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## Integrated Tax Management System and Performance of Value Added Taxes of Large Taxpayers, Nairobi County, Kenya

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### **Abstract:**

*In recent years, the challenge of ensuring tax compliance has become the centre of both academic and policy discourse in Kenya due to the importance of tax revenue for the development of the country. The integrated tax system was introduced in Kenya in 2011 with the overall aim of improving tax compliance and hence the performance of the Kenya Revenue Authority. However, despite the introduction of the i-Tax system, Kenya Revenue Authority has been unable to meet its revenue targets. For example, a report by the auditor general issued in 2018 indicated that the country was likely to lose Kshs 18.5 billion of Value-Added-Tax from approximately 20 large tax payers. The aim of the study was to investigate the effect of iTax system on the performance of Value-Added- Tax by large taxpayers in Nairobi County. The study was guided by the following objectives to determine the effect of the management of users, accuracy of assessment of taxation, and detection of non-compliance on the performance. The study was anchored by the Optimal Commodity Sales Taxes Theory, Expediency Theory of Taxation, and Resource Based Theory. The study adopted the descriptive research design. The study sampled the thirty-five account managers in charge of the 1,167 large taxpayers in Nairobi County. The study used primary data collected using questionnaires. The study established that the management of users, the accuracy of assessment of taxation, and the detection of non-compliance had improved following the introduction of the iTax system. However, the I Tax system had not been able to ensure and enforce full compliance. The study concluded that the use of I Tax system made it easier to manage the large tax payers but the system was not able to motivate the defaulters to make payments. The study recommends that mechanisms should be put in place to compel defaulters to make full payments. Using the multivariate analysis, the study established that the management of users, accuracy of assessment of taxation, and detection of non-compliance had a positive and statistically significant effect of the VAT collected from large taxpayers in Nairobi County, Kenya. The study recommends that Kenya Revenue Authority should continue using the integrated tax systems and to upgrade it to ensure full compliance.*

**Keywords:** *Integrated tax management, accuracy, assessment, detection, non-compliance, value-added-tax*

### **1. Introduction and Background**

Governments across the world are charged with the responsibility of providing public goods and services to their citizenry (Onyango, 2018). Therefore, taxation is at the heart of government operations. Taxation is viewed as the only possible channel of accumulating resources in order to finance public expenditure of goods and services that are provided by the government. According to Marina and Kilis (2002), taxation is the only known and practical manner of collecting revenue to fund public expenditure for goods and services consumed by the citizens of the country. However, Mutua (2012) argues that in developing nations governments raise funds through other sources besides taxation including user-fees, licenses, the sale of government assets and privatisation of public enterprises. Further, Masinde (2012) contends that for most poor nations, taxation is an important stream of revenue but foreign aid and external loans are key financial streams for these countries although unsustainable in the long run.

One of the main streams of government revenue across the globe is the value-added tax (VAT). In some countries, this tax is referred to as goods and services tax (GST). The VAT is determined on an incremental basis, as the value in the product or service increases during the production and distribution process the amount of VAT charged increases (Pricewaterhouse Coopers, 2017). Typically, VAT is applied as a destination-based tax, whereby the tax-rate is based on the location of the consumer and applied on the price of the product or service. In several regions, VAT is applied as sales taxes and other general taxes on products and services and also as taxes applied on specific goods and services that consist primarily of excise taxes, customs, import duties and taxes on specific services such as insurance premiums and financial services. Research by the Organisation for Economic Cooperation and Development (OECD) indicated that in their member states, VAT accounted for approximately 31% of the total government revenue (OECD, 2017).

