ISSN (online) 2664-9535 (print) 2664-9527 https://atcr.kra.go.ke

Effect of Technological Uptake On Pay as You Earn Tax Performance from Medium Taxpayers in Kenya

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Received 30 June 2021
Accepted for publication 14 July 2021
Published 18 August 2021

Abstract

Every year the Kenyan Government sets targets of the amount of tax it intends to collect. However, it is noted that often times the Kenya Revenue Authority fails to achieve these targets. Hence it necessitates an investigation into ways to improve revenue collection which gives rise to this study. The objective of the study was to investigate the effect of technological uptake on Pay As You Earn tax performance. The specific objectives of the study were to establish the effect of E-registration on Pay As You Earn tax performance, to determine the effect of E-filing on Pay As You Earn tax performance and to establish the effect of E-payment on Pay As You Earn tax performance. The theories that guide this study are: Technological Acceptance Theory and the ability to pay theory. The study adopted the descriptive research design. The population of the study was Medium taxpayers registered under the Medium Taxpayers Office of Kenya Revenue Authority. There were 3,972 medium taxpayers registered under the Medium Taxpayers Office as at 31st December, 2017. A census of the 3,972 medium taxpayers was used. The study used secondary data collected from KRA records and reports. This helped get data on registration uptake, returns filed, the number of transactions completed through the payment gateway and tax collected. Both descriptive statistics and inferential statistics were carried out with the help of the SPSS software. Data was analysed using regression analysis by the use of a linear regression model whereby Pay As You Earn tax performance was the dependent variable and the independent variable was technological uptake. In the first research question, the study found that the e-registration technology enhanced PAYE tax performance significantly, although the effect was weak. On the other hand, the study found that E-filing technology affects PAYE tax performance significantly and the effect was strong, while in the last research objective it was established that e-payment influences PAYE tax performance significantly. Technological uptake has caused a variation of 93.4% (R2=0.934). The study recommends that KRA should scale up the use of technology in all tax streams to enhance tax revenue collection and performance. The study also recommends concerted effort from the KRA management on creating awareness of the tax systems, to consistently and incrementally grow technology, while managing change to enhance uptake. In addition, during the upgrade or change over, KRA should manage the stages seamlessly to ensure that the momentum of the uptake does not stagnate.

Keywords: digital economy, taxation, Pay As You Earn

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1. Background

There has been a debate on tax performance across the world. Schaupp and Carter (2009) note that in the United States of America (USA), the use of Internal Revenue Service (IRS) endorsed e-file systems has continued to grow over the last couple of years with approximately 52.9 million individual returns being filed in 2003, 68 million in 2005 and 90 million in 2008 (IRS, 2004). Similarly, the Revenue Online Service (ROS) in Ireland has been highly effective with 53% of self –assessment taxpayers using the system in 2003 and a total of 8.3 billion Euros of revenue being collected via the system (Connolly and Bannister, 2008). Tallaha et al. (2014) states that in Malaysia following the first year of its implementation in 2006, there has been an increase in the usage of E-filing of more than 368% in 2007 compared to 2006 (IRBM 2006, 2007).

In Zimbabwe it was noted by Gideon and Alouis (2013) that there was a need to review the structural and operational frameworks governing the national revenue authority, plug loose areas in income tax frameworks, as well as institute transparency in national revenue remittance processes. One of their recommendations included the introduction of an electronic system which the national revenue collector Zimbabwe Revenue Authority (Zimra) introduced in 2015.

The Kenya Revenue Authority (KRA) is a Semi-Autonomous Government Agency (SAGA) whose objectives are to assess, collect and account for all revenues and to advise on matters relating to the administration of, and collection of revenue under the written laws. It was established in 1st July, 1995 by an Act of Parliament, Cap 469 (KRA, 2015). According to Atika (2012), electronic tax system forms part of the revenue collection reforms by Kenya Revenue Authority whose main motive is enhancing tax collections and tax efficiency and thus, tax revenues have been increasing rapidly due to the country's rapid economic development accelerated by the new systems.

1.1.1 Technological Uptake

Dowe (2008) notes that the key objective for tax administrations, particularly those in developing countries, is to maximize revenue collection by improving compliance through enhanced customer services. In this study technological uptake comprises the adoption of E-registration, E-filing and E-payment. E-registration is the application of electronic means, specifically ICT so as to collect basic taxpayer identifying information, such as names, addresses, and legal entity types (Jimenez et al., 2013).

Jimenez et al. (2013) note that this information allows the tax administration to know who its taxpayers are, where they are located, and whether they are active or inactive. Modern tax administrations also collect compliance information, such as business activity types or estimated turnover, to plan future compliance activities. The registration and recording of taxpayer information is one of the fundamental functions of the tax administration, and to a great extent, drives how other core administrative functions of the tax administration operate (Bett et al., 2017).

Allink and Kommer (2010) note that E-filing refers to the transmission of tax information directly to the tax administration using the internet. Electronic filing options include online, self-prepared return, using a personal computer and tax preparation software, online submission of returns using a tax professional's computer and tax preparation software. Connolly and Bannister (2008) note that an online system has to be sufficiently clear and simple to use that an ordinary tax payer, who might not have a high degree of computer literacy, can complete and file their taxes without undue difficulty.

According to Fu et al. (2006), electronic filing of personal income taxes (e-file) has the potential of improving the overall process of tax filing for the individual filer while at the same time reducing the cost to both taxpayers and tax collection agencies. Electronic filing may take place at the taxpayer's home, a volunteer site, the library, a financial institution, the workplace, malls and stores, or a tax professional's place of business (Allink and Kommer, 2010).

E-payment as noted by Allink and Kommer (2010) is the transfer of money from a person's bank account to the tax administration's bank account using the internet. E-payments can be made online, at any time (during and after banking hours), and from any place. Connolly and Bannister (2008) note that with the emergence of e-government, the use of ICT in the public sector has turned from being inward looking and administration-focused to outward looking and service-focused.

With the tax IT system all returns are archived electronically and are easily accessible during audit and collections. Return and payment data are used to automatically calculate liability, interest, and penalties. Since the data entry of taxpayer returns and payments remains one of the most labor intensive functions within the tax administration, an effective tax IT system incorporates functionality for electronic filing and payment, including payments through financial institutions (Jimenez et al., 2013).

1.1.2 Pay As You Earn Tax Performance in Kenya

Pay As You Earn (PAYE) tax is a tax under the provisions of Section 5 of the Income Tax Act, CAP 470 laws of Kenya. It is imposed on salaries and wages and is applicable to a resident person in Kenya from any office or employment

(Employer's Guide, 2017). The employer deducts a certain amount of tax from the employee's salary or wages on each payday then remits the deductions to the KRA. This relieves the employee from paying taxes at the end of the year and shifts the responsibility to the employers (Mutua, 2012).

As noted under the Third Schedule of the Income Tax Act, CAP 470, personal income taxes in Kenya are charged on an individual's income using a graduated scale with the lowest rate being 10 per cent and the highest 30 per cent. The PAYE tax returns must be submitted on or before the 9th day of the month following the Pay-roll month. (Income Tax Act, CAP 470). According to Gideon and Alouis (2013), the Income tax return system was associated with high tax compliance costs arising from understated tax obligations. Income tax returns scored lowly on taxpayer convenience as filing the Return forms was a complicated and cumbersome process.

IMF (2011) notes that less than 5 percent of the population in developing countries pay PAYE tax (compared to nearly 50 percent in developed countries) while only 15 percent of income is reached in developing countries (compared to nearly 57 percent in developed). This is worsened by weak income tax collection systems (arising from low level tax analysis capacities, tax evasion, lack of modern technology and corruption among collectors of revenues). It is important to note that income tax is very sensitive to the state of the economy because company closures and retrenchments reduce the economy's income taxable base (Gideon and Alouis, 2013).

According to Maina (2014), when compared to other types of taxes the contribution of income taxes to the total tax revenue is about 50 percent attributed to the fact that they are easier to administer and capture the ability to pay. This is a shift from what literature has predicted that developing countries are likely to rely more on consumption and trade taxes, and less on income taxes (Bahl and Bird, 2008). This makes income tax an important economic variable that cannot be ignored in the formulation of effective public policy.

