment system. Other studies revealed that tax control systems boosted tax efficiency and improved tax revenue in Russia (Adeyeye, 2019; Evnevich & Ivanova, 2020; Supardianto, Ferdiana & Sulisty, 2019). All these studies did not consider similar variables with the current study and also present a contextual gap as some were not done in Kenya.

## **2.5 Conceptual Framework**

In research conceptualization, a conceptual framework illustrates study hypothesis based on current knowledge (Blumberg, Cooper, & Schindler, 2014). This instant study had two main types of variables namely; predictor variables and response variable. Predictor (independent) variables were online filing procedure, use of electronic tax registers, digital payment systems and value added tax automated assessment. Online filing procedure is the procedure of filing tax return in electronic forms. It was measured in respect to the ease of use of VAT filing template, uploading returns and feedback from a digitalized tax system. Electronic tax registers are electronic devices used to capture tax transactions. It was measured in respect to ease of posting transactions, retrieval of reports and use of such reports.

Digital payment systems entail process of registering and generating tax payment slip. It was measured in respect to ease of tax payment e-slip generation and mobile tax payments. The last predictor was Value Added tax automated assessment which is a system that matches input and output VAT data. It was measured in terms of invoice matching and invoice verification processes. The response variable was VAT compliance which was measured in terms of returns filed and timely remittance of Value Added Tax. This information is presented on Figure 2.1.



**Figure 2.1: Conceptual Framework**



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The key tasks and procedures of data collection and analysis are discussed in this part. The area of coverage for this chapter is research design that portrays the blueprint for achieving the objectives, target population, sampling frame, sample size and sampling technique, data collection instrument, data collection procedure and data analysis and presentation.

#### **3.2 Research Design**

A layout of key tasks and processes of that are undertaken to get insights and information relevant to report on objectives is known as research design. It covers steps undertaken in gathering input data and analyzing the data in a way that answers to and how research questions are fundamentally answered is known as research design (Cooper & Schindler, 2014). A research design is plan or a blueprint that characterizes overall plan for specific data testing. Given this fact, a good research design is picked in line with needs of the study, type of data and objectives of a study. This study employed explanatory design as it is suitable where variable association is being investigated. Moreover, the explanatory design is used where hypotheses are used to predict the association among factors. It is a plausible design that elucidates on link between variables (Muriuki, 2015).

#### **3.3 Target Population and Sample**

Target population represents all units in an area of study. All items that are focused by a study represents its population (Sekaran & Bougie, 2016). The population of this study was 190 SMEs Embakasi Central Sub County with VAT obligation as obtained from Kenya Revenue Authority East of Nairobi Tax Service Station (KRA, 2021).

Embakasi Central Sub-county is found in Nairobi County. It has five wards Matopeni, Kayole Central, Kayole South, Kayole North and Komarock. Table 3.1 illustrates the units that forms the target population for this study.

**Table 3.1: Target Population**

	Number
<b>SME VAT taxpayers</b>	190

### 3.3.1 Sample and Sampling Design

A sample of 129 respondents was considered in this study. This sample was derived from application of Slovin's formula from Israel (1992) and is stated as follows:

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

Whereas  $n$  is the sample,  $N$  is target population and  $e$  is level of precision index.

On substituting the known, the equation is established as follows:

$$n = 190 / 1 + 190(0.05)^2 = 129$$

Stratified sampling technique was used to in selecting the 129 respondents from individuals VAT taxpayers and corporates as shown on Table 3.2. Individual SMEs are entities registered under as business names under the Registration of Business names Act and are sole proprietorship while corporate SMEs are limited liability companies registered under the Companies Act.

**Table 3.2: Sample Size**

<b>Category</b>	<b>Sample</b>
Individuals SMEs	60
Corporate SMEs	69
<b>Total</b>	<b>129</b>

### **3.4 Data Types and Sources**

In this study, primary data was gathered by use of a questionnaire. The questionnaire was structured and consisted of items for each variable. A structured questionnaire consists of responses that are present and participants are required to agree or disagree with them. Use of closed ended questions enables collection of standardized data from participants. In this case, the items were statements in which the respondents were required to pick the most ranking in line with the Likert's Scale that ranged from one (1) to five (5) which records responses from strongly disagree to strongly agree in that order.

### **3.5 Data Collection Procedure**

Before going to the field, approval from National Commission for Science Technology and Innovation was obtained. Questionnaire is pertinent where first hand data is to be sourced (Albuquerque et al., 2014). The questionnaire were structured with close-ended questions and were hand delivered to the respondents. The questions were clearly phrased to make clear dimensions along which the respondents were to respond. In order to ensure that the questions were effective, a pilot test was conducted to improve on the questionnaire.

#### **3.5.1 Pilot Testing**

According to Cooper and Schindler (2006) the best size for a pilot test is 1% to 10% of units in the same size. Piloting has several benefits including examining the

position to capture what they sought to answer, plan on time requirements for the main study and provide a feedback on items to use. In this study, the researcher undertook a pilot study involving 13 respondents from Parklands area to evaluate the suitability of the questionnaire which would later be reviewed and revised accordingly.

### **3.5.2 Reliability**

This study focused on internal reliability that gauges alignment of constructs in combination, in reference to how well they fit in measuring the variable. It entails examining whether a set of items used to represent a concept or variable is understood as one whole variable (Deniz & Alsaffar, 2013). Various reliabilities are tested, but this study focused on internal reliability that gauges consistency of variables. It entails grouping of items, statements used in the tool to match them as one item. Most common used framework is Cronbach's alpha that scores a collection of items and ranks them from 0 to 1 in which a score of 0.700 is fairly good (Hopkins, 2017).

### **3.5.3 Validity**

Validity test pursues to illustrate whether the concepts do gather information as expected (Mohajan, 2017). Various validity tests are measured to examine different facets of accuracy that measures have. Firstly, construct validity evaluates accuracy of items used to proxy variables in data collection. This is subtle as it enhances conceptualization of variables which enhances accuracy and relevance of results. Secondly, criterion validity rates a tool in respect to its ability to predict outcomes in a concrete manner.

It tests the standard of what has been measurement against the reality (Almeida, Quintão, & Andrade, 2020). Thus it is procedure for testing effectiveness of measurements used in quantifying variables. Thirdly, face validity examines whether measurement is close to what is on the surface. It examines similarity of measures with actual parameters to establish if they are similar. Lastly, there is content validity that examines if measures used to proxy variables have actual representatives of the variables (Villasis & Miguel, 2018). Specifically, as adopted in this study, content validity was tested in that it tests the appropriateness of words, phrases and sentences as used to indicate the variables in the questionnaire. Content validity tests whether items are suitable in representing variables. In an attempt to improve validity, VAT experts was requested to comment on validity the structure, components and items contained in the questionnaire in which it was authenticated as to have fair contents to collect the intended information.

Factor analysis is a procedure for correlating observed variables where items are grouped together as factors in the best way that they represent variables. It is therefore a reduction technique that groups together items into factors improving variability in data. Moreover, it offers a clearer picture of how items or constructs can be grouped together in a reduced form. The factor analysis matrix gives loading, that is, the correlation between each variable and each factor. Factor analysis was done in order to bring out items for each variable which in combination offered the best fit for measuring the variable. At the same time, factor analysis depicts the congruency of items in measuring a variable. In this study, factor analysis was done using principal component analysis.

