TECHNOLOGICAL TAX REFORMS AND TAX COMPLIANCE AMONG SMALL AND MEDIUM ENTERPRISES IN NYERI COUNTY

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ABSTRACT

Kenya has had to contend with a consistent imbalance between government revenue and expenditure resulting in large and chronic fiscal deficits. High level of non-compliance by SMEs has continued to deprive the economy the much needed revenue to fill the persistent tax gap. Through a wide range of reforms, the government of Kenya has tried to include SMEs into the tax net. However, compliance among SMEs still remains low. This study sought after determining the effect of technological tax reforms on compliance among SMEs in Nyeri County, Kenya. The study was premised on the Fiscal Exchange Theory, the Economic Deterrence Theory and the Optimal Theory of Taxation. A descriptive survey research design was adopted. The study considered a ten year period from 2009/2010 to 2018/2019 when a wide range of tax reforms had been instituted by the revenue authority with a view to address numerous compliance shortcomings. The target population was made up of 891 SMEs registered and licensed by the County Government of Nyeri. Proportionate stratified random sampling technique was applied to select a sample of 95 respondents who comprised of SME owners. The study used primary and secondary data. A semi structured questionnaire was used to collect primary data while secondary data was gathered from the SMEs books of accounts and records as well as data from Kenya Revenue Authority. Validity of the instrument was tested through expert opinion and pretesting. Reliability was tested using Cronbach Alpha Reliability analysis. Data was analysed using descriptive and inferential statistics. The multiple regression analysis results provided evidence that technological tax reforms (β=0.890, p=0.001) has a positive and statistically significant effect on tax compliance. The results of Pearson correlation analysis indicated that technological tax reforms (r=0.704, p=0.011) has a strong positive and statistically significant relationship with tax compliance. The study recommends enhanced adoption and implementation of tax reforms, and particularly the technological tax reforms as the reforms were effective in improving tax compliance levels. The study recommends enhanced taxpayer education on matters related to I tax. The study further recommends adoption of simpler payment options such as Mpesa, Airtel Money and other mobile banking innovations.

Key Words: **Technological Tax Reforms, Tax Compliance, Small and Medium Enterprises.**

INTRODUCTION

According to Alstads, Johannesen and Zucman (2019), poor tax compliance has remained a headache for economies around the world, and especially so among small and medium enterprises, which are key players to growth. Schneider (2019) presents tax compliance as the extent to which the tax payers observe the established tax rules by fulfilling obligations such as income declaration, filing of returns, and paying assessment due in time. On the converse,

tax evasion constitutes failure to follow the tax commitments by way of underpayment of tax or illegal non-payment of tax, (Musau, 2015). Through tax evasion, an individual enlisted and required to pay tax deliberately abstains from remitting the true amounts due. In the year 2011, tax evasion cost the global economy approximately 5.1 percent of their GDP. Tax evasion in Europe denied them about 8 percent of their GDP (Rile, 2011).

Rile (2011) further highlights that the cost of tax evasion in South America and North America stood at 2 percent and 10 percent respectively. In the African continent, tax evasion costs the economies dearly. Just to illustrate, South Africa has a population that is three times smaller than Nigeria, it collects $57 billion in tax revenues which is more than double Nigeria's collection of $27.5 billion, (Fiawoo, 2018). In Kenya, although revenue collection has been improving, tax evasion has continued to make the authority miss the tax collection targets. In the year 2018, the Kenya Revenue Authority collected Sh1.58 trillion against the National Treasury's target of Sh1.8 trillion (KRA, 2018).

According to Kenya Revenue Authority (2018), Kenya has had to contend with a consistent imbalance between the government revenue and expenditure resulting in large and chronic fiscal deficits. The revenue raised through taxation has been below targets and also unable to meet projected government expenditures. This has forced the government to seek other deficit financing options like foreign borrowing or additional foreign financing which have had great negative ramifications on the economy. This has continued to negatively impact on interest rates, the balance of payments and the external value of the Kenyan currency.

Kenyan Government has developed a number of strategies aimed at improving the general level of effectiveness in the way it collected taxes from its citizenry (Waithera, 2018). Nonetheless, like other developing economies, the Kenyan tax revenue structure is yet to achieve desired productivity. Almost always, the growth in revenue has been largely unsuccessful in catching up with government spending pressures. This condition has led to the Kenyan government facing disparities in supply and demand of budgetary resources to the public. Then the countries have the obligation of reforming structures for taxes with the aim of realizing adequate revenue, equity, fairness, economic efficiency and simplicity, (Mabugu & Simbanegavi, 2015).

Mellon (2016) notes that tax Compliance refers to the degree to which the taxpayer observes (or fails to observe) the tax rules of his country. This may include, but not limited to, declaration of income, tax returns filing, and timely payment of the tax dues. In other words, tax compliance is presented as the extent to which a taxpayer agrees to all tax rules and regulations that are put in place. Rather than being a voluntary payment or donation, tax is a compulsory contribution anchored upon legislation and enforced by the government. Tax payers are more prone to tax non-compliance where the systems are complex (Schneider, 2019).