In Kenya VAT is levied under the Value Added Tax Act, 2013. The tax is levied on the consumption of taxable goods and services produced or imported into the country. There are two categories of items with each attracting different rates of VAT: taxable supplies attract 16% rate, zero rated supplies at 0% rate. The government introduced Value Added Tax Regulations in 2017. They are a subsidiary legislation aimed at ensuring the efficient and effective implication of the VAT Act (PWC, 2018). The Finance Bill of 2018 further makes changes to the VAT structure in Kenya by changing the VAT rates charged on various commodities items which were previously exempt from VAT payments such as garments and leather footwear manufactured in export processing zones at the point of importation, petrol, diesel, kerosene, and aviation spirits which had previously been exempt from VAT now attract VAT rate of 16% (National Treasury, 2018).

## 2. Problem Statement

In recent years, the issue of tax compliance is at the centre of both academic and policy discourse in Kenya for several reasons. Firstly, the Tax to Gross Domestic Product (GDP) ratio is very low (16.9%); secondly, consumption taxes contribute significantly to the tax revenue in middle-income and less developed countries (Salanie, 2011); thirdly, research indicates that VAT productivity in Kenya is low (Sokolovska & Sokolovskyi, 2015); and fourthly, in order to improve the VAT productivity, there needs to be increased compliance. The i-Tax system was introduced in Kenya in 2011 by the Kenya Revenue Authority (KRA) (2015). It is a web-based accounting system that is fully integrated and automated for the purposes of the administration of domestic taxes. The aim of the system is to simplify the process of revenue collection by the taxpayers making it simpler for them to update their tax registration details, file taxes online, generate filling receipts, make enquiries, and monitor their ledger accounts (KRA, 2015).

During the period after the introduction of the i-Tax system, the amount of VAT collected has been increasing. However, despite the growth in the amount collected, the KRA has been unable to meet the VAT collection targets set by the government. The most significant shortfall was Kshs. 40,339 billion registered in 2014/2015. The inability of KRA to meet its targets has been attributed to non-compliance of various categories of taxpayers. The effect of non-compliance by taxpayers particularly large-taxpayers had a pronounced effect on the revenues collected. For example, the failure of 20 large taxpayers to comply resulted in a loss of revenue of Kshs.18.5 billion. Further, researchers argue that the increase in the level of revenue collected by KRA, despite being unable to meet targets, is attributed to the growth in the economy and not the improvement in collections (Magu, 2013; Wasao, 2014).

Numerous studies have been conducted to evaluate the use of automated tax systems such as i-Tax and the resultant effect on the performance of tax collections. The results have been contradicting. Negash (2005) and Salehi (2007) found that the application of automation had no effect on the performance of VAT collection in Ethiopia and Iran respectively. They attributed these findings to poor sensitisation and training on the automated system. Kleven and Waseem (2012), Pomeranz (2015), and Kosonen and Olli (2015) established that the use of e-tax collection platforms increased the amount of VAT collected, reduced the amount of time taken to file returns, reduced non-compliance, and increased the number of persons registered as taxpayers. It is against this background that the study proposes to investigate the effect of the i-Tax system on the performance of VAT collected from large taxpayers in Nairobi County, Kenya.

## 3. Objectives of the Study

- To assess the effect of the management of users on the performance of VAT collected from large taxpayers in Nairobi County, Kenya
- To examine the effect of accuracy of assessment of tax liabilities on the performance of VAT collected from large taxpayers in Nairobi County, Kenya
- To evaluate the effect of detection of non-compliance on the performance of VAT collected from large taxpayers in Nairobi County, Kenya

## 4. Significance of the Study

The findings of the study are important to the revenue authorities, as it gives a clear assessment of the impact of the i-Tax system on their performance. This will allow them to make amendments to the system where there are shortcomings or enhance the areas where performance meets expectations. The findings of the study are relevant to the government of Kenya as it highlights the effectiveness of its automation and computerization program. The findings of the study also enable the government to assess the ability of the Kenya Revenue Authority to meet its targets as set out in Kenya Vision 2030 economic blueprint. The findings of the study are important to scholars as they add to the body of existing knowledge on the effects of automation of revenue collection function. Additionally, the study can be the starting point for future studies on iTax and revenue collection.