### **3.6 Assumptions of the Regression Model**

Regression analysis is undertaken on the basis that some assumptions are met. The tests include tests for normality and multicollinearity.

#### **3.6.1 Normality Test**

Normality exist where data shows normal characteristics in which it is void of outliers. Thus, normality exist where data is neither skewed nor kurtotic which is manifested by observations being evenly spread around the mean. In regression analysis, only two perspectives of normality are tested: normality of residuals and normality of regressor factor (Keya & Rahmatullah, 2016). Residuals should be normality distributed with a mean of zero for model estimates to have high efficacy. Shapiro-Wilk test was used in testing for normality of the data in this study. Shapiro-Wilk test of more than 0.05 indicates that the data is normally distributed.

#### **3.6.2 Multicollinearity**

High correlation among explanatory variables is known as multicollinearity and distorts efficacy of model estimates and significance (Melo & Kibria, 2020). Input variables are assumed to be independent of each other for regression outputs to negate the likelihood of being spurious results. Moreover, multicollinearity complicates regression analysis as predictors are factors of each other. As a result, the output generated is erroneous. In this study, Variance Inflation Factor was used to assess existence of multicollinearity. Rule of thumb is if  $VIF < 10$ , multicollinearity is low and all input factors can be used.

### 3.7 Data Analysis and Presentation

Data analysis is the process of scrutinizing the collected data with an aim of giving it a meaning that is relevant in answering research questions. In this study, data analysis was done by use of both descriptive and inferential statistics. Descriptive statistics entail computations of means and standard deviations. Secondly, correlation analysis was done to establish relationship between variables. In the case of inferential statistics, correlation and linear regression was used. In this study, a multiple linear regression model was used with the four independent variables (online filing procedure, use of electronic tax registers, digital payment systems and Value Added tax automated assessment) whereas the dependent variable was VAT compliance.

#### 3.7.1 Model Specification

The regression model was set as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Y = Value added tax compliance

$\beta_0$  = Y-intercept

$\beta_1, \beta_2, \beta_3$  and  $\beta_4$  = Coefficients of variables

$X_1$  = online filing procedure

$X_2$  = electronic tax registers

$X_3$  = digital payment systems

$X_4$  = Value Added Tax automated assessment

e = stochastic error

### 3.8 Operationalization and Measurement of Variables

The variables and measurement are as shown on Table 3.3.

**Table 3.3: Variables and Measurement**

Variable	Type of Variable	Indicators	Source/Authors	Measurement	Data Analysis
Online filing procedure	Independent	Filing Vat template Uploading return Feedback correction	Gayathri & Jayakumar (2016)	5-Point Likert's scale	Regression/Quantitative
Electronic tax registers	Independent	Ease of positing Retrieval of reports Use of etr reports	Eilu (2018) Mativo, Muturi, & Nyang'au (2015)	5-Point Likert's scale	Regression/Quantitative
Digital payment systems	Independent	e-slip generation mobile payments	Mativo, Muturi, & Nyang'au (2015)	5-Point Likert's scale	Regression/Quantitative
Valued Added Tax Automated Assessment	Independent	Invoice matching Invoice verification	(Kenya Revenue Authority, 2022)	5-Point Likert's scale	Regression/Quantitative
VAT Compliance	Dependent	Returns filed Timely remittance	Fjeldstad, Kagoma, Mdee, Sjursen, & Somville, (2020)	Returns filed Timely remittance	Regression/Quantitative

### 3.9 Ethical Issues

Research should be done in accordance to the best practices of ethics in a way that it does not result to emotional or physical harm of the units that form the area of interest of a given research (Roberts, 2015).



Ethics refers to standard of actions and norms that are expected from people in a particular societal set up. This study was undertaken with due regard to ethical considerations. Foremost, the study was done after obtaining authority from the Kenya Revenue Authority, the University and National Commission for Science, Technology and Innovation. The respondents were treated respectfully and any information obtained from them was used solely for academic purposes only. Thus, confidentiality was upheld at all times and any personal information obtained was treated with utmost regard to confidentiality.

This study is not a product of copy pasting from books, journals, website and so on as plagiarism is an aspect of academic ethics and integrity. The researcher read widely, understood the concepts and wrote in his own words ensuring that where due and necessary, citation was done using the American Psychological Association (APA) style for both in-text and list of references. In addition, those respondents that were not free to participate in the study were not coerced to the contrary. Participants were sourced at free will and there was no reward to entice respondents in order to get objective results. It was important that the respondents are picked in a way that traceability is eliminated and that free participation is enshrined in any research.

## CHAPTER FOUR

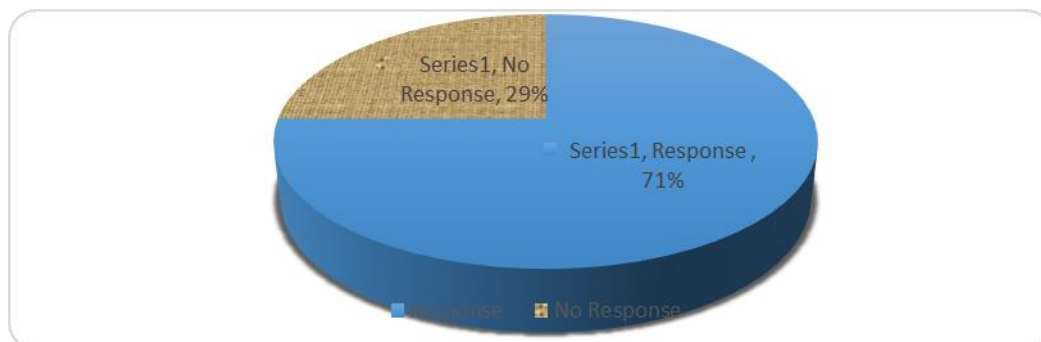
### DATA ANALYSIS, PRESENTATION AND INTERPRETATIONS

#### 4.1 Introduction

Chapter four focuses on presentation of data analysis outputs. It covers subtle data processing phases that were pertinent in providing statistical information appropriate in testing variable interlinkages and hypotheses thereof. Secondly, it has outputs for regression analysis which evidences inferences on role of online filing, electronic tax register, digital payment systems and VAT automated assessment system on VAT compliance.

#### 4.2 Response Rate

The sample size of this study was one hundred and twenty-nine SMEs, 98 were filled but 6 were incorrectly filled leaving 92 correctly filled translating to 71 % response rate. This return rate was considered good enough since it met the threshold set by most researchers. A more than 35% return rate is fair when dealing with organisations executives (Baruch, 2013). On the other hand, Saunders *et al.*, (2007) agrees that at least 40 % return rate is fit for findings generalizations while Sekaran and Bougier (2009) view that a return rate of over 60 % is excellent. The output for response rate is illustrated on Figure 4.1.



**Figure 4.1: Response Rate**

Survey Data (2022)

### 4.3 Respondents' Bio-data

Table 4.1 has results for bio data for the respondents. This included their gender, age, education and working period.