Okech and Mburu (2011) divided taxes into two namely one related to administration and the other related to compliance technicalities. Compliance in relation to administrations is also

known as reporting compliance which is mainly concerned with procedural adherence to laid down laws in relation to filing of tax returns. It is also called compliance with laid down procedures. It basically concentrates on adherence to rules governing administration of taxes. The second category relates to complying with technical provisions of legal technicalities especially in relation to computation of taxes due and going ahead to meet the regulations related to making of payments. Nonetheless, Schneider (2019), adds policy compliance as the third dimension of tax compliance. Policy compliance shows the level to which the laid out tax process or guidelines are adhered to by taxpayers.

Tax compliance is a multifaceted measure that can theoretically be defined in considering three discrete types. These types are adhering to provisions related to filing, those related to reporting and the ones related to making payment as and when due (Maseko 2014). Compliance of tax is also regarded as the readiness of individuals including corporate to adhere to provisions of the law in relation to filing, reporting and payment of taxes due without waiting to be compelled by law enforcers to do what they are supposed to do as far as taxes are concerned (Mellon, 2016). Kirchler and Wahl (2010) identified three distinct forms of compliance as: committed, creative and capitulative. Creative related to a taxpayer act done with the aim of bringing down or evading the amounts due in tax by redefining income together with the expenditures made to raise the income within the provisions of the law. Committed compliance on the other hand relates to the willingness of an individual taxpayer to discharge tax obligations without complaining. capitulative compliance is concerned with the observance of tax obligations albeit reluctantly (Devos, 2014).

Tax reforms involve the process of redefining the manner of tax collection or management by regimes and usually seeks to enhance overall tax collection by simplifying the way taxpayers pay. Tax reforms have been pursued in Kenya with a view to make sure that the tax systems is efficient and effective in achieving revenue mobilization and reducing persistent fiscal imbalances. The key tax reforms pursued in Kenya include administrative tax reforms, policy tax reforms and technological tax reforms (Mutuku, 2015).

Technological tax reforms are the improvements that take advantage of technological advancements to improve the effectiveness and efficiency of tax system (Biørn, 2017). Among the technological reforms implemented by Kenya Revenue Authority include introduction of I-Tax system introduced in 2011. I-tax system was developed to address the inefficiencies of the Integrated Tax Management System (ITMS) (KRA, 2015). Other notable technological improvements include the implementation of the Electronic Tax Register (ETRs) implemented from 2004 (KRA 2016).

The administrative tax reforms address the implementation framework or simply the ‘how to do it’ aspect of a tax system. Among the administrative tax reforms implemented by tax authorities include development of Self-assessment Systems (SAS) which aid tax payers to remit taxes devoid of coercion from agents. To achieve this, tax payers are issued with unique numbers Personal which help in identifying them to facilitate easy monitoring and tracking. The tax authorities also plan and implement tax clinics and seminars to empower people with

tax payer education. Other dimensions of administrative reforms include merger of various tax department such as VAT and Income tax departments to enhance organizational efficiency (Mutuku, 2015).

Policy tax reforms entail development of general principles, guidelines and procedures of a tax system (Keen & Slemrod, 2017). Tax policies involves a government's choice as to which taxes to levy, the amounts, and on whom. The policies have both macroeconomic aspects and microeconomic aspects. The reforms aim at providing a wholesome approach to tax issues. Tax compliance clearance as a condition for government services is just an example of policy reforms introduced by revenue authority. Other policy reforms include the Simba system that has modernized tax management at customs department to international conventional standards (KRA, 2015).

Despite Kenya achieving independence in 1963, existing tax system from the the British colonial government continued to be applied (KIPPRA, 2013). This happened until early 1970s when changes in policy and administrative issues on tax were commenced. According to KIPPRA (2014), the challenge with revenue mobilization came with the energy crisis of the 1970s and ignited the demand for tax reforms to upscale revenue mobilization. Reforms in tax system involves the practice of redefining the way of taxes collection or tax management by the state.

According to African Development Bank Group (2010), solid tax reforms started with the income tax act of 1973. Later, more measures would be undertaken to widening the tax base through introduction of sales tax in 1973 and then capital gains tax in 1975. The capital gains tax would later be abandoned in 1984. Three decades later, it was re-introduced and became applicable from 1st Jan 2015. However, tax reforms in Kenya were elaborately introduced though the tax modernization programme (TMP) in the late 1980s.

The quest for reforms was ignited by the need for a tax system that could be sustained and could generate adequate revenues to meet growing public expenditure demands in addition to solve the inequalities associated with old system (Musau, 2015). The tax reforms sought to enhance tax administration, increase tax productivity and control economic distortions brought about by taxes. Besides aiding the government in meeting their expenditure projections, tax reforms in Kenya are also designed with a motive to check inequalities, facilitate redistribution of wealth for the common good, control cyclical fluctuations, enhance prince stability, boost the economy and reduce unemployment (Ngotho & Kerongo, 2014).