1.1.3 Medium Taxpayers

These are those taxpayers whose annual turnover ranges from Kshs. 350 million to Kshs. 1 billion (KRA, 2014). They fall under different economic sectors which include the service sector, agriculture, manufacturing, retail and wholesalers, financial, insurance, construction, professionals and high networth individuals. The Medium Taxpayers Office (MTO) was formed in line with KRA'S Revenue Administration Reforms and Modernization Programme (RARMP) initiative as contained in the Fourth Corporate Plan covering the period 2009/10 to 2011/12.

This was done with the aim of extending the concept of taxpayer segmentation after its success with the Large Taxpayers' Office, where the large multinationals are served from and their tax matters are handled by KRA experts. KRA has committed itself to continue implementing the taxpayer segmentation approach to address the unique needs of the different groups of taxpayers. The MTO's objective is to improve effectiveness of medium taxpayers administration and to minimize compliance costs to both taxpayers and the Kenya Revenue Authority (KRA), through provision of consistent quality services to medium taxpayers. The MTO commenced its operations on 1stNovember, 2010.

1.2 Problem Statement

In their study on compliance costs, Pope and Abdul-Jabbar (2008) note that Small and Medium Enterprises (SME) compliance costs in Malaysia have fallen. The introduction of the Self-Assessment System (SAS) in 2001 and the subsequent simplification measures taken by the Inland Revenue Board are probably major explanatory factors. It is also seen in India that E-filing is the new effective method of filing income tax return through online and e-payments. Over the years the number of returns filed electronically has grown significantly (Kumar and Anees, 2014). Consequently, revenue targets that have been set by the Indian Government have been surpassed in the recent years.

The Kenya Revenue Authority has been undergoing many reforms and transformations so as to increase revenue collection. Despite these reforms KRA has of late not met the revenue targets set by the treasury. For instance, in the fiscal year 2016/2017 the PAYE tax collections were Kshs. 336.60 billion against a target of Kshs. 344.26 billion thereby falling short of the target by Kshs. 7.66 billion (KRA reports, 2017). Similarly, in the fiscal year 2015/2016 the PAYE tax collections were Kshs. 312.03 billion against a target of Kshs. 330.524 billion thereby falling short of the target by Kshs. 18. 49 billion (KRA reports, 2016).

Therefore, the Government is not able to adequately provide the much needed services to its citizens which include infrastructure, security, quality health care and education; as well as agriculture and industrial transformation to attain inclusive growth, create jobs and reduce poverty. This thus has raised a concern as the Government aims to achieve its targets and hence the need for this study. The study focuses on E-registration, E-filing and E-payment as it has been seen from previous studies that these variables are key aspects of technology which influence tax performance. It also narrows down to PAYE tax performance and not the entire Domestic Taxes department.

There has been limited research done to evaluate the contribution of technology on revenue performance. Kamau (2014) did a study on the adoption of technology as strategic tool in enhancing tax compliance in Kenya. His focus was on large taxpayers. The study found that the adoption of technology impacts on the tax compliance levels of the large taxpayers. The current study looks into medium taxpayers and focuses on revenue performance.

Maisiba and Atambo (2016) did a study on the effects of Electronic- Tax System on the revenue collection efficiency

of Kenya Revenue Authority: A case of Uasin Gishu County. The study found that when compared with the old manual system, the electronic system is good and convenient by far. Their results indicate that revenue collection has been affected upwards. The current study brings in a different variable, E-registration and is done on medium taxpayers. Okoye and Ezejiofor (2014) did a study on the impact of e-taxation on revenue generation in Enugu, Nigeria. The study found out that e-taxation can enhance internally generated revenue and reduce the issue of tax evasion in Enugu State. The current study focuses on E-registration, E-filing and E-payment and their effect on revenue performance.

Arora (2016) in the study E-filing of Income Tax returns in India- An Overview notes that E-filing saves time, energy and cost. It has reduced the burden of record keeping and ensured accuracy of data. Tax payers are benefitted by use of e-filing services. The current study goes on to look not only into E-filing but also E-registration and E-payment. It seeks to answer the question: what is the effect of technological uptake on Pay As You Earn tax performance from medium taxpayers in Kenya?

1.3 Objectives

1.3.1 General Objective

The general objective of the study was to investigate the effect of technological uptake on Pay As You Earn tax performance from medium taxpayers in Kenya.

1.3.2 Specific Objectives

The specific objectives of the study were as follows:

To establish the effect of E-registration on Pay As You Earn tax performance from medium taxpayers in Kenya.

To determine the effect of E-filing on Pay As You Earn tax performance from medium taxpayers in Kenya.

To establish the effect of E-payment on Pay As You Earn tax performance from medium taxpayers in Kenya.

1.4 Research Questions

What is the effect of E-registration on Pay As You Earn tax performance from medium taxpayers in Kenya?

What is the effect of E-filing on Pay As You Earn tax performance from medium taxpayers in Kenya?

What is the effect of E-payment on Pay As You Earn tax performance from medium taxpayers in Kenya?

1.5 Justification

The study is of benefit for theory building, policy formulation and managerial practice. It helps the existing literature as it fills the gap about what is not known of the effects of technology on revenue performance. It also forms the basis for further research for future researchers to use. For policy makers, the findings reveal strengths or weaknesses associated with the implementation of new technology and its benefits to other government institutions planning to embark on similar modernization programs. The managers may gain knowledge on the importance of the use of technology on collection of revenue and thus are be able to take advantage of it for better performance.

1.6 Scope

The study focused on the medium taxpayers registered under the Medium Taxpayers Office (MTO) of Kenya Revenue Authority. This covers the taxpayers who meet the annual turnover of between 350 million and 1billion in Kenya. Hence, the geographical region is Kenya which covers the 47 counties and an area of 582,650 km2. KRA iTax reports (2017) indicate that there were 3,972 taxpayers registered under this station.

2. Literature Review

This chapter contains the review of the theoretical and empirical literature on effect of the use of technology on revenue performance from medium taxpayers. It gives a discussion on what previous authors have done including the methodologies used. There is also the conceptual framework which gives an understanding of what variable influences what. In addition there is a critique and research gaps are identified.

2.2 Theoretical Review

This study was guided by two theories. The first theory supporting the study is the Technological Acceptance Theory as stated by Köck (2017). The other theory guiding this study is the ability to pay theory as explained by Hyman (Hyman, 2014).

2.2.1 Technological Acceptance Theory (TAT)

According to Management Association Information Resources (2018), technology acceptance theory has been developed by adopting the Technology Acceptance Model (TAM). Davis (1989) developed TAM to predict the acceptability of a tool and to ensure that TAM provides the theoretical basis for user acceptance testing methodology, which would enable system designers to evaluate proposed new systems before their implementation (Köck, 2017). The model as stated by Davis (1989), suggests that the acceptability of an information system is determined by two main factors: perceived usefulness and perceived ease of use. Perceived usefulness is defined as being the degree to which a person believes that the use of a system will improve his performance. Perceived ease of use refers to the degree to which a person believes that the use of a system will be effortless. Fu et al. (2006) note that the effects of external variables for instance system design characteristics on intention to use are mediated by these beliefs.

Davis (1989) argues that the attitude of an individual is not the only factor that determines his use of a system, but is also based on the impact which it may have on his performance. Therefore, even if an employee does not welcome an information system, the probability that he will use it is high if he perceives that the system will improve his performance at work. Dillon and Morris (1996) note that with two systems offering the same features, a user will find more useful the one

that he finds easier to use. According to Adams et al. (1992), TAM models might be useful within organizations for evaluating applications or technologies or to make comparisons between user applications.

This theory is relevant to this study as it supports the independent variable technological uptake. It explains why people use technology in this case E-registration, E-filing and E-payment. It is simply because they find it useful and easy to use. If someone perceives technology to be useful for what they want to do for example in calculating something they would want to use it.