## 5. Literature Review

### 5.1 Theoretical Review

#### 5.1.1 Optimal Commodity Sales Taxes Theory

Frank P. Ramsey (1927) developed a theory for optimal commodity sales taxes which was presented in the article "A Contribution to the Theory of Taxation". The problem is closely linked to the problem of socially optimal monopolistic pricing when profits are constrained to be positive, known as the Ramsey problem. Ramsey (1927), was the first to make a

significant contribution to the theory of optimal taxation from an economic standpoint, and much of the literature that has followed reflects Ramsey's initial observations (Gentry, 2003). Optimal taxation theory is concerned with the designing and implementation of a tax system that reduces inefficiency and distortion in the market under given economic constraints. Though inequality will always exist within even the most efficient markets, the goal of taxation is to eliminate as much inefficiency as possible and to raise revenue to fund government expenditures. With any tax, there will be an excess burden, or additional cost, to the consumer and the producer. Whenever the consumer purchases the taxed good or service, and the higher elasticity, or responsiveness, of the demanded product, the greater the excess burden is on either the consumer or producer. Those individuals or corporations who have the most inelastic demand curve pay the brunt of the excess burden curve. However, the trade-off of placing larger taxes on inelastic goods is that the higher tax will lead to lower quantity exchanged and thus a smaller deadweight loss of reduced revenue (Mankiw, Weinzierl & Yagan, 2009). However, this theory has been criticized for being of little practical policy relevance, due to a lack of robust theoretical results. Much of the optimal tax literature building on Mirrlees and Diamond (1971) contribution has been highly technical and abstract, and for many years this body of theory seemed to offer few robust results (Sorensen, 2010). According to Gentry (2003) this theory presents a basis for governments to introduce mechanisms for collection of taxation given that they are often burdensome to the taxpayers who do everything to avoid or evade them. This theory is relevant to the study as it gives a basis for the introduction of robust automation systems to ensure full tax compliance.

### 5.1.2. Expediency Theory of Taxation

The expediency theory of taxation was formulated by Buehler in 1936. This theory states that every tax revenue collection system must pass the test of practicability, which must be the only consideration when the government is choosing a revenue collection system. The proposition here is that the economic and social objectives of the government should be treated as irrelevant since it is useless to have a tax which cannot be levied and collected efficiently. This theory is relevant to the study in that iTax system is expected by KRA to enhance revenue collection by creating an enabling technological environment that facilitates efficient assessment and revenue collection process. Equally, the expediency theory has been criticized for the proposition that the economic and social objectives of the government should be treated as irrelevant is not practical as there are pressures from economic, social and political groups. Every group tries to protect and promote its own interests and government is often forced to reshape tax structure to accommodate these pressures (Bhartia, 2009).

In addition, the administrative set up may not be efficient to collect the tax at a reasonable cost of collection. Taxation provides a powerful set of policy tools to the authorities and should be effectively used for remedying economic and social ills of the society such as income inequalities, regional disparities, unemployment, cyclical fluctuations and so on (Bhartia, 2009). The expediency theory of taxation is therefore relevant to the present study in that, it seeks to explain the influence of administrative setup, such as efficient electronic payment system, in revenue collection by KRA which ultimately affects its performance.

### 5.1.3 Resource-Based Theory

The study will be guided by Resource Based Theory advanced by Barney. According to this theory, a firm is equivalent to a broad set of resources that it owns (Barney, 1991). The Resource Based Theory suggests that the resources possessed by a firm are the primary determinants of its performance, and these may contribute to a sustainable competitive advantage of the firm (Hoffer & Schendel, 1978; Wenerfelt, 1984). According to Barney (1991), the concept of resources includes all assets, capabilities, organizational processes, firm attributes, information and knowledge controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness. The Resource Based Theory suggests that valuable firm resources are usually scarce, imperfectly imitable, and lacking in direct substitutes (Barney, 1991; Peteraf, 1993). Firms need to seek a strategic fit between their internal characteristics (strengths and weaknesses) and their external environment (opportunities and threats) (Barney, 1991). Considerable emphasis has usually been given, however, to a firm's competitive environment and its competitive position. In contradistinction to that external emphasis, the resource-based theory embodies a different approach, which stresses the internal aspects of a firm. The theory emphasizes the firm resources, which in this case is the iTax system, affects the overall performance of the firm.