**Table 4.1: Respondents Bio data**

<b>Characteristics</b>	
<b>Gender</b>	
Male	60.9
Female	39.1
<b>Total</b>	
<b>Age</b>	
Below 30yrs	9.1
31-40	21.5
41-50	38.2
51- 60	31.2
<b>Total</b>	
<b>Education level</b>	
Primary education	12
Secondary education	18.5
Diploma	45.6
Undergraduate	10.8
Others	13
<b>Total</b>	
<b>Business Existence</b>	
Below 5yrs	25
5-10yrs	60.8
11-15yrs	6.5
Above 15yrs	7.6
<b>Total</b>	

Survey Data (2022)

Pegging on statistics presented on Table 4.1, it is notable that male, at 60.9% formed most of the respondents while female accounted for 39.1%. In inference, more male participated in data collection. Results in reveal that majority (38.2%) were aged between 41-50 years, 31.2% were aged between 51-60 years, 21.5% were aged 31-40 years, while 9.1% were below 30 years. The result depicted that majority of the respondent at Embakasi central are middle aged.

Whilst results of education showed varying levels, the results show that minority 12% had acquired education up to primary level, 18.5% had studied up to the secondary level, and 45.6% had acquired education up to diploma level. While, 10.8% had pursued education up to degree level. Lastly 13% had others levels of education. The results show that most of respondents are educated. From the findings 25% businesses existed below 5 years, 60.8 % of businesses existed between 5-10 years, while 6.5% existed between 11-15 years, lastly 7.6% existed for more than 15 years

#### **4.4 Descriptive Statistics**

Descriptive statistics entailed an analysis of responses in terms of means and standard deviations. Measures of skewness and Kurtosis were also obtained. The respondents gave their views about the components of digitalisation in relation to VAT compliance in a 5-point Likert scale. The range was from where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

##### **4.3.1 Online filing**

Table 4.2 indicates that My business File VAT using itax-VAT template than use of manual returns with a (mean=3.57) Uploading VAT returns is time saving (mean=2.61), I find Online VAT filing cost effective (mean=3.28) Correcting errors on VAT returns is not tedious (mean=4.19) Amending VAT returns is fast mean=3.78), Accounting reports necessary for VAT are compatible with my systems reports (mean=4.21).

**Table 4.2: Online Filing**

5 = Strongly Agree 4 = Agree 3 = Neutral 2 = Disagree 1= Strongly Disagree

	Mean	Std. Dev	Skewness	Kurtosis
My business File VAT using itax-VAT template than use of manual returns	3.57	0.826	0.163	0.428
I find Uploading VAT returns is time saving	2.61	1.401	0.640	0.846
I find Online VAT filing cost effective	3.28	0.766	0.011	0.442
Correcting errors on VAT returns is not tedious	4.19	0.658	1.221	0.210
Amending VAT returns is fast	3.78	0.888	-0.270	0.421
Accounting reports necessary for VAT are compatible with my systems reports	4.21	0.649	-0.016	-0.641
<b>Overall mean</b>	<b>3.6</b>			

#### 4.3.2 Electronic Tax Register

Table 4.3 Indicates that Booking transactions on ETR machine is fast with a (mean=3.45). Retrieval of VAT reports simple with a (mean=3.21). ETRs have increased correctness of VAT returns with a (mean=4.10). ETRs machines are affordable with a (mean=3.93).

**Table 4.3: Electronic Tax Register**

5 = Strongly Agree 4 = Agree 3 = Neutral 2 = Disagree 1= Strongly Disagree

	Mean	Std. Dev	Skewness	Kurtosis
Booking transactions on ETR machine is fast	3.45	1.222	-0.102	-0.804
Retrieval of VAT reports is simple	3.21	0.720	-0.392	-0.962
ETRs have increased correctness of VAT returns	4.10	0.637	-0.346	-0.485
ETRs machines are affordable	3.93	0.161	-0.291	-0.489
<b>Overall mean</b>	<b>3.67</b>			

### 4.3.3 Digital Payment Systems

Table 4.4 indicates that Digital systems of payment slip is fast with a (mean=3.30). Mobile payment of taxes is cost effective with a (mean=3.58). Electronic systems of bills to taxpayers is efficient (mean=4.16). Payments of taxes through banks is cost and time efficient with a (mean=4.08).

**Table 4.4: Digital Payment Systems**

5 = Strongly Agree 4 = Agree 3 = Neutral 2 = Disagree 1= Strongly Disagree

	Mean	Std. Dev	Skewness	Kurtosis
Digital systems of payment slip is fast	3.30	0.762	-0.851	-0.307
Mobile payment of taxes is cost effective	3.58	0.855	-0.162	-0.727
Electronic systems of bills and fiscal receipts to taxpayers is efficient	4.16	0.712	-0.141	-0.681
Payments of taxes through banks is cost and time efficient	4.08	0.685	-0.311	-0.532
<b>Overall mean</b>	<b>3.78</b>			

### 4.3.4 Value Added Tax Automated Assessment System

Table 4.5 Indicates that Matching of Value Added tax automated system (VAA) does not allow falsification of invoices' amounts with a (mean=3.99). Verification of tax invoices by tax officials makes us declare tax information correctly (mean=3.18). VAA system detects inconsistencies in invoices and this leaves no room for manipulating purchases invoices (mean=4.31). Value added tax automated assessment has reduced filing of fictitious input (purchases) (mean=3.84).

**Table 4.5: Value Added Tax Automated Assessment System**

5 = Strongly Agree 4 = Agree 3 = Neutral 2 = Disagree 1= Strongly Disagree

	Mean	Std. Dev	Skewness	Kurtosis
Matching of Value Added tax automated system (VAA) does not allow falsification of invoices' amounts	3.99	0.863	-0.326	0.178
Verification of tax invoices by tax officials makes us declare tax information correctly	3.18	0.673	-0.624	-0.863
VAA system detects inconsistencies in invoices and this leaves no room for manipulating purchases invoices	4.31	0.808	-0.032	-0.115
Value added tax automated assessment has over the last 5 years reduced filing of fictitious input (purchases)	3.84	0.866	-0.301	-0.023
<b>Overall mean</b>	<b>3.83</b>			

#### 4.3.5 Value Added Tax Compliance

Table 4.6 Indicates that we file VAT returns in time as required by law with a (mean=3.98). Our business pays Value Added Tax in time as required by law with (mean=3.37). Our business remits value added taxes correctly as required by VAT regulations (mean=4.41). Our business keeps Value Added Tax records and documents as stipulated by the law (mean=3.64).

**Table 4.6: Value Added Tax Compliance**

5 = Strongly Agree 4 = Agree 3 = Neutral 2 = Disagree 1= Strongly Disagree

	Mean	Std. Dev	Skewness	Kurtosis
We file VAT returns in time as required by law	3.98	0.974	-0.900	0.321
Our business pays Value Added Tax in time as required by law	3.37	1.150	-0.203	-0.611
Our business remits value added taxes correctly as required by VAT regulations	4.41	0.945	-1.067	0.780
Our business keeps Value Added Tax records and documents as stipulated by the law	3.64	1.338	-0.144	-0.539
<b>Overall mean</b>	<b>3.85</b>			

## 4.2 Reliability Tests

Statistics shown on Table 4.7, indicates that online filing, electronic tax register, digital payment systems, VAT automated assessment system and VAT compliance had Cronbach's alpha of 0.978, 0.865, 0.850, 0.774 and 0.876 respectively. Where Cronbach's alpha statistic is greater or equal to 0.7, it is concluded that data sourcing tool is reliable. In reference, to the statistics that each variable had, then the tool was fit as it had internal reliability and thus capable of getting information that can lead to meeting of research objectives.