Statement of the Problem

Despite establishment of statutory provisions such introduction of turnover tax or presumptive tax targeting the informal sector, the level of tax compliance among SMEs Kenya continue to be below projections. The performance of the turnover tax which targets SMEs has on average remained below 50% with 2,890 SMEs registered for a turnover tax against a target of 6,928 between 2009 and 2010. Concerned with the poor performance of

the turnover tax, the presumptive tax was introduced hoping to net 15 per cent tax on the value of business licenses that targeted an estimated 2.7 million informal traders. Nevertheless, the presumptive tax performed so poorly that the government reverted to turnover tax effective 1st Jan. 2019 to address revenue gaps. It is clear that despite their significance to the economy, accounting for 98 percent of business in Kenya, and 34.3 percent contribution to GDP, SMEs' compliance has remained the biggest headache for tax authorities. It remains unclear whether the wide range of technological tax reforms introduced have helped in improving the state of compliance among SMEs.

Ondieki (2017) studied the effect of i-tax system on revenue collection in Kenya. Results indicated that revenue collection almost doubled upon implementation of the i-tax system. A positive correlation was also discovered between use of i-tax and revenue collection. The study presents conceptual gaps in that there are other technological reforms at the revenue authority, other than I-tax system that could be incorporated in to research for deeper and more meaningful understanding of how technological reforms impact on revenue collection and compliance in general. Waithera (2018) researched on the tax compliance challenges in small and medium enterprises (SMEs) in Kenya. The results highlighted complexity of tax laws, scanty tax knowledge and high compliance costs as some key challenges hindering SMEs compliance. Empirically, the study presents gaps as it failed to make an attempt to link the reforms implemented against the background of the challenges highlighted to the level of SMEs' compliance.

Kim and Kim (2018) studied tax reform and tax compliance in Tanzania and Uganda. The study used data from the two countries to establish and compare the extent to which tax compliance was influenced by the level of tax reforms. Results indicated that technological tax reforms positively influence the level of tax compliance. Inasius (2019) considered the factors that affect the level of SMEs' tax compliance through empirical evidence from Indonesia. The study entailed data collection through a survey in Jakarta, the capital city of Indonesia. Technological tax reforms were found to have a substantial positive impact on the level of tax compliance. The studies presents gaps as studies on the subject matter are over concentrated in foreign setups leaving scanty empirical evidence locally. Thus, to address the aforementioned gaps and enrich knowledge on the subject matter, the current study focused on technological tax reforms and their effect on compliance among enterprises with less than 50 employees located within Nyeri County, Kenya.

Objective of the study

The study sought to assess the effect of technological tax reforms on tax compliance among SMEs in Nyeri County, Kenya.

Research Question

The study sought to test the following null hypothesis.

H01: There is no statistically significant effect of technological tax reforms on tax compliance among SMEs in Nyeri County, Kenya.

LITERATURE REVIEW

This study was guided by three key theories that have attempted to explain tax compliance in light of tax reforms. These are economic deterrence theory, fiscal exchange theory and the optimal theory of taxation.

Economic Deterrence Theory

The economic deterrence theory, Founded by Becker (1968), asserts that the behaviors of taxpayers in regard to tax compliance or noncompliance is influenced by policy factors like tax rate which determines the profits of evading tax, and the probability of its detecting and consequences associated with fraud which determines its cost. The implication is that if detection is highly probable and punishments or consequences are severe, there will be few tax evaders. The deterrence theory has its foundation on dealing with the challenges of tax compliance. According to Ortega and Sanguinetti (2013), the theory seeks to explain an enforcement mechanism which would best appeal to the tax payer's tax morality.

The theorists assert that the mind-set of tax payers while evading tax is the concept of maximizing the expected usefulness of the tax evasion gamble. Alm and El-Ganainy (2013) states that the deterrence theory is founded on weighting the benefits of successfully evading tax in comparison with the risk of sanctions if caught. When a taxpayer is involved in tax evasion, they wilfully and consciously apply unlawful methods to avoid complying with tax laws. They may do so by failing to report income earned or formulating tax deductions or fraudulently employing other illegal means to reduce or extinguish the tax liability (Alstadsæter et al., 2018).

According to Pratt et al., (2006), deterrence theories commonly foretell the patterns of tax compliance that is based specially on the ability to pay approach. The revenues and expenditures of the government are treated discretely and taxes are based on taxpayer's payment capability. The achievement of deterrence can be done through many approaches which can persuade or punish the taxpayer. The theorists presents a case for tax reforms as way of enhancing compliance. To yield high compliance, the reforms must be seen by tax payers to be enhancing the equity and fairness of the taxation system (Knoll et al., 2017). It should as well reduce and control the costs of compliance while increasing the cost associated with noncompliance. The deterrence theory therefore supports a case for technological tax reforms as a way of improving the state of tax compliance.