### *5.2 Empirical Review*

Gidisu (2012) conducted a study to examine the automation system of the Ghana Revenue Authority on the effectiveness of revenue collection. The study interviewed forty officials from the Customs Division with specific duties and responsibilities in automation system management at the GRA. The study used the cross sectional approach. The results of the study suggested that there was a positive impact of automation system usage on the cost of tax administration, automation and effectiveness of revenue collection, and overall performance of the collection authority. Additionally, automation was significantly related with tax clearance time.

Chatama (2013) conducted a study to investigate the means by which ICT has modernized Tax administration methods and enhanced revenue collection at the Tanzania Revenue Authority. The study found that the revenue collected increased over the study period. This increase was attributed to the ICT system that shortened the processing time for return and the time for responding to queries raised by the taxpayers. However, the study found that the increase could also have been attributed to economic factors such as increased internal trade, reduction in importation and more reliance on domestic products.

Maisiba and Atambo (2016), conducted a study to evaluate the efficiency of revenue collection in Uasin Gishu County using electronic tax systems. The study used the case study research design and data was collected from a sample of 102 respondents using questionnaires. The study found that despite revenue personnel being well trained on e-filing systems in Kenya, there were still inherent challenges affecting the adaptation of iTax in Kenya. These challenges were centered on ease of use of the system by taxpayers and low computer literacy levels prevalent in the country as antecedents to full adoption of electronic tax administration systems in Kenya.

Manaye (2016) conducted a study to evaluate the tax system referred to as the accounting information system on the collection of VAT in Wolaita Sodo and Tercha Town in Ethiopia by the tax revenue authority. The researcher elected to use the descriptive research design. The study selected only a small number of management and employees of the revenue authority and also some portion of active customers, who were identified using random sampling. The data was collected using questionnaires and through interviews. The study established that the integrated tax system underperformed. This was attributed to the fact that the authority did not create awareness of the system nor train the employees and taxpayers on the use of the system.

Bett and Yudah (2017) conducted a study that aimed at examining the contribution of i-Tax system as a strategy for revenue collection at Kenya Revenue Authority, Rift Valley Region, Kenya. The study was guided by Resource Based Theory. The study established that online taxpayer registration, online tax return processing, online compliance and monitoring activities; and electronic tax payments have a significant contribution to revenue collection at KRA, Rift Valley Region. The study concluded that when all these iTax components were embraced, revenue collection, accounting for taxes paid, monitoring of taxpayers, service delivery to taxpayers and compliance improved.

Fan, Liu, Qian, and Wen (2018) used the balanced panel data methodology to investigate the dynamic effects of the computerization of VAT invoices on Chinese Manufacturing firms. The sample of the study consisted of 8,096 firms operating in China. In order to avoid outlier-driven results, the study excluded observations with the top and bottom 1% of VAT. The dependent variable in the study was VAT share while the independent variables were VAT/Sales, Sales, employment, intermediate inputs, and export share. The study established that the use of the integrated tax system to generate computerized VAT invoices increased the amount of VAT collected from the firms sampled. The study found that although the use of the tax system increases tax revenue collections, however, the increases were likely to be smaller in the long-run.

## 6. Research Methodology

This study adopted the descriptive research design. According to Berg (2009), this design is appropriate where the researcher wants to gather sufficient information regarding a specific event, social setting, individual, group or phenomenon. Creswell (2008), asserts that the descriptive research design allows for a deep study of a bounded system which could, for example, be an event, an activity that has taken place, a specific process or an individual based on a large amount of collective information or data. The approach allows the researcher to obtain a description and evaluation of a particular phenomenon in its original or normal context (Denscombe 2007; Gall, Gall, & Burg, 2007).