2.2.2 Ability to Pay Theory

This theory developed by Smith (1776) states that taxes should be distributed according to the capacity of taxpayers to pay them (Hyman, 2014). This approach places an increased tax burden on individuals, partnerships, companies, corporations, trusts and certain estates with higher incomes. Under this theory there is equity and fairness in the taxation scheme. The amounts of tax individuals pay should bear some relationship to their abilities to pay (Smith, 1776).

The capacity of an individual to remit a portion of their income is deemed fair in that if a person has a larger taxation capacity, they should be subject to higher tax than individuals who are not fortunate. This theory being most popular due to its perceived fairness has become easy to implement. Wasao (2014) notes that economists are not unanimous as to what should be the exact measure of a person's ability or faculty to pay thus several criteria have been described including property ownership, expenditure, and basic income. The more a person owns or spends or has as a basic salary are indicators of a better ability to remit taxes.

According to Hyman (2014), individual evaluations of the ability to pay are likely to differ but in countries such as USA and Kenya, ability to pay varies with income. This theory is relevant to this study because it supports the dependent variable Pay As You Earn tax performance. This is because Pay As You Earn tax is progressive. If you earn more income you will pay more tax as compared to someone who earns less income.

2.3 Empirical Literature

2.3.1 E-registration

Bett et al. (2017) did a study on the effect of online taxpayer registration and tax return processing on revenue collection at the Kenya Revenue Authority, Rift Valley Region. The study adopted the correlational design. The population of the study was 114 employees whereas the sample size was 76. Data was collected by the use of structured questionnaires. The findings of the study were that online taxpayer registration and online return processing had a significant contribution to revenue collection at KRA.

Okoye and Ezejiofor (2014) did a study on the impact of e-taxation on revenue generation in Enugu, Nigeria. The study adopted the survey design. The population of the study was 81 individuals consisting of bank managers, head of operations, accounting officials and tax officials of the State Board internal Revenue. The sample size was 32. Data was collected from both primary and secondary sources. It was found out that E-taxation can enhance internally generated revenue and reduce the issue of tax evasion in Enugu state. In addition, E-taxation can prevent corrupt practices of tax officials.

Karimi et al. (2017) did a study on effect of technology and information systems on revenue collection by the county government of Embu, Kenya. The study adopted the descriptive survey design. The population of the study was 126 Embu County employees. The sample used was 102 respondents. Data was collected using self-administered semi-structured questionnaires. The findings of the study were that computerized Information Systems had a positive effect on revenue collection. Computerization of council activities such as revenue collection enhanced efficiency as a result of timely revenue collection, enhancing management integrity, provision of clear records among other factors. Information systems also improved the operations that are facilitated by the Internal Control Systems which in turn enhances efficiency and effectiveness of the council.

2.3.2 E-filing

Pope and Abdul-Jabbar (2008) did a study on the effects of the self-assessment system on the tax compliance costs of small and medium enterprises in Malaysia. The population of the study was 9,669 SME companies in peninsular Malaysia. The sample drawn proportionally from each category of the business sector was 1,300 companies. The traditional postal survey questionnaire was used. It was found that SME compliance costs over the period have fallen, contrary to the general presumption. The introduction of the Self-Assessment System (SAS) in 2001 and the subsequent simplification measures taken by the Inland Revenue Board are probably major explanatory factors.

Lukwata (2011) did a study on the influence of electronic tax filing system on tax compliance and tax collection in Uganda. The study adopted the survey research design. The sample of the study was 38 respondents comprising importers, clearing agents and Uganda Revenue Authority (URA) officials. Data was collected by the use of self-administered questionnaires. The findings of the study were that the electronic tax filing system has improved tax compliance as it is easy for taxpayers to assess their tax obligation accurately and enable them file their returns on time. In addition, the new system has also helped ease the work of URA staff and to a small extent led to an increase in tax collection in URA.

The attitude of the taxpayers and that of URA staff towards the use of e-tax is positive. The new system has increased compliance costs on the taxpayer's side. The current e-tax servers are overwhelmed by the number of users hence they are slow. The electronic tax filing system has the potential of increasing tax compliance and revenue collection in URA but

a lot has to be done to avert the obstacles that may not make it possible.

Arora (2016) did a study on E-filing of Income Tax returns in India- An Overview. The study adopted the descriptive research design. Secondary data collected from books, journals and online database was used. It was found out that E-filing saves time, energy and cost. It also reduces the boundary limitations between Income Tax Department and the assesses. It has reduced the burden of record keeping and requirement of physical space. It has ensured accuracy of data and faster processing of returns. It enables the assesses to file return anytime and from anywhere. So, the tax payers are benefited by use of e-filing and e-payment services.

Kun et al. (2008) did a study on user evaluation of tax filing websites which was a comparison between Turkey and South Korea. The survey instrument that has been prepared for gauging user satisfaction was applied to the users in both countries. It was found out that beyond the usual benefits of e-government such as reducing transaction costs and providing convenience, electronic tax filing systems are useful for governments to avoid tax evasion and errors.

2.3.3 E-payment

Maisiba and Atambo (2016) did a study on the effects of Electronic Tax System on Revenue Collection Efficiency of Kenya Revenue Authority: A case of Uasin Gishu County. The study adopted the case study research design. The study targeted a population of 102 respondents who included employees of KRA and tax payers. The study used census of the 102 respondents. Data was collected by the use of questionnaires. The findings were that revenue collection has been affected upwards and KRA workers are comfortable using the process as compared with the old manual one.

The electronic system has also reduced corruption loopholes by making moist payment through mobile phones and submitting returns online. This is good for efficient revenue collection and good for faster accessibility of KRA services for the tax payer without physically visiting KRA offices. On the contrary, most tax payers complain of a difficult process, lack of electricity, internet and knowledge to access computers and related media in filing and paying their taxes. Government has not conducted any civic education to the people to train them on how to use the system leaving the job to individual tax payers.

Kamau (2014) did a study on the adoption of technology as a strategic tool in enhancing tax compliance in Kenya: A case study of Large Taxpayers of Kenya Revenue Authority. The study adopted the descriptive research design. The population that was used consisted of large taxpayers in the country who were 1,238. The sample size was 62. Primary data was collected by the use of structured questionnaires. The findings of the study were that the adoption of technology does impact on the tax compliance levels of the large taxpayers positively.

The adoption of technology has led to increased compliance levels by the large taxpayers. The study revealed that KRA has effectively implemented its ICT strategy and that majority of the large taxpayers are happy with the implementation. Secondly, it has revealed that the large taxpayers feel that the technology has helped them to easily comply with the tax laws that is filing returns and making payments in time hence increasing their tax compliance levels. Thirdly, the large taxpayers agreed to the fact that the use of technology by KRA is sustainable in enhancing tax compliance and that they would embrace it perpetually.

Okiro (2015) did a study on the effect of E-Payment System on Revenue collection by the Nairobi City County Government. The study adopted the descriptive research design. The population of the study was the 18 Nairobi County departments. Since the target population was manageable and easily accessible all the departments participated in data collection. Data was collected using structured questionnaires that were self-administered. The study found that the revenue collection performance in Nairobi City County increased considerably after introduction of e-payment system in revenue collection. The study concludes that the adoption e-payment system positively influences the revenue collection performance in Nairobi City County.

2.4 Conceptual Framework

This shows the relationship between the variables in the study. The independent variables identified are E-registration, E-filing and E-Payment and the dependent variable, Pay As You Earn tax performance has been operationalized using PAYE tax collected, PAYE returns filed and the taxpayers registered for PAYE tax obligation. This has been summarised using the figure below.

Conceptual Framework

2.5 Critique

The study by Kun et al. (2008) on user evaluation of tax filing websites was not done in a developing country but in developed countries which are Turkey and South Korea. Here majority of the taxpayers appreciate the need for tax efficiency. The study by Okiro (2015) on the effect of E-payment System on Revenue collection lacked specific objectives and a conceptual framework. The study also used primary data whereas the current study uses secondary data. This is important to note because secondary data is more reliable and credible thus the results of the current study are more realistic than those obtained by the use of primary data.