Fiscal Exchange Theory

This theory is associated with Alm, Jackson and McKee (1993) and suggests that voluntary tax compliance is usually affected by policy measures that dictate state expenditures and the

manner in which the expenditure decisions are made. Bello and Danjuma (2014) state that the existence of expenditures by the government can motivate tax compliance and can also increase it by providing the goods that citizens demand effectively and in a more accessible way.

As viewed by McKerchar and Evans (2009), this school of knowledge has evolved from models related to economic deterrence and social psychology and has its foundation on the presence of social, relational or the psychological contract between the tax payers and their government. The theorists assert that the primary determinant of tax compliance is the existence of expenditures by elected governments which principally motivate individuals to comply with tax compliance. Thus taxpayers will evaluate regularly the public services (quid pro quo) that they get in return for paying their taxes. As such, the provision of goods and services should be a relationship that is contractual between the state and its tax payers.

Bodea and LeBas (2013) therefore asserts that the existence of benefits is likely to boost the chances of compliance among taxpayers without being coerced. Notwithstanding the fact that most taxpayers may not be in a position to accurately assess the exact value of the benefits they get as a result of payment of taxes, they do create general impressions together with attitudes in relation to their own and of fellow traders terms of business with their government (Hansen, 2018). As such, if taxpayers perceive that a tax system is unjust, then their levels of compliance will negatively affected. The fiscal exchange theory was instrumental to the current analysis as it suggests that it is the policy aspect of reforms that are likely to influence the compliance levels among business owners.

Optimal Theory of Taxation

This theory was first associated with Ramsey (1927) and Mirrlees (1976), although it has been developed further by Mankiw, Weinzierl, and Yagan (2009) as the study of planning and implementing a tax system that maximizes a social welfare purpose subject to underlying economic constraints. The social welfare function applied is that of individuals' utilities. Thus the tax system is chosen to maximize the sum of individual utilities. Tax revenue is expected to cushion public goods and other government services to the tax payer, and equalize the essential services from rich to poor citizens (Saez & Stantcheva, 2018).

Goldin (2015) however observes that most taxes change individual behavior, because the activity that was being taxed becomes relatively less desirable by the taxpayers. The problem of optimization comprises of minimizing the distortions from the efficient state, caused by tax compliance, while achieving desired levels of redistribution and the provision of public goods and services (Tuomala, 2016). The theorists assert that a prudent taxation system is proportionate to incomes or abilities to pay. It should also be certain rather than arbitrary and should be payable at all times and in ways that are convenient to the taxpayers. Finally, the taxation system should be cheap to administer and collect (Heathcote & Tsujiyama, 2015). Thus, the theorists suggest that technological reforms are necessary in order to achieve the desired criteria of a prudent taxation system.

Empirical Literature Review

Ondieki (2017) studied the effect of i-tax system on collection of revenues in Kenya. Results indicated that revenue collection almost doubled upon implementation of the I-tax system. The study was comparative in nature and comprised of two time classifications; period before i-tax and period after i-tax. A descriptive survey research approach was used while secondary data was used for study purposes. A positive correlation was also discovered between use of I tax and revenue collection. The study presented conceptual gaps in that there are other technological reforms at the revenue authority, other than I-tax system that could be incorporated in to research for deeper and more meaningful understanding of how technological reforms impact on revenue collection and compliance in general.

Musa and Ibrahim (2016) studied Administrative and technological tax reforms and small corporate tax compliance behavior In Nigeria. On administrative reforms study dwells on tax structure variables namely tax rate, tax audit and penalties and how they influenced the level of compliance among small companies. On technological reforms, the study assess the indirect effects of compliance of tax costs on the behavior of small corporate tax compliance. Results show that both administrative and technological tax reforms have a positive impact on small corporate tax compliance. In context, gaps are clear on need to have the study done locally.

The study by Livoi (2017) was interested with determination of the effect of reforms in relation to tax carried out by KRA on corporate tax compliance. The study assessed the effect of technological tax reforms, policy tax reforms and administrative tax reforms on compliance among corporates at Kenya Revenue Authority. A descriptive survey research design was applied. The study carried out a census of staff working at the domestic tax department of Kenya Revenue Authority. Data analysis relied on both descriptive and inferential statistics. The results indicated a very weak inverse relationship between technological tax reforms and corporate tax compliance at KRA. Regression analysis results further confirmed that technological tax reforms impacted negatively on compliance levels among corporates.

The effects of tax reforms on compliance with Turnover Tax amongst SMEs in Nairobi South was carried out by Kanyinga (2016). Through a descriptive survey research design targeting a population of 1240 SMEs registered by KRA. He did the analysis by applying the logistic regression analysis. The study established that the level of noncompliance by SMEs was at 40 percent. It was further indicated that more than three quarters of SMEs used the online platform to file their tax returns online. A strong and positive relationship was ascertained to exist between technological tax reforms and tax compliance. Conceptually, gaps emerge on need to consider other dimensions of technological tax reforms besides online filing of tax.