The population of the study refers to the entire group that the researcher is interested in researching and analyzing (Vonk, 2017). Typically, the target population is identified and agreed upon before a research study can begin. The study target population are the 1,167 large taxpayers in Nairobi County, Kenya who have registered for VAT on the i-Tax platform. The information of the study was collected from the account managers who oversee the large-taxpayers in Nairobi County. The study established that as at November 2018 there were thirty-five account managers at KRA each managing approximately 33 large-tax payers registered in Nairobi County Kenya. The study followed the census sampling approach. In this approach, all the items in the target population participate in the study. The study sampled all the thirty-five account managers.

The study collected data from the respondents using questionnaires. The questionnaire is advantageous as it allows the researcher to collect rich data through the answers given to the sub-questions relating to the effect of iTax on the performance of VAT collected from large taxpayers in Nairobi County. According to Cohen, Marion, & Morrison (2007), the collection of data via questionnaires is advantageous as it allows the researcher to collect vital information in a short amount of time and the information collected will be factual. The questionnaire contained both open and close-ended questions. The responses to the close-ended questions will be obtained by use of the Likert scale. This scale required the respondents to indicate how strongly they agree or disagree with statements on a five-point scale. This helped to ensure that the responses provided are accurate and measure the participants' attitudes or evaluations (Finstand, 2010). The open questions allowed the respondents to give their opinions. The researcher dropped the questionnaires at the KRA headquarters and collects them after three days.

The following regression equation will be estimated to determine the relationship between iTax system and performance of KRA

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

Y is the performance of KRA,  $X_1$  is management of users,  $X_2$  is the accuracy of assessment of tax liability,  $X_3$  is the enforcement against non-compliant,  $\beta_0$  is the intercept,  $\beta_1$ - $\beta_3$  are the regression coefficients of the independent variables,  $\varepsilon$  is the error term

## 7. Research Findings

The results of the regression analysis are presented in Table 1.

	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.847	.896		6.529	.000
	Management of New Users	.502	.084	.099	.621	.039
	Accuracy of assessment of tax liability	.513	.160	.003	.022	.003
	Detection of non-compliance	.362	.120	.081	.006	.005

Table1: Regression Results  
Source: Study Data (2019)

The findings summarised in Table 1 imply that equation (1) can be rewritten as

$$Y = 5.847 + 0.502X_1 + 0.513X_2 + 0.362X_3 \dots\dots\dots 2$$

The findings confirm the postulations put forward in the Resource-Based Theory. The assets of the firm help it to improve performance. In this case, the use of iTax helps KRA to improve performance. The constant value is 5.847 with a p-value of 0.000. This suggests that without management of new users, accuracy of assessment of tax liability, and detection of non-compliance, the collection of VAT from large taxpayers would have 5.847.

The coefficient of management of new users is 0.502 with p-value 0.039. This implies that the effect of the management of new users, in this case, the large taxpayers in Nairobi County, Kenya, is positive and statistically significant. A unit increase in the management of new users would result in a 0.502 unit increase in performance. These findings contradict the findings of Maisiba and Atambo (2016). The findings suggest that the iTax system allows the KRA to manage the large taxpayers which ultimately improves VAT collection. Maisiba and Atambo (2016) indicated that the performance of the iTax system in Uasin Gishu County, was being hampered by computer literacy of the KRA officials and the taxpayers. The account managers and large taxpayers in Nairobi County seem to be computer literate.

The findings in Table1 indicate that the accuracy of the assessment of the tax liability had a  $\beta = 0.513$ , p-value 0.003. This indicates that accuracy of assessment of tax liability has a positive and significant effect on performance. The findings suggest that a unit increase in accuracy of assessment will result in 0.513 unit increase in performance. Buehler (1936) in the Expediency Theory of Taxation suggested that the economic and social objectives of the government are irrelevant if it cannot levy and collect tax efficiently. The findings suggest that the postulations of Buehler (1936) hold true. The government needs to compute and levy taxes accurately in order to be able to achieve its mandate. These findings also confirm the findings of Bett and Yudah (2017) that the online platform increases the tax collections. Seelman et al. (2011) maintain that the aim of the iTax system is to enhance accuracy in computation of tax returns. The iTax system serves its function.