In their study on effects of online taxpayer registration and tax return processing on revenue collection at the Kenya Revenue Authority Rift Valley Region, Bett et al. (2017) used the correlational research design which is a different design from the descriptive research design used in the current study. In addition to this, primary data was used whereas in the current study secondary data was used. Similarly, primary data was used in the study by Karimi et al. (2017) on the effect of

technology and information systems on revenue collection by the county government of Embu, Kenya whereas the current study uses secondary data.

The research design used was not mentioned in the study by Pope and Abdul-Jabbar (2008) on the effects of the self-assessment system on tax compliance costs of SMEs in Malaysia. The study used primary data whereas the current study uses secondary data. Likewise, in the study by Lukwata (2011) on the influence of electronic tax filing system on tax compliance and tax collection in Uganda, primary data was used. Okoye and Ezejiofor (2014) in the study on the impact of e-taxation on revenue generation in Enugu, Nigeria used both primary and secondary data whereas the current study uses secondary data only.

2.6 Research Gaps

In the study by Maisiba and Atambo (2016) on effects of Electronic-Tax System on Revenue collection Efficiency: A case of Uasin Gishu County, the case study research design was used which is a different design from the descriptive research design used in the current study hence there is a methodological gap. The study focused on E-filing and E-payment whereas the current study looks at a different variable, E-registration in addition to these thus a conceptual gap exists. Arora (2016) in the study on E-filing of Income Tax Returns in India- An Overview focused on E-filing whereas the current study has other variables in addition to E-filing which are E-registration and E-payment which brings in a conceptual gap. The current study is done in Kenya thus there is a contextual gap. In their study on the effect of technology and information systems on revenue collection by the county government of Embu, Kenya, Karimi et al. (2017) considered Computerised Information Systems as a whole whereas the current study focuses on E-registration, E-filing and E-payment hence there is a conceptual gap.

Pope and Abdul Jabbar (2008) did a study on the effects of self-assessment system on the tax compliance costs of SMEs in Malaysia. The current study considers the effect of technological uptake on revenue performance therefore there is a conceptual gap. In addition, the current study is done in Kenya hence a contextual gap exists. A conceptual gap exists in the study by Kun et al. (2008) on user evaluation of tax filing websites as it focused on E-filing whereas the current study looks into E-registration and E-payment in addition to this. The study was carried out in Turkey and South Korea which brings in a contextual gap.

3. Methodology

This chapter contains the methods and procedures used in conducting the study. This includes the research design, population, sampling frame, data collection procedure, reliability test and data analysis.

3.1 Research Design

According to Kothari (2004), a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. It is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data. This study adopted the descriptive design. Sekaran (2003) notes that this design offers to the researcher a profile or describes relevant aspects of the phenomena of interest from an individual, organizational, industry-oriented, or other perspective.

The advantages of this research design as noted by Sekaran (2003) is that it presents data in a meaningful form thus it helps one to understand the characteristics of a group in a given situation and it helps one to think systematically about aspects in a given situation. This design also offers ideas for further probe and research and helps one to make certain simple decisions (such as how many and what kind of individuals should be transferred from one department to another). This made it the most suitable research design to be used for this study. Arora (2016) applied a similar approach while doing a study on E-filing of Income Tax Returns in India.

3.2 Population

The target population of this study comprises of all the medium taxpayers registered under the Medium Taxpayers Office (MTO) of Kenya Revenue Authority. According to KRA iTax records (2017), there were 3,972 taxpayers registered under this station.

3.3 Sampling Frame

Kothari (2004) defines sampling as the process of selecting a sample from the population. The study used a census of the 3,972 registered medium taxpayers where the total number of monthly transactions (activations) for 56 months were targeted.

3.4 Data Collection Procedure

For the case of E-registration, secondary data was collected by the researcher from KRA records and reports published periodically on the number of taxpayers registered for PAYE tax obligation in MTO. This data was for a period of five years from 2014 to July, 2018. After the data was collected it was arrayed in tables, graphs and charts for the purpose of analysis. For E-filing, secondary data was collected by the researcher from KRA records and reports published periodically on the number of PAYE returns filed by taxpayers in MTO. This data was for a period of five years from 2014 to August, 2018. After the data was collected it was arrayed in tables, graphs and charts for the purpose of analysis.

Secondary data on the number of transactions completed on the payment gateway by taxpayers in MTO was used for the variable E-payment. This data was collected by the researcher from KRA records and reports published periodically for a period of five years from 2014 to September, 2018. After the data was collected it was arrayed in tables, graphs and charts for the purpose of analysis. Finally, for the variable PAYE tax performance, secondary data on the PAYE tax collected by

MTO was used. This data was collected by the researcher from KRA records and reports published periodically for a period of five years from 2014 to August, 2018. After the data was collected it was arrayed in tables, graphs and charts for the purpose of analysis.

3.5 Reliability Test

Reliability is a measure of stability and consistency with which instrument measures the concept (Sekaran, 2003). According to Mugenda and Mugenda (2003), this is important because if the data is the true reflection of the variables, then inferences based such data will be accurate and meaningful. This study adopted the Cronbach Alpha coefficient to test the reliability of the measures used in the instrument. Cronbach alpha coefficient values of 0.7 and above are acceptable as a measure of internal consistency (Nunnally, 1978). A commonly accepted rule of thumb for describing internal consistency using Cronbach's Alpha is shown in the table below.

Table 3.1: Cronbach's Alpha Measures

3.6 Data Analysis

Descriptive statistics were used to compute frequencies and percentages with a view of evaluating patterns. The results were presented using tables, charts and graphs. In addition to this inferential statistics were done. The Statistical Package for Social Sciences (SPSS) version 20 was used in data analysis. This study carried out regression analysis with the use of the analytical model to explain the relationship between the variables. The linear regression is given by the equation below,

$Y=\beta oXo + \beta 1X1 + \beta 2X2 + \beta 3X3 + \square$

Where

Y= Pay As You Earn Tax performance (Dependent variable)

X=Independent Variables

X1= E-registration

X2=E-filing

X3= E-payment

βo= Constant

β1, β2 and β3 are coefficients of the Independent Variables

□= error term

4. Data Analysis and Interpretation

This chapter presents the data analysis which involves both the descriptive and inferential statistical analysis. It presents the results and findings as analysed on the three research objectives. The general objective of this study was to investigate the effect of technological uptake on Pay As You Earn (PAYE) tax performance from Medium Taxpayers at the Kenya Revenue Authority in Kenya. The results were presented in tables, bar charts and bar graphs.

4.2 Study Population

The study targeted the technological uptake on revenue streams that constituted Pay As You Earn tax from the medium taxpayers of Kenya Revenue Authority. Secondary data extracted from the revenue reports was used for the analysis where the total number of monthly transactions (activations) for 56 months were targeted. This data ranged from monthly PAYE obligations registrations, monthly PAYE returns filed, monthly payment gateway transactions and monthly PAYE revenue collected from reports starting from the year 2014 to 2018 focusing on uptake of e-registration, e-filing, e-payment and PAYE tax performance as the variables of analysis.

4.3 Descriptive Statistical Analysis

The study utilized the secondary data sources; the data for the five years was summarized per year as shown in Table 4.1 below

Table 4.1: Summary of the Data Collected

The quarterly report was summarized per year and presented as shown in Table 4.1.

4.3.1 Descriptive Statistics on E-registration

The first variable of study was technological uptake on PAYE obligation registration; this was obtained from the monthly statistics of the number of taxpayers that had registered PAYE tax obligation in MTO for a period of five years from 2014 to July, 2018. This variable was important in the determination of the uptake of technology for revenue collection. The results of the study established that the highest number of PAYE tax obligation registration were recorded in 2015 with 172 tax payers, this was followed with year 2014, which registered 115 taxpayers, 2016 registered 83, 2017 with 52 and year 2018 with only 26 taxpayers. The findings were presented in Table 4.2

Table 4.2: PAYE Obligation Registrations

The findings show that there was a high uptake of PAYE registration in MTO in year 2015 and 2014 respectively. The monthly distribution of the PAYE obligation Registration is detailed in figure 4.1 below.