Online tax filing compliance among SMEs operating within Kibwezi Sub-County, Kenya, was researched by Kiring'a et al. (2017). Through a descriptive survey research design

targeting 1,800 SMEs, the results indicated that the online system of tax filing positively influence tax compliance in Medium Scale Enterprises. Conceptual gaps emerge as the study considered only a narrow perspective of technological reforms at the revenue authority. It is imperative to consider other aspects of technological reforms besides online tax filling.

Ngigi (2015) studied Tax Management System and Compliance by SMEs operating within the Central Business District of Nairobi City County. A descriptive survey research design was used to study a sample of one hundred and seventy-three SMEs. He use inferential statistics in the analysis. Particularly, he applied the multiple linear regression in order to effectively explain the effect of Integrated Tax Management System on Tax Compliance. Results demonstrated that tax compliance by SMEs was highly influenced by the system. In concept, the study represents gaps on need to broaden the assessment to cover more parameters under technological reforms besides the Integrated Tax Management System.

Research Methodology

A descriptive survey research design was adopted to help get information which would respond to the hypotheses. Jackson (2015) posits that descriptive survey research design explains what, where, how and when of a given phenomenon. It aims at establishing the existing conditions regarding certain factors of interest to a research undertaking and report them as they are. A descriptive survey research allows the researcher to go further to discover and report already existing associations between variables without having to alter anything in that environment (Mugenda & Mugenda (2003). The justification for adoption of this design was fact that the current study sought to determine conditions as they were and explain relations as they existed regarding technological tax reforms and tax compliance among SMEs in Nyeri County.

Target Population

Creswell and Creswell (2017) define target population to be the complete set of elements or objects that have the similar recognizable characteristics. A target population consists of the whole group or units which the study is planning to research on. The target population comprised of 891 SMEs spread across different industries in Nyeri County, Kenya as per the list obtained from the County Government of Nyeri for those that have gotten trading licenses as at June 2019. The study targeted business owners identified purposively or through judgmental sampling.

Sampling Design

Sampling design entails the technique applied by a researcher to draw a sample from the target population (Bell, Bryman, & Harley, 2018). The study applied the formula that was proposed by by Trek (2015) to compute sample size as the population was known;

n = N/ 1+N (e) 2

Where: n- Sample Size

N-Population Size

e- Level of Precision at 90 percent Confidence level. Using the formula, the sample size was determined as follows; n = 891/ 1+841(0.1)2 = 94.69. The sample therefore consisted of 95 SMEs. Proportionate stratified random sampling technique was applied to select a sample from the target population. Kothari (2011) notes that the technique involved dividing the target population into small groups called strata to ensure that the sample obtained is representative. The following formula was applied by the study to obtain sample S= (Nh/N)*n

S=Sample size
Nh = Population size for stratum
N-Target population
n=Total Sample size.

Table 3.1: Target Respondents

No	SME segment	Target Population(N)	nh=(Nh/N)Xn	Sample size (for SMEs)
1	Manufacturing and Textiles	85	9.06	9
3	Health	97	10.34	10
2	Retail	84	8.96	9
4	Transport	91	9.70	10
6	Construction and Mining	17	1.81	2
5	Hospitality and Tourism	90	9.59	10
7	Financial Services	63	6.71	7
9	Marketing	85	9.06	9
8	Agriculture	89	9.48	9
11	Telecommunication and ICT	80	8.53	9
10	Energy	68	7.25	7
12	Education	42	4.48	4
	Total	**891**	**94.98**	**= 95**

Source: *Nyeri County Government (2018)*

Data Collection Instruments

An instrument is the tool used by a researcher to get raw data from the field (Mugenda & Mugenda, 2003). The study used a questionnaire that contained closed and open ended questions. Questionnaires are preferred because they have got the ability to arrange responses in a standardized manner while delivering more objective responses as (Mugenda & Mugenda, 2003) points out. Tests were done to evaluate and progress the validity.

Validity of the Research Instruments

Kothari (2011) states that validity is an indication that the data collection questionnaire measures exactly that which is was designed to. The study determined both construct and content validity status of the research instrument. Expert opinion and pretesting methods were applied for this end. The study sought expert opinion from the research supervisor because of his diverse knowledge in handling academic research in the area of taxation. Improvements were effected as per their advice gotten from the pilot. The pre testing targeted 5 SMEs in Nyeri County, Kenya which were selected randomly.

Reliability of Research Instrument

Reliability deals with consistency and ability of repeatability of the measurements that are acquired by administering the questionnaire. Measurements are considered solid, if the collecting instrument provides equivalent results if/when repeated as Kothari (2011) holds. The study applied the Cronbach's Alpha Reliability Analysis to effectively evaluate the level of continuously giving similar outcome if data is collected under similar circumstances. Gliem and Gliem (2003) gave a threshold of 0.70 as ideal and would reflect acceptable level of internal consistency.