The detection of non-compliance has a positive and statistically significant effect on the performance of KRA when collecting VAT from large taxpayers in Nairobi County, Kenya. This was deduced from  $\beta = 0.362$  and p-value 0.005. These findings imply that a unit increase in the detection of non-compliance would result in a 0.362 increase in performance. Seelman et al. (2011) suggest that the taxpayer account is at the heart of the iTax system. Thus, the tax authority is able to monitor activity of the taxpayer. These imply that KRA is able to determine whether or not the taxpayer made fillings, and submitted payments. Allowing them to take the necessary actions.

## 8. Conclusions

Based on the findings that the management of users by way of the iTax system had increased the performance of VAT collected from large taxpayers in Nairobi County, Kenya the study concludes that the service improvement measures induced by the iTax system have improved the performance of VAT collection. The goal of the iTax was to improve management of the users. The findings indicate that this objective has been achieved. The findings also indicate that the use of automated systems had made it easier to administer tax payers and to group them in to categories.

Based on the findings that accuracy of assessment of tax liability had a positive and statistically significant effect on performance the study concludes that the computation, assessment and accounting using the itax platform is appropriate. However, the study established that the increased accuracy of computation did not translate into increased compliance or reduction in the amount of VAT arrears. The study concludes that the accuracy in the computation of liabilities does not necessarily translate into increased collection. The findings of the study suggest that there are other factors that cause the large tax payers not to fulfil their tax obligations. The detection of non-compliance had a positive and statistically significant effect on performance. The study concludes that the iTax system can reconcile payments, identify defaulters, identify late payments, and is able to impose interest and penalties by customising some of the parameters. The study thus concludes that the ability to detect tax defaulters and tax cheats stimulates some large taxpayers to comply as they might fear that consequences of being caught.

## 9. Recommendations

The study concluded that the goal of efficient and effective management of users has been achieved. However, using the appropriate technology is necessary but not sufficient. The KRA needs to have ongoing monitoring and evaluation. Additionally, the government needs to put in place measures to ensure full collection. For example, interactive sessions should be convened by the KRA whereby the tax payers can be given an opportunity to indicate the reasons for non-compliance and to establish what can be done to improve the system. The study has established that the iTax system

is designed to facilitate the management of users, accurate computation of tax liabilities and detection of non-compliance. The system is designed to facilitate reporting on taxpayers' compliance and non-compliance. The study recommends that the system should be enhanced to ensure payment of taxes. The study established that the iTax system is able to detect non-compliance, charge fines and interest for non-payments and charge them to the defaulter. However, the system has no mechanism to recover the tax arrears, the interest, and/or the fines. The study recommends that the government implements measures that can enable the KRA to recover outstanding amounts directly from the defaulters' accounts and by allowing them to develop a plan for payment. The iTax system should also be adjusted so that it can handle objections and appeals cases, and to be able to decline rulings.

## 10. Suggestions for Further Studies

The study was confined to large taxpayers. Future studies should conduct comparative analysis of the findings to ascertain whether the findings of this study are specific to large tax payers or are applicable to other categories of tax payers. Additionally, the study should also be conducted in other developing countries given that the iTax system has been rolled out in Tanzania and the Philippines. The study assessed the performance of the iTax system and the performance of VAT of large taxpayers in Nairobi County, Kenya. The perspective of the study was limited to that of the account managers. Future studies should be expanded to include the perspective of the large taxpayers. In view of the nature of the iTax system, future studies should explore the areas and elements that underpin the iTax system. These include the staff, the technology, staff training, civic education, and infrastructure. The studies should seek to understand why the KRA has not been able to ensure full compliance and to collect tax arrears.

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