Figure 4.1: Monthly Analysis of PAYE Obligation Registrations

Figure 4.1 shows that there was a gradual reduction in the PAYE tax registration after 2015. In 2015, there was a spike in the PAYE obligation registrations for the months of July and August. The PAYE obligation registration ranged from 0 to 18 except the two spikes in July and August of 2015.

4.3.2 Descriptive Statistics on E-filing

Another important aspect of the study was the uptake of e-filing. This was measured on the number of PAYE tax returns filed by taxpayers in MTO from 2014 to August, 2018 and the findings were presented in chart format. This variable was important in the determination of the uptake of e-filing technology for revenue administration. The results of the study established that year 2017 had the highest returns of 41,581, this was followed by 2016 with 38,422, year 2018 with 28,874, 2015 with 24,836 and year 2014 with 6,746 respectively. The findings are presented in Table 4.3.

Table 4.3: E-filing uptake

The findings show that there was a gradual increase in PAYE tax returns from the year 2014 to 2017, an indication of improved uptake of e-filing technology by taxpayers for tax reporting for enhanced compliance in MTO. The monthly distribution of the PAYE tax filing is detailed in Figure 4.2 below.

Figure 4.2: Monthly Analysis of e-filing on PAYE

Figure 4.2 shows that there was a gradual increase of e-filing of PAYE tax by taxpayers in MTO. The number of tax payers complying with e-filing ranged from 299 to 3,752.

4.3.3 Descriptive Statistics on E-payment

Another important aspect of the study was the uptake of e-payment. This was measured on the number of transactions completed on the payment gateway via e-slips by taxpayers in MTO from 2014 to September, 2018 and the findings were presented in chart format. This variable was important in the determination of the uptake of e-payment technology to complete payment transaction to settle tax obligations. The results of the study established that year 2017 had the highest number of transactions via the KRA Payment Gateway of 37,394; this was followed by 2016 with 36,872, year 2018 with 26,635, 2015 with 22,313 and year 2014 with 4,851 respectively. The findings are presented in Table 4.4.

Table 4.4: E-payments uptake

The findings show that there was a gradual increase in the number of transactions completed by taxpayers to settle tax obligations from the year 2014 to 2017, an indication of increased uptake of e-payment technology by taxpayers for tax payments in MTO. The monthly distribution of the payments are detailed in Figure 4.3 below.

Figure 4.3: Monthly Analysis of E-payments on PAYE

Figure 4.3 shows that there was a gradual increase of payment transactions on payment gateway platform by taxpayers in MTO. The number of taxpayers complying with e-payment ranged from 40 to 3,139.

4.3.4 Descriptive Statistics on PAYE Tax performance

The last variable of the study was the PAYE tax performance measured on the PAYE tax revenue collected by MTO from 2014 to August, 2018 and the findings were presented in chart format. This variable was important in the determination of the performance of PAYE tax revenue. The results of the study established that, year 2017 had the highest revenue of Kshs. 45,904,208,327, this was followed by 2016 with Kshs. 42,277,080,931, year 2018 with Kshs. 33,039,315,416, Year 2015, with Kshs. 23,923,041,171 and lastly year 2014 with Kshs. 6,643,767,081. The findings are presented in Table 4.5.

Table 4.5: PAYE revenue performance

The findings show that there is gradual revenue growth enabled by technological uptake by taxpayers in MTO. The monthly distribution of the PAYE revenue per month is detailed in Figure 4.4

Figure 4.4: Monthly PAYE Revenue Performance

Figure 4.4 shows that there was a gradual increase of PAYE revenue collected from 2014 to 2017.The monthly PAYE revenue ranged from Kshs.9,427, 238 to Kshs. 5,105, 869,740.

4.4 Inferential Statistical Analysis

The Inferential statistics was used in the correlation and regression analysis based on the objectives of the study. The correlation analysis measure the relationship between the Independent Variable and the dependent variable whereas regression analysis explains the causal relationship.

4.4.1 Effect of E-registration on PAYE Tax Performance

This section of the study sought to establish whether there is statistically significant relationship between e-registration on PAYE performance in MTO of the Kenya Revenue Authority. The findings were obtained by the regression of the number of taxpayers who registered for PAYE obligations and PAYE revenue collected from 2014 up to 2018 and the findings are presented as shown in Table 4.2

Table 4.6: Effect of E-registration on PAYE Tax Performance

a. Dependent Variable: PAYE_Payments

b. Predictors: (Constant), E-Registrations

The first objective of the study was to establish the effect of e-registration on PAYE tax performance from medium taxpayers in Kenya. The results of the analysis in Table 4.6 show that E-registration uptake correlates with PAYE tax performance up to 39.2% (R= 0.392) which is a weak positive correlation leading to a variation of 15.3% (R2=0.153) which means that 15.3% of the variation in the data is explained for by the regression model. The remaining 84.7% of the variation in the data is explained by other factors not included in the model. This proportion that is explained by e- registration uptake is statistically significant (F value = 9.789 at p-value = 0.003 which is less than 0.05) thus there is sufficient evidence that there is a relationship between e-registration uptake and PAYE tax performance.

This relationship was expressed in the following equation:

PAYE Tax Performance = 3,426,722,659.972 – 89,529,142.929 e-registration uptake

In the coefficient table, a unit change in e-registration uptake yields – 89,529,142.929 negative changes on PAYE Tax Performance. However, this change is statistically significant, meaning that e-registration uptake influences PAYE tax performance significantly. This finding is consistent with the study by Bett et al. (2017) on online taxpayer registration and tax return processing which found that taxpayer registration and online return processing had a significant contribution to revenue collection at KRA.

4.4.2 Effect of E-filing on PAYE Tax Performance

The second objective of the study sought to determine whether there is statistically significant relationship between e-filing uptake on PAYE tax performance in MTO of the Kenya Revenue Authority. The findings were obtained by the regression of the number PAYE returns transactions filed

from the year 2014 to 2018 and PAYE tax performance and the findings are presented as shown in Table 4.7.

Table 4.7: Effect of E-filing on PAYE Tax Performance

a. Dependent Variable: PAYE_Payments

b. Predictors: (Constant), E_filing

The results of the analysis in Table 4.7 show that E-Filing Uptake correlates with PAYE tax performance up to 96.2% (R=0.962) which is a strong positive correlation leading to a variation of 92.5% (R2=0.925) which means that 92.5% of the variation in the data is explained for by the regression model. The remaining 7.5% of the variation in the data is explained for by other factors not included in the model. This proportion that is explained by e-filing uptake is statistically significant (F value = 652.571 at p-value = 0.000 which is less than 0.05) hence there is sufficient evidence that there is a relationship between the uptake of e-filing and PAYE tax performance.

This relationship was expressed in the following equation:

PAYE Tax Performance = -300,604,101.221+ 1,172,692.872 E-filing uptake

In the coefficient table, a unit change in E-filing uptake yields 1,172,692.872 positive changes on PAYE tax Performance. This change is statistically significant, meaning that e-filing uptake influences PAYE tax performance positively. This finding is consistent with the study by Lukwata (2011) on electronic tax filing system which found that the new system has helped ease the work of URA staff and to a small extent led to an increase in tax collection in URA. The electronic tax filing system has the potential of increasing tax compliance and revenue collection in URA but a lot has to be done to avert the obstacles that may not make it possible.

4.4.3 Effect of E-payment on PAYE Tax Performance

The last objective of the study sought to establish whether there is statistically significant relationship between E-Payment uptake on PAYE tax performance in MTO of the Kenya Revenue Authority. The findings were obtained by the regression of the number of e-slips generated for PAYE tax transactions on the payment gateway and PAYE tax performance, the findings are presented as shown in Table 4.8.

Table 4.8: Effect of E-payment on PAYE Tax Performance

The results of the analysis in Table 4.8 show that e-payment uptake correlates with PAYE tax performance up to 96.1% (R=0.961) which is a strong positive correlation leading to a variation of 92.3% (R2=0.923) which means that 92.3% of the variation in the data is explained for by the regression model. The remaining 7.7% of the variation in the data is explained by other factors not included in the model. The proportion that is explained by e-payment uptake is statistically significant (F value = 648.708 at p-value = 0.000 which is less than 0.05) thus there is sufficient evidence that there is a relationship between the uptake of E-payment and PAYE tax performance.