**Table 4.7: Reliability Results**

<b>Variable</b>	<b>Number of Items</b>	<b>Cronbach's Alpha Score</b>	<b>Conclusion</b>
Online filing	6	.978	Reliable
Electronic tax register	4	.865	Reliable
Digital payment systems	4	.850	Reliable
VAT automated assessment system	4	.774.	Reliable
Value Added Tax compliance	4	.876	Reliable

## 4.3 Factor Analysis

The factor analysis matrix gives loading, that is, the correlation between each variable and each factor. Factor analysis was done in order to bring out items for each variable which in combination offered the best fit for measuring the variable. At the same time, factor analysis depicts the congruency of items in measuring a variable. The statements which give values over 0.5 and none is more than 0.8 implying linear relationship, interval or near interval data lack of high multicollinearity. Marsh (1988) proposed that high values of factor analysis which are close to 1.0 generally indicate that a factor analysis may be useful with the data. While values which are less than 0.50, the results of the factor analysis probably will not be very useful in the research.



**Table 4.8: Factor Analysis**

	<b>Online filing</b>	<b>Electronic tax register</b>	<b>Digital payment systems</b>	<b>VAT automated assessment system</b>
<b>Online filing</b>				
My business File using itax-VAT	0.713			
Uploading VAT returns time saving	0.726			
Online VAT filing is cost effective	0.569			
Correcting errors on VAT returns	0.673			
Amending VAT returns is faster	0.540			
VAT are compatible with systems	0.589			
<b>Electronic tax register</b>				
Transactions on ETR machine is fast...		0.798		
Retrieval of VAT reports is simple..		0.757		
ETRs have increased correctness..		0.590		
ETRs machines are affordable.....		0.698		
<b>Digital payment systems</b>				
Digital systems of payment is fast...			0.514	
Mobile payment is cost effective...			0.646	
Electronic systems of bills is effective...			0.755	
Payments of taxes through banks is time efficient...			0.679	
<b>VAT automated assessment system</b>				
VAA does not allow falsification of invoices.....				0.755
Tax officials make us declare tax information.....				0.528
VAA system detects inconsistencies...				0.781
VAA has reduced filing of fictitious input....				0.670
Extraction Method: Principal Component Analysis				
Survey Data (2022)				

#### 4.4 Diagnostic Tests

To avoid reporting spurious results, data was tested for appropriateness in linear regression in which normality evaluations, correlations and predictors independence were done.

##### 4.4.1 Test of Normality

Normality points at existence of normal distributions. In this study, normality was tested using Shapiro-Wilk which in essence examines normal distribution for observed and predicted values.

Output data evidences that Shapiro-Wilk were 0.62 for online filing, 0.59 for Electronic tax register, 0.81 for Digital payment systems, 0.83 for VAT automated

assessment system and 0.75 for VAT compliance which means the assumption of normality was intact in all observations that proxied variables as per Table 4.9

**Table 4.9: Tests of Normality**

	Shapiro-Wilk	
	Statistic	Sig.
Online filing	0.676	0.62
Electronic tax register	0.890	0.59
Digital payment systems	0.881	0.81
VAT automated assessment system	0.710	0.83
VAT compliance	0.850	0.75

a. Lilliefors Significance Correction

#### 4.4.2 Multicollinearity

In performing regression analysis, independent variables are tested for existence for multicollinearity. Multicollinearity exists where predictors are correlated and tend to act as replica of each other and any can linearly predict another or others. In as much, as multicollinearity does not render model estimates spurious, it complicates model coefficients as it is difficult to statistically authenticate association between each predictor on dependent factor. Moreover, high multicollinearity infers that some predictors may not contribute to the overall model efficacy as they are either redundant or copies of others.

In ideal view, VIF of more than 2.5 manifests independence from each other. High multicollinearity indicates that predictors are copies of each other and therefore the model may not show the association between each variable and the dependent outcome. Table 4.10 has the findings multicollinearity.

**Table 4.10: Multicollinearity Test**

Model	Collinearity Statistics	
	Tolerance	VIF
Online filing	.702	1.539
Electronic tax register	.862	1.014
Digital payment systems	.901	1.296
VAT automated assessment system	.794	1.180

a. Dependent Variable: VAT compliance

#### 4.4.3 Correlation Analysis

Table 4.11 indicate that online filing is positively correlated with VAT compliance ( $r= 0.281$ , and  $p=0.003<0.05$ ) electronic tax registers is positively correlated with VAT compliance ( $r= 0.202$ , and  $p=0.000<0.05$ ) digital payment systems is positively correlated with VAT compliance ( $r= 0.327$ , and  $p=0.002<0.05$ ). VAT automated assessment system is positively correlation with VAT compliance ( $r= 0.385$ , and  $p=0.000<0.05$ ) Thus from the study findings it can be concluded that electronic tax register variable has the lowest correlation. While VAT automated assessment system variable have the strongest correlation.

**Table 4.11: Correlation Analysis**

		VATC	ONF	ETR	DPP	VAAS
VAT compliance	Pearson Correlation	1				
	Sig. (2-tailed)	.92				
	N					
ONF	Pearson Correlation	.281**	1			
	Sig. (2-tailed)	.003				
	N	92				
ETR	Pearson Correlation	.202**	.290**	1		
	Sig. (2-tailed)	.000	.001			
	N	92				
DPP	Pearson Correlation	.327**	.273**	.359**	1	
	Sig. (2-tailed)	.002	.000	.003		
	N	92				
VAAS	Pearson Correlation	.385**	.345**	.232	.274	1
	Sig.(2tailed)	.000	.000	.000	.000	
	N	92				

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

Source: Research Data, (2022)

#### 4.5 Regression Analysis

The core of regression analysis is to showcase, existence or absence of an association among variables. It essentially uses statistical parameters and processes to test hypothesis and later report on findings. This study delved with VAT compliance as a function of four input factors. In this section, output of regression procedures are explained in terms of their statistical inferences and connection with the broad and specific aims of this study. In testing for significance, alpha value of 0.05 is used in consideration that a 95 % confidence level was set in this study.

#### Model Summary

The results in Table 4.12 indicated that online filing procedure, use of electronic tax registers, digital payment systems and VAT automated assessment system had a positive correlation with VAT compliance up to 70.7% or ( $R= 0.707$ ). The results revealed that online filing, electronic tax registers, digital payment systems and VAT automation assessment system caused a variation of 49.9% or ( $R^2=0.499$  and adjusted  $R^2 =0.494$ ) on VAT compliance. This implies that the remaining 50.1% of the change was caused by other factors not included in the model. Table 4.12 Effect of Online Filing, Electronic Tax Registers, Digital Payment Systems and VAT Automation Assessment System on VAT Compliance.

**Table 4.12: Model Summary**

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.707 <sup>a</sup>	.499	.494		3.2191

Predictors: (Constant), online filing, electronic tax registers, digital payment systems and VAT automation assessment system

Value Added Tax Compliance

#### 4.5.1 Analysis of Variance

ANOVA findings in table 4.13 show that there is a strong significant relationship between the independent variables (online filing, electronic tax registers, digital payment systems and VAT automated assessment system) and the dependent variable VAT compliance. The findings from Table 4.13 show an F statistic value of 11.317 with a significant level was 0.000, revealing significantly fit model that substantially implies meaningful role of each predictor on VAT compliance.

**Table 4.13: ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16.763	4	4.1907	11.317	.000 <sup>b</sup>
	Residual	32.220	87	0.3703		
	Total	48.983	91			

a. Predictors: (Constant), online filing, electronic tax registers, digital payment systems and VAT automation assessment system

b. Dependent Variable: VAT compliance

#### 4.5.2 The Overall Effect of the Study Variables on Value Added Tax Compliance

Regression was carried out to determine the combined effect of online filing, electronic tax registers, digital payment process and VAT automated assessment system on VAT compliance.