Procedure of Data Collection

The researcher dropped the questionnaires at the respondents' desired location and collected them upon being informed that they had been filled. The method involves personally submission of the instrument to the respondents in person and then collecting the instrument back at a later date. According to Mugenda and Mugenda (2012), the method eliminates the problem of non-response owing to various study limitations. The researcher explained the importance of the research and give an assurance that any information disclosed will serve purely academic ends. Secondary data was collected from published and other documented reports available with the Kenya Revenue Authority which is the entity mandated to manage the national tax system. Secondary data was purely for tax compliance, which was the dependent variable.

Operationalization of Variables

Table 3.2 lists the study variables which include the dependent and independent variables. The operationalization captures the operational representation and the measurements used to estimate the variables. The measures included are the ones that have been validated by past researchers and theorists.

Table 1.2: Operationalization of the Variables

Type of Variable	Variable	Indicator	Measure	Measurement Scale
Dependent	Tax Compliance	Tax Registration	Proportion of SMEs Registered	Ratio/Interval

			For Tax.	
		Timely Payment of Tax Due	Tax Revenue from SMEs	
Independent	Administrative Tax Reforms	Tax Payer Education	Sensitization by tax authority/ stakeholders	Ordinal
		Level of Awareness	Extent to which SME owners understand tax issues.	
		Technical support	The extent to which KRA officers offered support on technical tax issues.	
		Decentralized Services	Proximity of tax collection sites to SMEs	
		Tax Payer Information Desks	Extent to which information desks are availed by authorities.	
Independent	Policy Tax Reforms	National Tax Laws	Extent to which new tax laws affected SMEs	Ordinal
		Simplicity of Tax Regime	Ease of comprehension and conformity to tax laws.	
		Fines and Penalties	Extent to which sanctions affected non complying SMEs.	
		Tax audit	Probability of tax audits being carried out.	
Independent	Technological Tax Reforms	• Technological Innovations	Extent to which new technology was adopted.	Ordinal
		• Cost of Use	Cost of using the	

			technological based platforms to comply.	
		• Training and Empowerment	SMEs understanding of how to use the tax technology.	

Source: Researcher (2019)

Data Analysis and Presentation

Descriptive analysis and inferential analysis were used to make sense of the data collected. On the other hand, the multiple regression analysis and Pearson correlation analysis made up the inferential analysis methods. The inferential statistics were considered paramount in fulfilling the study objectives by demonstrating objectively, the effect and relationship between the independent variables (tax reforms that included technological tax reforms alongside administrative and policy reforms) and the dependent variable (tax compliance). Mugenda and Mugenda (2003) outlines that descriptive statistics, on their own, may not effectively aid in explaining links and effects among variables. As such, for justifiable inferences to be made, it is paramount that inferential statistics be incorporated. The regression model was presented as follows:

General Model

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

Where; **Y**= **Tax Compliance**

$\mathbf{\beta_0}$ = Intercept

X_1 = Administrative Tax Reforms

$\mathbf{X_2}$ = **Technological Tax Reforms**

X_3 = Policy Tax Reforms

$\mathbf{\beta_1}$-$\mathbf{\beta_3}$ = Regression Coefficients

ε = error term.

Research Findings and Discussions

This part provides the actual results of the data analysis process. The chapter provides meaningful information for testing the research hypothesis.

Reliability of the Research Instrument

Cronbach Alpha coefficients were extracted and compared to the threshold determined at 0.7 for reliable instruments. The results are as shown in Table 4.1.

Table 4.1: Cronbach's Alpha Reliability Analysis

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.781	.793	23

Source: Survey data (2020)

Reliability coefficients were above the minimum threshold recommended by Gliem and Gliem, (2003). Average coefficient for all the 23 items was 0.793 indicating that internal level of consistency was high for the instrument.

Response Rate

The total dispersed questionnaires to various targeted respondents were 95. The study made use of 'drop and pick' method. However, only 79 questionnaires were returned out of 95 questionnaires which translate to a return rate of 83.16 percent. This return rate is good for generalizing findings to the entire population of interest as recommended by Mugenda and Mugenda (2003). They argued that a return rate of 50 to 59 percent is adequate, 60 to 69 percent is good whereas anything above 70 percent is very good. This explains why the researcher proceeded to use the data in completion of the study as set out.

Descriptive statistics

Descriptive statistics on technological tax reforms and tax compliance among SMEs in Nyeri County, Kenya.

Tax Compliance

Descriptive statistics related to tax compliance among SMEs in Nyeri County is presented below in Table 4.2 categorized by tax registration, accuracy of reporting and timely tax payment.

Table 4.2: Tax Compliance of SMEs

	N	Minimum	Maximum	Mean	Std. Deviation
Tax Registration	79	1.0	5.0	3.692	.90434
Accurate reporting	79	1.0	5.0	3.353	.74256
Timely Tax Payment	79	1.0	5.0	3.061	.92798
Valid N (listwise)	79				
Average				3.368	.85829

Source: Survey data (2020)

The mean for tax registration (3.692) indicates that the SMEs registration for tax purposes was fairly good. Nonetheless, the means for accuracy of tax reporting (3.353) and timeliness of tax payment (3.061) demonstrated only a moderate extent of compliance. On the overall, the mean of the means (3.37) indicate that the SMEs registered moderate level of tax compliance as rated by the respondents. Although registration was not badly off, results showed that there was only a moderate level of compliance with regard to accuracy of tax reporting and timely remittance of tax dues. This is confirmed by the low average standard deviation (0.86) indicating that little variance existed.