This relationship was expressed in the following equation:

PAYE Tax Performance = 33,878,197.586 + 1,187,258.781 e-payment uptake

In the coefficient table, a unit change in e-payment uptake yields 1,187,258.781 positive changes on PAYE tax Performance. This change is statistically significant, meaning that e-payment uptake influences on PAYE tax performance positively. This finding is consistent with the study by Maisiba and Atambo (2016) on Electronic Tax System which found that revenue collection has been affected upwards and KRA workers are comfortable using the process as compared to the old manual one. The electronic system has also reduced corruption loopholes by making moist payment through mobile phones and submitting returns online.

Similarly, this finding is consistent with the study by Okiro (2015) on the E-payment System which found that the revenue collection performance in Nairobi City County increased considerably after introduction of e-payment system in revenue collection. The study concluded that the adoption of the e-payment system positively influences the revenue collection performance in Nairobi City County.

4.4.4 Effect of Technological Uptake on PAYE Tax Performance

Table 4.9 leads to the overall equation on the effect of technology on PAYE tax performance.

Table 4.9: Effect of Technological uptake on PAYE Tax Performance

Overall the results of the analysis in Table 4.9 show that technological uptake correlates with PAYE tax performance up to 96.7% (R= 0.967) which is a strong positive correlation leading to a variation of 93.4% (R2=0.934) which means that 93.4% of the variation in the data is explained for by the regression model. The remaining 6.6% of the variation in the data is explained for by other factors not included in the model. The proportion that is explained by technological uptake is statistically significant (F value = 241.725 at p-value = 0.000 which is less than 0.05) hence there is sufficient evidence that there is a relationship between technological uptake and PAYE tax performance.

This overall relationship was expressed in the following equation:

PAYE Tax Performance = 3,417,880,409.665 – 17,512,546.658 e-registration + 812,270.071 e-filing + 340, 655.770 e-payment

In the coefficient table, a unit change yields 17,512,546.658 negative change in e-registration uptake, 812,270.071 positive change in e-filing uptake and 340, 655.770 positive change in e-payment uptake on PAYE tax performance. This change is statistically significant, meaning that e-registration uptake, e-filing uptake and e-payment uptake influence on PAYE tax performance significantly. This finding is consistent with the study by Okoye and Ezejiofor (2014) on e-taxation which found that E-taxation can enhance internally generated revenue and reduce the issue of tax evasion in Enugu state.

Similarly, this finding is consistent with the study by Karimi et al. (2017) on technology and information systems which found that computerized Information Systems had a positive effect on revenue collection.

5. Summary, Conclusions and Recommendations

This chapter is the synthesis of the entire study and contains summary of the findings, discussions of the findings, conclusions arrived, recommendations for improvement, and recommendations for further studies. This chapter explains the extent to which the research objectives have been achieved. The study focused on effect of technological uptake on PAYE tax performance at the Medium Taxpayer Office of Kenya Revenue Authority.

5.2 Summary

This study used secondary data to measure variables which were essential to the research problem. The variables included data on e-registration, e-filing, e-payment and PAYE revenue collected at MTO of Kenya Revenue Authority as the variables measures. The data and information was obtained through desk research on corporate plans, revenue records and automation uptake reports which were first checked for accuracy and completeness. The collected data was then coded appropriately and thereafter analysed using SPSS 20.0. The data collected was presented in tables, graphs and charts. Descriptive statistics were used during the analysis to compute frequencies and percentages with a view of evaluating the patterns and illustrated in graphical format. The data was also analysed using regression analysis to establish the strength of the relationship between the study variables as conceptualized in the conceptual framework.

5.2.1 Effect of E-registration on PAYE Tax Performance

The first objective of the study sought to establish whether the effect of e-registration uptake impacts on PAYE tax performance at MTO of Kenya Revenue Authority. The regression results indicated that, in the coefficient table, a unit change in e-registration uptake yields – 89,529,142.929 negative changes on PAYE Tax Performance. However, this change was statistically significant, meaning that e-registration uptake influences PAYE tax performance significantly.

5.2.2 Effect of E-filing on PAYE Tax Performance

The second objective of this study sought to determine the effect of e-filing uptake on PAYE tax performance at MTO of Kenya Revenue Authority. In the coefficient table, a unit change in E-filing uptake yields 1,172,692.872 positive changes on PAYE Tax Performance. This change was also statistically significant, meaning that e-filing uptake influences PAYE tax performance positively.

5.2.3 Effect of E-payment on PAYE Tax Performance

The third objective of the study sought to establish the effect of e-payment uptake on PAYE tax performance. In the coefficient table, a unit change in e-payment uptake yields 1,187,258.781 positive changes on PAYE Tax Performance. This change is statistically significant, meaning that e-payment uptake influences on PAYE tax performance positively.

5.2.4 Effect of Technological Uptake on PAYE Tax Performance

Overall, when combined together, a unit change yields 17,512,546.658 negative change in e-registration uptake, 812,270.071 positive change in e-filing uptake and 340, 655.770 positive change in e-payment uptake on PAYE tax performance. This change is statistically significant, meaning that technological uptake influences PAYE tax performance significantly.

5.3 Conclusions

This study concluded that, all the variables of study, e-registration, e-filing and e-payment had a positive and statistically significant relationship with PAYE tax performance. The finding indicates that technology has a positive and a statistically significant influence on PAYE tax performance.

5.4 Limitations of the Study

In the course of the research there were challenges in getting the data that was required and the diplomacy of the supervisor had to be employed to get through to KRA so as to get the data. The study was not able to publish the individual performances of the taxpayers. It was limited to the overall performance figures due to the confidentiality clause under Section 6 of the Tax Procedures Act, 2015. This study was limited to the medium taxpayers registered under the Medium Taxpayers Office (MTO) of Kenya Revenue Authority. The study could have brought more insight if it covered more tax revenue jurisdictions of KRA such as large taxpayers. This study relied on quantitative data, which is limited, and the study could have gotten more insight on the state of affairs if it could have used the qualitative data, which was a limitation to this study.

This study used one dependent variable PAYE tax collected, it could have provided a wider perspective if it included other revenue streams like VAT, income tax and excise duty. The study used secondary data from only KRA, the resource and time limitation did not allow for comparative data from other revenue authorities. Despite this the study collected monthly streams of data which was carefully checked for errors and analysed to ensure validity of data was mentioned and findings represented the realities on the ground for generalization.

5.5 Recommendations

It was found that use of technology has a statistically significant relationship with PAYE tax performance of Kenya Revenue Authority. The study therefore recommends that KRA should scale up the use of technology in all tax streams to enhance tax revenue collection and performance.

This study also observed that there was a consistent growth in the uptake of technology from the year 2014 to 2017, the

study thus recommends concerted effort from the KRA management on creating awareness of the tax systems, to consistently and incrementally grow technology, while managing change to enhance uptake. This study also recommends that during the upgrade or change over, KRA should manage the stages seamlessly to ensure that the momentum of the uptake does not stagnate.

5.6 Suggestions for Further Studies

The study recommends the following as areas for further research; to begin with a similar study can be carried out in a wider study population by including more divisions instead of only MTO. These divisions include the Large Taxpayers Office (LTO), the Regions and the Public Service Department (PSD) which are part of the Domestic Taxes Department. Secondly, there were gaps observed in uptake of the technology where growth was not linear and consistent, hence a study should be commissioned to establish the cause of the lapse hence providing deeper insight as part of the extension of this study. In addition to this, other variables not considered can also be used to check if they can bring other results.