**Table 4.14: Regression Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.364	.054		6.740	.000
	Online filing	.337	.049	.286	5.837	.001
	Electronic tax register	.282	.064	.329	5.141	.000
	Digital payment systems	.259	.066	.311	4.712	.000
	VAT automated assessment system	.387	.052	.296	5.692	.000

a. Dependent Variable: VAT Compliance

b. Independent Variables: (online filing, electronic tax registers, digital payment systems and VAT automated assessment system)

### Regression Equation

$$Y = 0.364 + 0.286X_1 + 0.329X_2 + 0.311X_3 + 0.296X_4$$

Where;

$\beta_0$  = constants term

$\beta_1, \beta_2, \beta_3, \beta_4$  = regression coefficients of  $X_1, X_2, X_3, X_4$

Y = Value Added Tax Compliance

$X_1$  = online filing

$X_2$  = electronic tax register

$X_3$  = digital payment

$X_4$  = VAT automated assessment system.

The Regression equation shows that independent variables and dependent variable were statistically significant. The results show, a unit change in online filing increases VAT compliance by 0.286. A unit change in electronic tax register increases VAT compliance by 0.329. A unit change in digital payment systems increases VAT compliance by 0.311. A unit change in VAT automated assessment system increases VAT compliance by 0.296.

#### 4.5.3 Test of Hypotheses

The first hypothesis  **$H_{o1}$**  online filing procedure does not have a significant effect on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. The results on Table 4.15 reveal that the p value was as  $\beta_1=0.286, \rho<0.001$  which is less than  $\rho<0.05$  which implies that relationship was

statistically significant therefore this hypothesis was rejected. Online filing thus has a positive effect on VAT Compliance.

The second hypothesis ***H<sub>o2</sub>*** : Use of electronic tax registers does not significantly affect Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. The results on Table 4.15 reveal that the p value was as  $\beta_2=0.329$ ,  $\rho<0.000$  which is less than  $\rho<0.05$  which implies that relationship was statistically significant therefore this hypothesis was rejected. Electronic tax register thus has a positive effect on VAT Compliance

The third hypothesis ***H<sub>o3</sub>***: There is no significant effect of digital payment systems on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. The results on Table 4.15 reveal that the p value was as  $\beta_3=0.311$ ,  $\rho<0.000$  which is less than  $\rho<0.05$  which implies that relationship was statistically significant therefore this hypothesis was rejected. Digital payment systems thus has a positive effect on VAT Compliance

The forth hypothesis ***H<sub>o4</sub>*** : There is no significant effect of Value Added Tax automated assessment system on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. The results on Table 4.15 reveal that the p value was as  $\beta_4=0.296$ ,  $\rho<0.000$  which is less than  $\rho<0.05$  which implies that relationship was statistically significant therefore this hypothesis was rejected. VAT automated assessment system thus has a positive effect on VAT Compliance.

**Table 4.15: Summary of Hypotheses Testing**

Hypothesis	P-value	Decision
<b><math>H_{o_1}</math></b> : Online filing procedure does not have a significant effect on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County	0.001	Reject <b><math>H_{o_1}</math></b>
<b><math>H_{o_2}</math></b> : Use of electronic tax registers does not significantly affect Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County	0.000	Reject <b><math>H_{o_2}</math></b>
<b><math>H_{o_3}</math></b> : There is no significant effect of digital payment systems on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County	0.000	Reject <b><math>H_{o_3}</math></b>
<b><math>H_{o_4}</math></b> : There is no significant effect of Value Added Tax automated assessment system on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County	0.000	Reject <b><math>H_{o_4}</math></b>

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**Source:** Research (2022)

#### 4.6 Discussion of the Findings

Under data analysis, various statistics were obtained which entailed frequencies, means and at the end inferential statistics were ran. The outcome of the whole process is interpreted in this section.

##### 4.6.1 Effect of Online Filing on Value Added Tax Compliance

In its first aim, this study delved in substantiating online filing on VAT compliance among small and medium enterprises in Embakasi Central Sub-County. The findings of the study showed that the relationship between online filing and VAT compliance was vital as p-value was 0.001. In light of this, online filing betters VAT compliance. The findings concurred with Akram, Malik and Shareef (2018) who undertook a study



to find out how the online tax filing was affecting the tax collection of organizations at Saudi Arabia. The researcher sought to establish how technology affected online tax filing and the subsequent effect on tax collection. A web-based investigation was embraced to assemble information for the enquiry. The focus population was 409 users of online tax filing services. The information was analyzed using the covariance based structural equation modelling. Results of the study showed that online tax filing procedure had a major influence on tax collection of companies in Saudi Arabia.

#### **4.6.2 Effect of Electronic Tax register on Value Added Tax Compliance**

In its second aim, this study sought to determine the effect of use of electronic tax registers on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. The findings of the study show that the relationship between electronic tax register and VAT compliance was statistically significant given that the P-value was  $0.000 < 0.05$ . The findings were in agreement with Twesige *et.al.*, (2019) examined ICT tax reforms on tax compliance and revenue collection in Rwanda.

The scholars sought to establish how the various reforms such as online filing procedures and use of electronic billing machines (EBM) influencing tax collection at the RRA. A population on 128 employees of RRA were targeted and a sample of fifty-six employees was selected. The findings of the study were that ICT Tax reforms such as online tax filing had a major influence on tax compliance and improved revenue collection by the RRA.

#### **4.6.3 Effect of Digital Payment Systems on Value Added Tax Compliance**

Thirdly, this study aimed at determine the effect of digital payment systems on Value Added Tax compliance among small and medium enterprises in Embakasi Central

Sub-County. The findings of the study show that the relationship between digital payment systems and VAT compliance was statistically significant because the p-value was 0.000,  $p = 0.000 < 0.05$ . The findings concurred with Eilu (2018) sought to determine the effect of embracing of electronic devices for VAT compliance in Kenya and Tanzania. It was an empirical study to establish the findings of previous studies on the adoption of electronic tax assessments devices on tax compliance. In this study a systematic review method was adopted whereby a step by step comprehensive and detailed review of literature was undertaken. It was determined that adoption of electronic tax assessments devices such as electronic fiscal devices were impacting on increase in tax compliance

#### **4.6.4 Effect of VAT Automated Assessment on Value Added Tax Compliance**

The fourth aim of the study was to determine the effect of Value Added Tax automated assessment system on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. The findings of the study show that the relationship between Value Added Tax automated assessment system and VAT compliance was statistically significant at a p value of 0.000, which is less than 0.05 rule of thumb index for rejecting null hypothesis,  $p = 0.000 < 0.05$ .

The findings concurred with Nazarov, Mikhaleva and Chernousova (2019) purposed to study the possibility of digital technologies in influencing process of tax administration. Secondary data from journals was used in this study. Content analysis was used to analyze the data gathered. It was revealed that, use of technologies provides tax administration with the real time tax data and also enabled assessment of non-compliance. Moreover, results portrayed that real time tax systems boosted compliance.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This being the last chapter of this study that delved on effect of digitalization on value added tax compliance among SMEs in Embakasi Central Sub-County has four themes. It commences with findings, then conclusions and thirdly has recommendations. In the end, suggestions for further studies are made to advance the discourses on tax compliance.