Data related to the condition of specific elements of compliance was as in Table 4.3. It shows statistics on the proportion of SMEs registered for tax purposes tax registration of SMEs in Nyeri County over the past 10 years.

Table 4.3: SMEs Tax Registration

	N	Minimum	Maximum	Mean	Std. Dev
Proportion of registered SMEs against annual projections.	79	34.724	67.653	50.765	15.342

Source: Survey data (2020)

On average, it was estimated registration compliance by SMEs stood at 50.8 percent. Thus, it was estimated that only half of SMEs in the county had been registered for tax purposes. The least proportion of annual tax registration compliance over the past ten years stood at slightly above a quarter of SMEs (34 percent) with the highest compliance standing at fairy above two thirds (68 percent). Thus, it was concluded that there was poor registration of SMEs to the tax net in Nyeri County.

The study further sought to understand the tax revenues raised from SMEs over the past 10 years from 2010 to 2019. Table 4.4 shows revenue raised in Millions.

Table 4.4: Tax Revenue from SMEs

	N	Minimum	Maximum	Mean	Std. Dev
Tax Revenues (Kshs)	79	8.0967	12.8763	10.6203	9.52938

Source: Survey data (2020)

As the results indicate, tax revenue attributable to SMEs in Nyeri County averaged at 10.62 Million annually over the past ten years from 2010 to 2019. The least amounts of revenue collected from SMEs over this period was 8.1 Million with the highest being 12.9 Million.

Technological Tax Reforms

This section covers statistics on technological tax reforms. Table 4.5 presents statistics on technological tax reforms and the impact on SMEs in Nyeri County.

Table 4.5: Technological Tax Reforms

	N	Mean	Std. Dev
The SME is aware of the many technology based innovations implemented by the revenue authority to enhance effective registration, filing and payment of tax obligations	79	3.8462	.75257
The tax technology infrastructure implemented by the tax authority has lowered the cost of compliance for the SME.	79	4.6424	1.3852
The revenue authority regularly conducts training among SMEs on use of technology to meet tax obligations.	79	3.1025	.54215
The technology backed reforms have made the process of complying more efficient for the SME.	79	3.7643	1.0847

The tax authorities have established satellite technical centres where SMEs can find technological assistance tax on tax compliance.	79	3.0251	.47279
Average	**79**	**3.6761**	**.84748**

Source: Survey data (2020)

The mean of means (3.68) shows that SMEs largely agreed on the efficiency exhibited in the phase of implementation of technological tax reforms in Nyeri County. The SMEs were largely cognizant of the many technology based innovations implemented by the revenue authority to enhance effective registration, filing and payment of tax obligations. Results showed that the tax technology infrastructure implemented had greatly lowered compliance costs for SMEs. It was also largely held that technology backed reforms have made the process of complying more efficient for the SMEs. However, there was only moderate agreement that the revenue authority regularly conducted training among SMEs on use of technology to meet tax obligations. The tax authorities had also only moderately established satellite technical centres where SMEs could seek technological assistance tax on tax compliance.

The study also sought to know the scope to which tax innovations as implemented by KRA were adopted for usage by the firm. Table 4.6 provides the statistics to this end.

Table 4.6: SME Adoption of Various Tax Innovations implemented by KRA

	N	Mean	Std. Dev
E-registration	79	3.8624	.70023
E-Filing	79	3.5234	1.0034
I-tax system	79	3.9286	.48302
Integrated Tax Management System	79	3.3202	.93857
Electronic Tax Register	79	3.0310	.87293
Average	**79**	**3.5331**	**.79958**

Source: Survey data (2020)

The mean of the means (3.53) represent high level of adoption and usage of various technological tax innovations implemented by Kenya Revenue Authority by the SMEs in Nyeri County. The highest adopted innovation is I-tax system with the least being the Electronic Tax Register. Respondents indicated that technological tax reforms impacted on SMEs' tax compliance by making it much time and cost efficient to comply with tax requirements such as through E-filing.

Inferential Statistics

The study also used inferential statistics (correlation and regression analysis) to determine the effect of the independent variables considered (including technological tax reforms) on tax compliance of SMEs. The statistics were considered key as they allow for generalisations on the entire study population.

Correlation Analysis

The Pearson Correlation analysis was applied to explain the nature, strength and direction of relationship between technological tax reforms and tax compliance. Table 4.7 presents the Pearson correlation output.