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Annex

Independent Variable **Dependent Variable**

Technological uptake **PAYE Tax Performance**

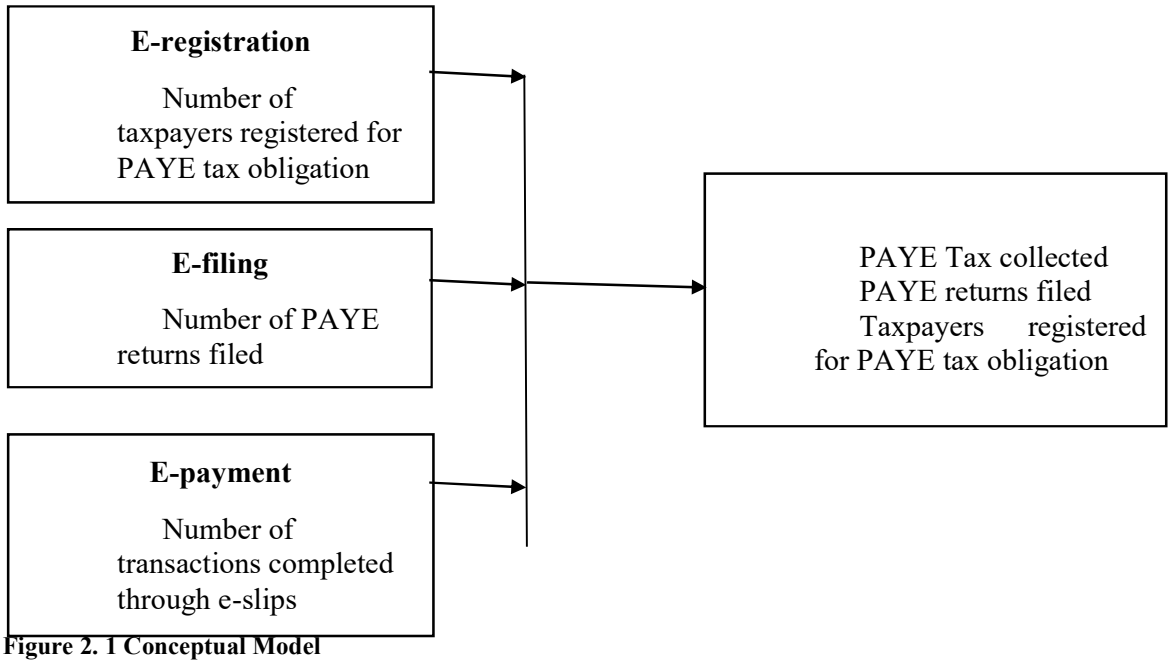


Figure 2. 1 Conceptual Model

Source: Researcher 2018

Table 3.1: Cronbach's Alpha Measures

Cronbach's Alpha Measures	
Cronbach's alpha	**Level of Internal consistency**
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor

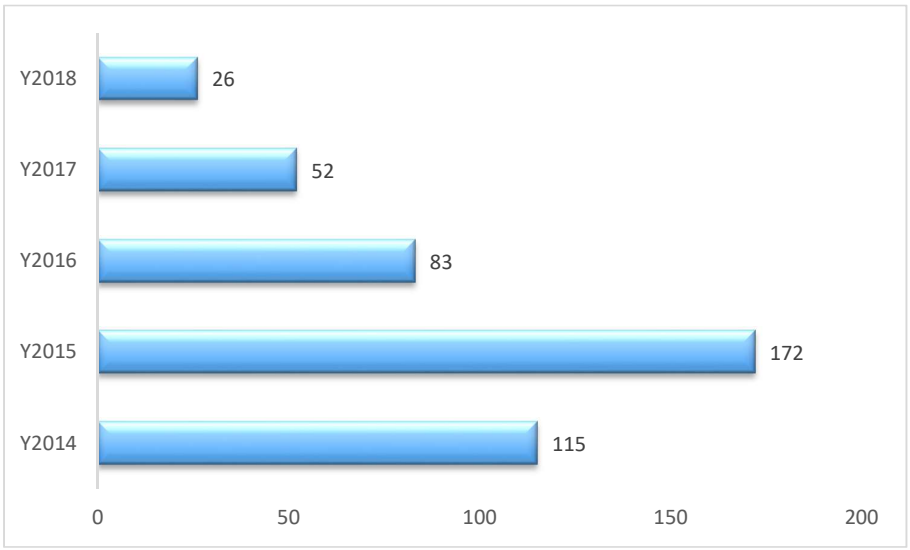
Source: Gliem & Gliem (2003)

Table 4.1: Summary of the Data Collected

Year	Annual e-registration	Annual e-filing	Annual e-payments	Annual PAYE performance
2014	115	24,836	4,851	6,643,767,081

2015	172	38,422	22,313	23,923,041,171
2016	83	41,581	36,872	42,277,080,931
2017	52	28,874	37,394	45,904,208,327
2018	26	6,746	26,635	33,039,315,416

Table 4.2: PAYE Obligation Registrations



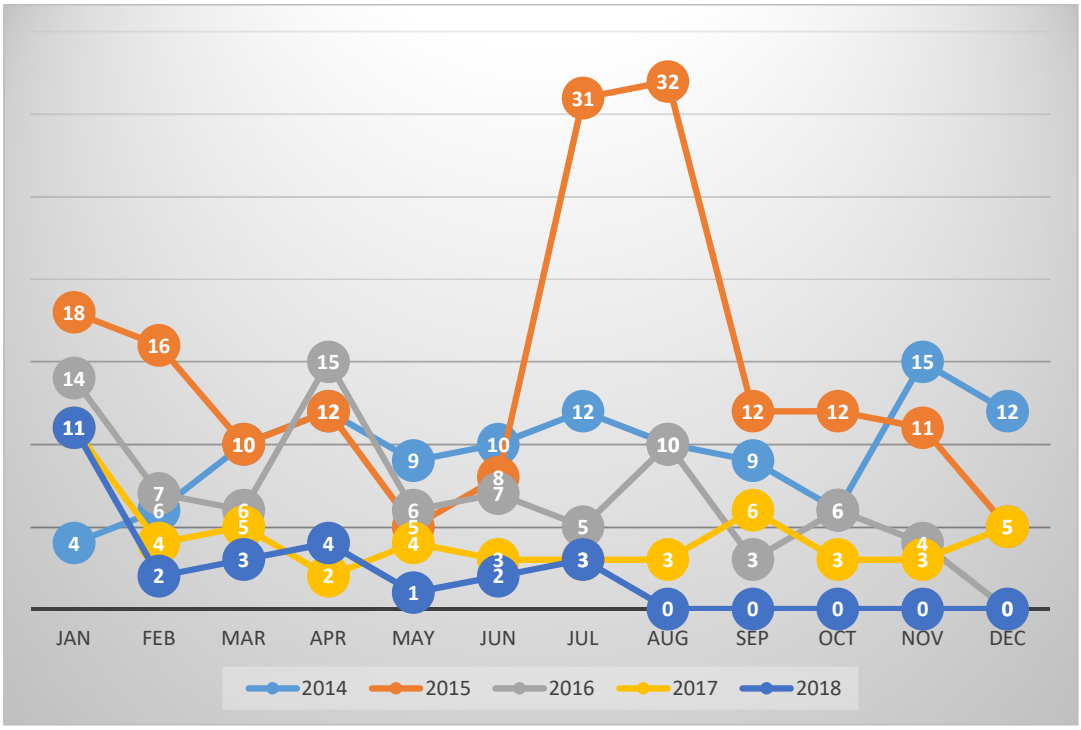
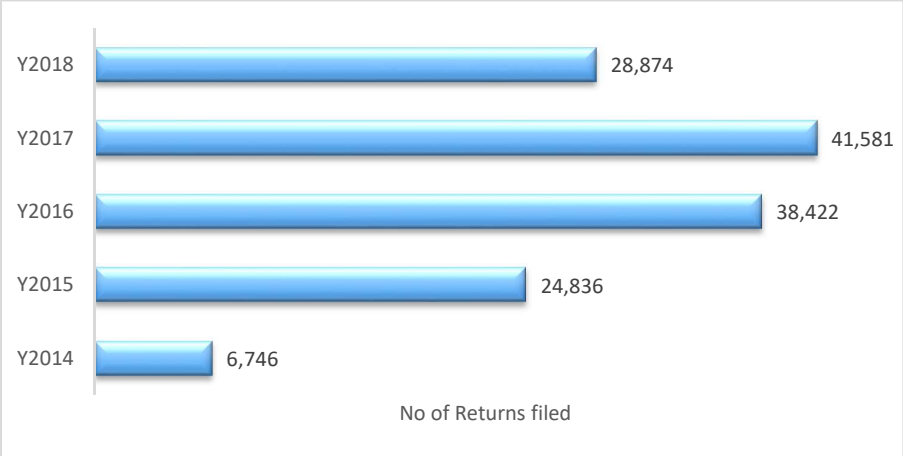