#### 5.2 Summary of Findings

In a broad spectrum, this study delved on determining the effect of digitalization on value added tax compliance among small and medium enterprises in Embakasi Central Sub-County, Kenya. Drawing from this broad aim, four narrow scopes were outlined that were pegged from four predictors. The predictor variables were online filing, electronic tax registers, digital payment systems and value added tax automated assessment system. Primary data was gathered from a sample of respondents in the study location, responses were coded, collated and analysis performed to derive substantive statistics that could aid in testing the four hypotheses. In light of results and outputs of data analysis, the following findings were achieved.

##### 5.2.1 Effect of Online Filing on Value Added Tax Compliance

The first objective was to establish the effect of online filing procedure on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. Correlation analysis showed that online filing and value added tax compliance are positively as well as significantly related. In respect to the Regression analysis it shows there was a positive significant relationship between

online filing on VAT compliance among small and medium enterprises in Embakasi Central Sub-County

### **5.2.2 Effect of Electronic Tax Register on Value Added Tax Compliance**

The second objective was to determine the effect of use of electronic tax registers on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. Correlation analysis showed that electronic tax register and value added tax compliance are positively as well as significantly related. In respect to the Regression analysis it shows there was a positive significant relationship between electronic tax register on VAT compliance among small and medium enterprises in Embakasi Central Sub-County

### **5.2.3 Effect of Digital Payment Systems on Value Added Tax Compliance**

The third objective was to determine the effect of digital payment systems on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. Correlation analysis showed that digital payment systems and value added tax compliance are positively as well as significantly related. In respect to the Regression analysis it shows there was a positive significant relationship between digital payment systems on VAT compliance among small and medium enterprises in Embakasi Central Sub-County

### **5.2.4 Effect of Value Added Tax Automated Assessment System on Value Added Tax Compliance**

The fourth objective was to determine the effect of Value Added Tax automated assessment system on Value Added Tax compliance among small and medium enterprises in Embakasi Central Sub-County. Correlation analysis showed that Value Added Tax automated assessment system and value added tax compliance are

positively as well as significantly related. In respect to the Regression analysis it shows there was a positive significant relationship between Value Added Tax automated assessment system and VAT compliance among small and medium enterprises in Embakasi Central Sub-County.

### **5.3 Conclusion**

The conclusions of this study were informed based on the findings of the study. Each objective was reviewed and a conclusion provided. Based on research finding it can be concluded that online filing influences VAT compliance among small and medium enterprises in Embakasi Central Sub-County. Respondents agreed that accounting reports necessary for VAT are compatible with the systems reports and correcting errors on VAT returns is not tedious.

Based on research finding it can be concluded that electronic tax register influences VAT compliance among small and medium enterprises in Embakasi Central Sub-County. Respondents agreed that ETRs have increased correctness of VAT returns and that ETRs machines are affordable. The finding concluded that digital payment systems influences VAT compliance among small and medium enterprises in Embakasi Central Sub-County. In great extent respondent were in agreement electronic systems of bills to taxpayers is efficient and Payments of taxes through banks is cost and time efficient

The study concluded that Value Added Tax automated assessment system influences VAT compliance among small and medium enterprises in Embakasi Central Sub-County. Respondent agreed that Value Added Tax Assessment system detects inconsistencies in invoices and this leaves no room for manipulating purchases invoices and has reduced filing of fictitious input VAT (on purchases).

#### **5.4 Recommendation**

Based on the objectives of the study, the findings established that online filing, use of electronic tax registers, digital payment systems and VAT automated assessment system have positive effect on value added tax compliance. The findings also revealed a statistically significant relationship between online filing, use of electronic tax registers, digital payment systems and VAT automated assessment system have positive effect on VAT compliance. Therefore, this study recommends that KRA should enhance digitalization components to be able to achieve higher levels of compliance. KRA should revamp digitalization to improve capabilities such as widening the digital payment systems to include online cheque remittance, real-time ETRs and improve VAT automated assessment systems.

#### **5.5 Contribution to Knowledge**

This study delved into digitalisation and VAT compliance by SMEs in Embakasi Central Sub-County in Kenya. It has made distinctive contribution to general tax theories and models. Moreover, the results pertinently add to knowledge on determinants of tax compliance by small taxpayers in developing countries. At the same time, the study presents vital information on tax compliance from individual and corporate SMEs' perspective, constructs of digitalisation of tax procedures and VAT compliance measurements. The study too has uniquely contributed to furtherance of policies and management practuces in the field of VAT compliance in Kenya.

#### **5.6 Suggestions for Further Research**

This study delved in elucidating on role of digitalization (online filing, electronic tax registers, digital payment systems and VAT automated assessment systems) on VAT compliance by small and medium enterprises in Embakasi Central Sub-County, further studies should be carried on different sub-counties to provide robust

conclusions on interdependence of the variables. Moreover, the study can be replicated in other tax bases such as income tax as this will offer more insights on global role of digitalization on tax compliance in Kenya. Further studies should also be conducted to investigate the effect of other factors such as Taxpayer behavioral tendencies on tax revenue performance.

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## APPENDICES

### Appendix I: Letter of Introduction

Cleveland Apollo

Nairobi.

16<sup>th</sup> May 2022

Dear Respondent,

#### **RE: Request to Participate in a Study and Data Collection**

I hope this letter finds you well.

My name is Cleveland Apollo, pursuing a Master's degree in tax administration offered by Kenya Revenue School of Revenue Administration (KESRA) in collaboration with Moi University. I am undertaking a research on "EFFECT OF DIGITALIZATION ON VALUE ADDED TAX COMPLIANCE AMONG SMALL AND MEDIUM ENTREPRISES IN EMBAKASI CENTRAL SUBCOUNTY, KENYA"

This letter is to request you to participate in the study by filling the questionnaire. I pledge to you that the information gathered is for academic use only and that I will uphold confidentiality during and after the study.

Kind Regards,

Cleveland Apollo.



## Appendix II: Questionnaire

You are requested to participate in this study by filling this questionnaire. Kindly fill by ticking (✓) in line with your agreement to the statement or questions. All data and information is for academic use only.

### SECTION A: GENERAL INFORMATION

1. Gender :

Male ( )

Female ( )

2. Age:

Below 30 years ( )

31-40 years ( )

41-50 years ( )

51-60 years ( )

3. Education level

Primary level ( )

Diploma level ( )

Bachelor degree ( )

4. Time in Business

Below 5 years ( )

5-10 years ( )

11-15 years ( )

Above 15 years ( )

**SECTION B:****ONLINE FILING PROCEDURE**

Question 8 has several statements relating online filing procedure and Value Added Tax compliance. Kindly rate them on a scale of 1 to 5 where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
My business File data using itax-VAT template is faster than use of manual returns					
I find Uploading VAT returns time saving					
I find Online VAT filing is cost effective					
Correcting errors on VAT returns is not tedious					
Amending VAT returns is faster					
Accounting reports necessary for VAT are compatible with my systems reports					

### **ELECTRONIC TAX REGISTERS**

The following are statements relating electronic tax registers and Value Added Tax compliance. Kindly rate on a scale of 1 to 5, where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Booking transactions on ETR machine is fast					
Retrieval of VAT reports is simple					
ETRs have increased correctness of VAT returns					
ETRs machines are affordable					

### **DIGITAL PAYMENT SYSTEMS**

This part contains statements that relate digital payment systems and Value Added Tax compliance. Kindly rate on a scale of 1 to 5 where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Digital systems of payment slip is fast					
Mobile payment of taxes is cost effective					
Electronic systems of bills to taxpayers is effective					
Payments of taxes through banks is cost and time efficient.					