Table 4.7: Pearson Correlation Analysis

		Tax Compliance
	N	79
Technological Tax Reforms	Pearson Correlation	.704**
	Sig. (2-tailed)	.011
	N	79

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

Source: Survey data (2020)

The Pearson Correlation Coefficient for technological tax reforms (0.704) indicates existence of a very strong and positive relationship with tax compliance. The relationship is statistically important since the p-value (0.011) is below 0.05. The study findings agree with past studies such as Ondieki (2017), Musa and Ibrahim (2016), Kanyinga, (2016), Kiring'a et al. (2017) and Ngigi (2015) who indicated that technological tax reforms have a positive relationship with tax compliance. The results however disagree with Livoi (2017) who indicated a very weak inverse relationship between technological tax reforms and corporate tax compliance at KRA.

Regression Analysis

Regression analysis was used to draw conclusions on the effect of technological tax reforms on tax compliance among SMEs in Nyeri County, Kenya as is in Table 4.8.

Table 4.8: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.869[a]	.755	.738	.21501	2.331

a. Predictors: (Constant), Administrative Tax Reforms, Policy Tax Reforms, Technological Tax Reforms

b. Dependent Variable: Tax Compliance

Source: Survey data (2020)

The coefficient of determination, 75.50% which is the R squared shows the variation in tax compliance (the dependent variable) which can be attributed to variability in tax reforms variables i.e. administrative tax reforms, policy tax reforms, and technological tax reforms. The balance of variability in tax compliance equivalent to 24.50% was as a result of other predictors outside the scope of this study.

Table 4.9 presents multiple linear regression coefficients. Tax compliance was analysed as the dependent variable while tax reforms (administrative tax reforms, policy tax reforms, and technological tax reforms) made up independent variables.

Table 4.9: Regression Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.007	.087		34.463	.017
	Administrative Tax Reforms	.901	.302	.603	2.813	.002
	Policy Tax Reforms	.801	.284	.341	2.713	.010
	Technological Tax Reforms	**.890**	**.316**	**.408**	**2.162**	**.001**

a. Dependent Variable: Tax Compliance

Source: Survey data (2020)

Results of regression analysis show that technological tax reforms is a significant determinant of SMEs' Tax Compliance. The regression model is developed as:

Tax Compliance = 3.007 + 0.901 (Administrative Tax Reforms) + 0.801 (Policy Tax Reforms) + **0.890 (Technological Tax Reforms)** + Error Term.

The coefficient for technological tax reforms (0.890), p = 0.001 < 5%. Thus, the null hypothesis was rejected and a conclusion reached that technological tax reforms can be used to predict tax compliance. A unit increase in technological tax reforms result in a 0.890 unit increase in tax compliance levels. The study findings agree with past studies such as Ondieki (2017), Musa and Ibrahim (2016), Kanyinga, (2016), Kiring'a et al. (2017) and Ngigi (2015) who indicated that technological tax reforms have a positive effect on tax compliance. In context, gaps are clear on need to have the study done locally. The results however disagree with Livoi (2017) who indicated that technological tax reforms impacted negatively on tax compliance.

CONCLUSIONS, RECOMMENDATIONS AND CONTRIBUTION TO KNOWLEDGE

Conclusion of the Study

Regression analysis results led to a conclusion that technological tax reforms plays a key role in determining the level of SMEs' tax compliance. On the same note, the Pearson Correlation Analysis informed a conclusion that technological tax reforms and tax compliance were strongly and positively correlated. Although results indicated a high level of efficiency and effectiveness in implementation of technological tax reforms in Nyeri County, it was concluded that the revenue authority only moderately organised training among SMEs on use of technology to meet tax obligations. Further, it was concluded that the satellite technical centres established to assist SMEs were inadequate as reported by participants.

Recommendations of the Study

The study recommends heightened activities towards getting the high number of non-compliant SMEs into the tax net, so as to enhance the tax revenues which were quite low. There should also be enhanced taxpayer education on matters related to I tax. The direct technical support offered to SMEs by the tax authorities should be enhanced. Further, the Kenya Revenue Authority should increase taxpayers' support desks established at various outlets to ensure SMEs are well assisted on tax matters. The study recommends that the Kenya Revenue Authority carries out regular training to empower SMEs on use of technology to meet tax obligations. Specifically, the study recommends enhanced training on I-Tax. In addition, the study recommends the establishment of more satellite technical centres to assist SMEs in complying. The study further recommends adoption of simpler payment options such as mobile money platforms such as Mpesa, Airtel Money and other mobile banking innovations.

Contribution to Knowledge

The study makes significant contribution to existing knowledge on tax reforms and tax compliance among SMEs. Whereas past studies looked at technological tax reforms and performance of the tax authority, the current study focused on technological tax compliance among SMEs which has been a thorny issue in policy circles. Specifically, the study gives insights on tax registration, accuracy of financial reporting and timeliness of tax remittance, factors that are scarcely addressed in previous studies. This is a paradigm shift from studies made in the past and is key in determining various aspects of tax compliance among SMEs and the extent to which tax reforms have been able to provide working solutions. The study underlines the importance of tax reforms as fronted by deterrence theory and the optimal theory of taxation which supports a case for technological, administrative and policy reforms as a way of improving the state of tax compliance.

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