### VALUE ADDED TAX AUTOMATED ASSESSMENT SYSTEM

This following statements relates Value Added Tax Automated assessment system and Value Added Tax compliance Kindly rate on a scale of 1 to 5 where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

	1	2	3	4	5
Matching of Value Added tax automated system (VAA) does not allow falsification of invoices' amounts.					
Verification of tax invoices by tax officials makes us declare tax information correctly.					
VAA system detects inconsistencies in invoices and this leaves no room for manipulating purchases invoices					
Value added tax automated assessment has reduced filing of fictitious input (purchases)					

### VALUE ADDED TAX COMPLIANCE

The following statements measures Value Added Tax compliance. Kindly rate on a scale of 1 to 5 where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

	1	2	3	4	5
We file VAT returns in time as required by law					
Our business pays Value Added Tax in time as required by law					
Our business remits value added taxes correctly as required by VAT regulations					
Our business keeps Value Added Tax records and documents as stipulated by the law					

-The End-

**Appendix III: List of Small and Medium Enterprises in Embakasi Central Sub-County**

<b>No</b>	<b>PIN</b>	<b>Name</b>	<b>Tax Obligation</b>
1	P000594630S	Mukaa Trading Company Limited	Value Added Tax (VAT)
2	P000595396N	Masai Store Limited	Value Added Tax (VAT)
3	P000599389W	Mboga Tuu Limited	Value Added Tax (VAT)
4	P000606199J	Eastern Flour Mills Limited	Value Added Tax (VAT)
5	P000608380E	Metoxide Africa Limited	Value Added Tax (VAT)
6	P000622691Y	Tayabali Nanabhai And Sons	Value Added Tax (VAT)
7	P000622975B	Sunderji Auto Spares	Value Added Tax (VAT)
8	P000623084V	Machakos Spares & Service Station	Value Added Tax (VAT)
9	P000623509N	Kathuli Timber And Hardwares Limited	Value Added Tax (VAT)
10	P000623964A	East Kenya Suppliers and Spares Limited	Value Added Tax (VAT)
11	P000631855S	Magadi Sav & Cr Cs Ltd.	Value Added Tax (VAT)
12	P000633911J	Kitui Vyumbo Stores	Value Added Tax (VAT)
13	P000633916Z	Dawoodbhai Yusufali And Sons	Value Added Tax (VAT)
14	P051095303R	Lex Mercatoria Limited	Value Added Tax (VAT)
15	P051096652H	Supreme Ballast Limited	Value Added Tax (VAT)
16	P051097696V	Eastlands Commercial Enterprises (Wamunyu)	Value Added Tax (VAT)
17	P051099887A	Tortilis Camp Limited	Value Added Tax (VAT)
18	P051101075J	Johari Investments Limited	Value Added Tax (VAT)
19	P051109298N	Ikuuni Hotel Limited	Value Added Tax (VAT)
20	P051110932H	Wananchi Timber And Hardware Limited	Value Added Tax (VAT)
21	P051114813I	Lenana Pharmaceuticals Limited	Value Added Tax (VAT)
22	P051115540P	Luca Safari Limited	Value Added Tax (VAT)
23	P051116633T	Kilalinda Limited	Value Added Tax (VAT)
24	P051117323Q	Decent Developers Limited	Value Added Tax (VAT)
25	P051117923W	Chairman Holdings Limited	Value Added Tax (VAT)

26	P051118212L	Seven Stars Limited	Value (VAT)	Added	Tax
27	P051119435Z	Kitui Household Store Limited	Value (VAT)	Added	Tax
28	P051119466I	Vista Windows Limited	Value (VAT)	Added	Tax
29	P051124199D	OI Donyo Wuas Limited	Value (VAT)	Added	Tax
30	P051128564G	E. Kati Hauliers Limited	Value (VAT)	Added	Tax
31	P051128873K	Jordan Hospital Limited	Value (VAT)	Added	Tax
32	P051129925D	Saracota Enterprises Limited	Value (VAT)	Added	Tax
33	P051137006Z	Macson Enterprises	Value (VAT)	Added	Tax
34	P051137310K	Kitengela Hot Glass Limited	Value (VAT)	Added	Tax
35	P051137352Z	Sun Yu Enterprises Limited	Value (VAT)	Added	Tax
36	P051140096T	Makueni Ginneries Limited	Value (VAT)	Added	Tax
37	P051140819J	Lotex Stores	Value (VAT)	Added	Tax
38	P051143033I	Danvin Distributors (K) Limited	Value (VAT)	Added	Tax
39	P051143597F	Avtech Systems Limited	Value (VAT)	Added	Tax
40	P051143802J	Yumbi Agencies Limited	Value (VAT)	Added	Tax
41	P051145190A	Ebrahims Mohamed Kassam General	Value (VAT)	Added	Tax
42	P051145326S	Wilson Oasis General Merchant & Contractor	Value (VAT)	Added	Tax
43	P051146320Z	Rida Holdings Limited	Value (VAT)	Added	Tax
44	P051146509V	Priska Engineering And Construction	Value (VAT)	Added	Tax
45	P051147232T	Leos Speciality Products Limited	Value (VAT)	Added	Tax
46	P051149033W	Mbitini General Stores	Value (VAT)	Added	Tax
47	P051149862L	Nzambani Hardware	Value (VAT)	Added	Tax
48	P051149874P	Rajani Engineering Works Limited	Value (VAT)	Added	Tax
49	P051151395V	Ramtech Foto Limited	Value (VAT)	Added	Tax
50	P051151513A	Snacks Palace Limited	Value (VAT)	Added	Tax
51	P051154203H	Kawinzi Enterprises	Value (VAT)	Added	Tax
52	P051160664T	Bajaber Trucking Limited	Value (VAT)	Added	Tax
53	P051161270M	Simercor Bookshop Limited	Value (VAT)	Added	Tax

54	P051162885E	Toben Engineering Services	Value (VAT)	Added	Tax
55	P051164951Z	Four Season's Limited	Value (VAT)	Added	Tax
56	P051167267I	Kenya Aa Electric Crane Company	Value (VAT)	Added	Tax
57	P051170016B	Kakim Hardware And Contractors	Value (VAT)	Added	Tax
58	P051171305D	Kalka Flowers Limited	Value (VAT)	Added	Tax
59	P051174325Q	Zinco Kenya Limited	Value (VAT)	Added	Tax
60	P051175577K	Colmatt Engineering Limited	Value (VAT)	Added	Tax
61	P051176193I	Ngurumani Holdings Limited	Value (VAT)	Added	Tax
62	P051179812Z	Kinatwa Sacco Society Ltd.	Value (VAT)	Added	Tax
63	P051180543N	Milimani Subterranean Springs Limited	Value (VAT)	Added	Tax
64	P051181351M	Maruti Auto Spares	Value (VAT)	Added	Tax
65	P051183783F	At Your Service Limited	Value (VAT)	Added	Tax
66	P051185439C	Muthiani Transporters	Value (VAT)	Added	Tax
67	P051186151Z	Kathumo Supermarket Ltd	Value (VAT)	Added	Tax
68	P051187003Q	Miambani Valley General Contractors Limited	Value (VAT)	Added	Tax
69	P051187004R	Mountain View General Contractors Limited	Value (VAT)	Added	Tax
70	A000098711J	Benson Mbuvi Kathenge	Value (VAT)	Added	Tax
71	A000098772B	Kata Matemua Kithyo	Value (VAT)	Added	Tax
72	A000100255T	Michael Chester Kamolo Wambua	Value (VAT)	Added	Tax
73	A000103628Y	Richard Stephen Kimanzi	Value (VAT)	Added	Tax
74	A000107034A	Stephen Wamai Ndarathi	Value (VAT)	Added	Tax
75	A000118899E	Philip Kivuva Mulwa	Value (VAT)	Added	Tax
76	A000135202T	Joseph Ndungu Kimani	Value (VAT)	Added	Tax
77	A000153041U	Mary Ndunge Musyoka	Value (VAT)	Added	Tax
78	A000165472O	Benjamin Nguthu Kimanhi	Value (VAT)	Added	Tax
79	A000166089V	Godfrey Kariuki Kimani	Value (VAT)	Added	Tax
80	A000192641C	Edwin Kinyua Musyoki	Value (VAT)	Added	Tax
81	A000193064H	Boniface Muthama Nthenge	Value (VAT)	Added	Tax



82	A000193107X	Jonah Malika Mueke	Value (VAT)	Added	Tax
83	A000193117W	James Aaron Makau	Value (VAT)	Added	Tax
84	A000193441C	Paul Maithya Kilembwa	Value (VAT)	Added	Tax
85	A000195058P	Peter Bodo Okal	Value (VAT)	Added	Tax
86	A000195096V	Robert Mutyango Musau	Value (VAT)	Added	Tax
87	A000219037N	Sailas Macharia Ngamau	Value (VAT)	Added	Tax
88	A000227132G	Benjamin Deoni Musau	Value (VAT)	Added	Tax
89	A000231297K	Riyaz Dawoodbhai Yusufali	Value (VAT)	Added	Tax
90	A000238264U	Patrick Mukuno Kisilu	Value (VAT)	Added	Tax
91	A001091521U	Charles Kyallo Kingoto	Value (VAT)	Added	Tax
92	A001092602X	Francis Manthi Masika	Value (VAT)	Added	Tax
93	A001106133Z	Bernard Gichuki Ndirangu	Value (VAT)	Added	Tax
94	A001112717T	Sadulla Abdulkarim Musa	Value (VAT)	Added	Tax
95	A001121197E	John Mulwa Mwendwa	Value (VAT)	Added	Tax
96	A001123565H	Francis Kuria Chege	Value (VAT)	Added	Tax
97	A001130685H	Ignatius Makau Mutisya	Value (VAT)	Added	Tax
98	A001139165S	Peter Kyalo Mulwa	Value (VAT)	Added	Tax
99	A001143313Q	Joseph Osoi Ole Sompiroi	Value (VAT)	Added	Tax
1	A001181835B	Titus Pius Kimeu Nyange	Value (VAT)	Added	Tax
101	A001184200T	Gabriel Kamau Kiambuthi	Value (VAT)	Added	Tax
102	A001193447J	Robert Muinde Muithya	Value (VAT)	Added	Tax
103	A001199801N	Patrick Mutinda Sila	Value (VAT)	Added	Tax
104	A001203838I	Quentin Wambua Mutisya	Value (VAT)	Added	Tax
105	A001213700U	Duncan Mumo Mwilu	Value (VAT)	Added	Tax
106	A001214460H	Francis Munuve Kalili	Value (VAT)	Added	Tax
107	A001214960M	Peter Mutuku Mutua	Value (VAT)	Added	Tax
108	A001216380Q	Anderson Muema Ngolota	Value (VAT)	Added	Tax
109	A001225965W	Peter Mulei Ngumwa	Value (VAT)	Added	Tax

110	A001230535Z	Isaac Mulwa Muthiani	Value (VAT)	Added	Tax
111	A001231734Z	Daniel Sapati Mopel	Value (VAT)	Added	Tax
112	A001236116D	Winnie Mwanzia	Value (VAT)	Added	Tax
113	A001236727P	Stanley Munyua Mboshi	Value (VAT)	Added	Tax
114	A001249936Z	Charles Kiilu Mumo	Value (VAT)	Added	Tax
115	A001257865C	Mafatbhai Bhikhabhai Parmar	Value (VAT)	Added	Tax
116	A001259700M	Isaac Naisankau Kanyoro	Value (VAT)	Added	Tax
117	A001261563H	Anthony Mutisya Kimani	Value (VAT)	Added	Tax
118	A001263841J	Stephen Waigwa Murage	Value (VAT)	Added	Tax
119	A001270911W	Carol Mbete Mumo	Value (VAT)	Added	Tax
120	A001271972N	Sun Mbatia Maina	Value (VAT)	Added	Tax
121	A001288940X	Wilfred Mutuku Mutwota	Value (VAT)	Added	Tax
122	A001307155Q	Simon Mutuku Kamende	Value (VAT)	Added	Tax
123	A001309715N	Dickson Kasomo Kisoo	Value (VAT)	Added	Tax
124	A001336137N	Christopher Muinduko Nthenge	Value (VAT)	Added	Tax
125	A001336204F	Albanus Paul Mutisya	Value (VAT)	Added	Tax
126	A001356430L	Charles Mwangi Kamau	Value (VAT)	Added	Tax
127	A001360917D	Raphael Kimeu Kabaya	Value (VAT)	Added	Tax
128	A001362125C	George Waweru Kimani	Value (VAT)	Added	Tax
129	A001363618H	Abdulkadir Kivuva Kalwe	Value (VAT)	Added	Tax

## Appendix IV: Field Authorization Letter



Kenya School of Revenue  
Administration



KENYA REVENUE  
AUTHORITY

ISO 9001:2015 CERTIFIED

PUBLIC

REF: KESRA/NBI/036

17<sup>th</sup> May 2022

TO: WHOM IT MAY CONCERN

**RE: REQUEST FOR RESEARCH DATA**

**CLEVELAND OCHIENG APOLLO - REG. NO.: KESRA105/0024/2020**

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: "EFFECT OF DIGITALISATION ON VALUE ADDED TAX COMPLIANCE AMONG SMALL AND MEDIUM ENTERPRISES IN EMBAKASI CENTRAL SUB-COUNTY, NAIROBI."

The purpose of this letter is to request your good office to assist the above student with the information 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




**Tulipe Ushuru, Tujitegemee!**

### Appendix V: Research Permit

REPUBLIC OF KENYA  
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: 797487  
Date of Issue: 24/May/2022

### RESEARCH LICENSE




This is to Certify that **Mr. CLEVELAND OCHIENG APOLLO** of Kenya School of Revenue Administration, has been licensed to conduct research in Nairobi on the topic: **EFFECT OF DIGITALIZATION ON VALUE ADDED TAX COMPLIANCE AMONG SMALL AND MEDIUM ENTERPRISES IN EMBAKASI CENTRAL SUB-COUNTY, KENYA** for the period ending : **24/May/2023**.

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## Appendix VI: Plagiarism Report

### EFFECT OF DIGITALIZATION ON VALUE ADDED TAX COMPLIANCE AMONG SMALL AND MEDIUM ENTREPRISES IN EMBAKASI CENTRAL SUBCOUNTY, NAIROBI COUNTY, KENYA

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