Figure 4.1: Monthly Analysis of PAYE Obligation Registrations

Table 4.3: E-filing uptake



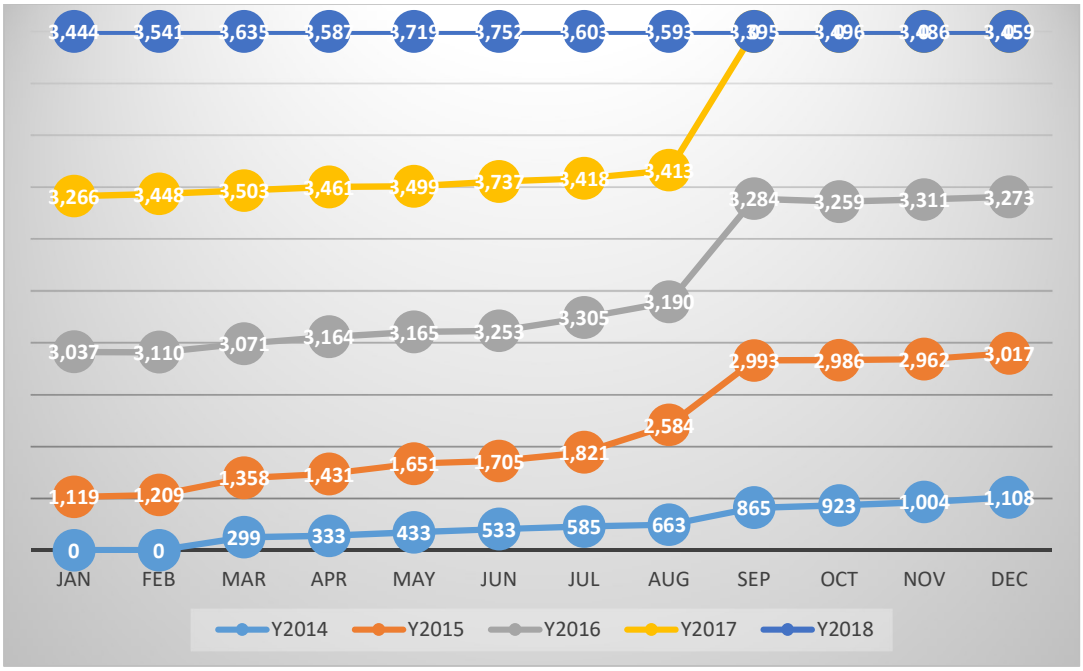
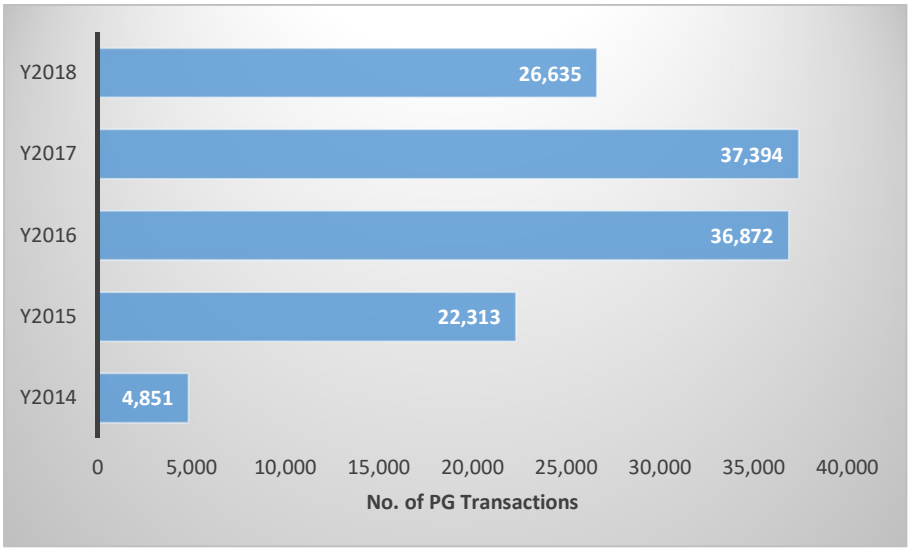


Table 4.4: E-payments uptake



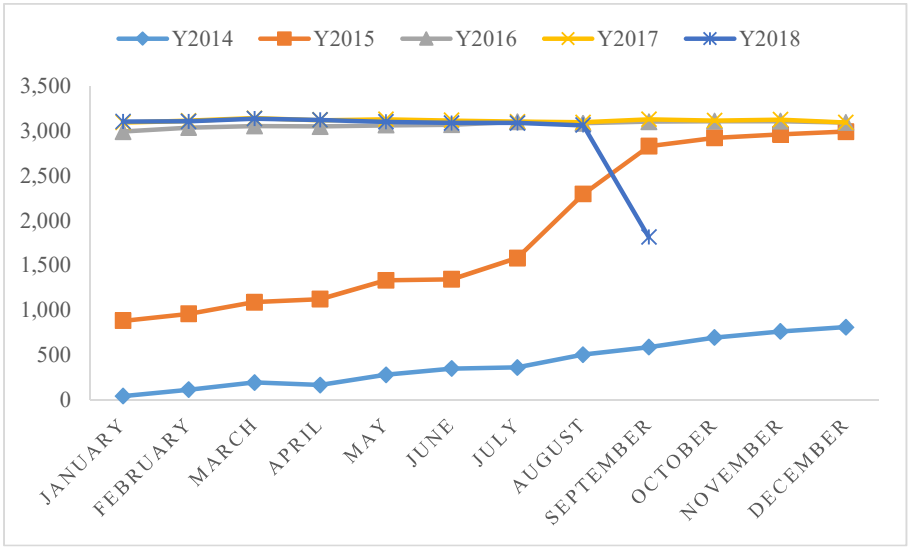
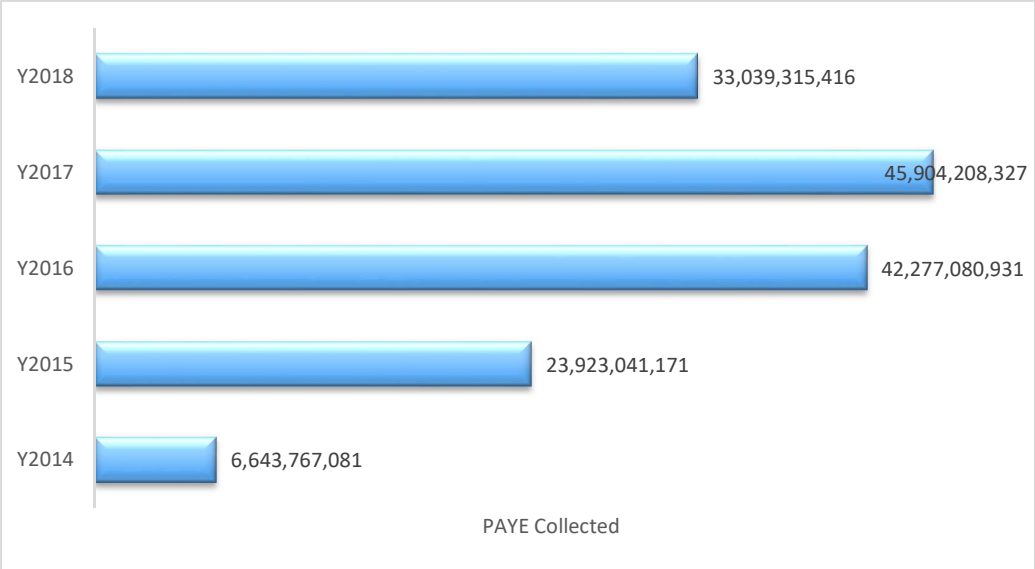


Figure 4.3: Monthly Analysis of E-payments on PAYE

Table 4.5: PAYE revenue performance



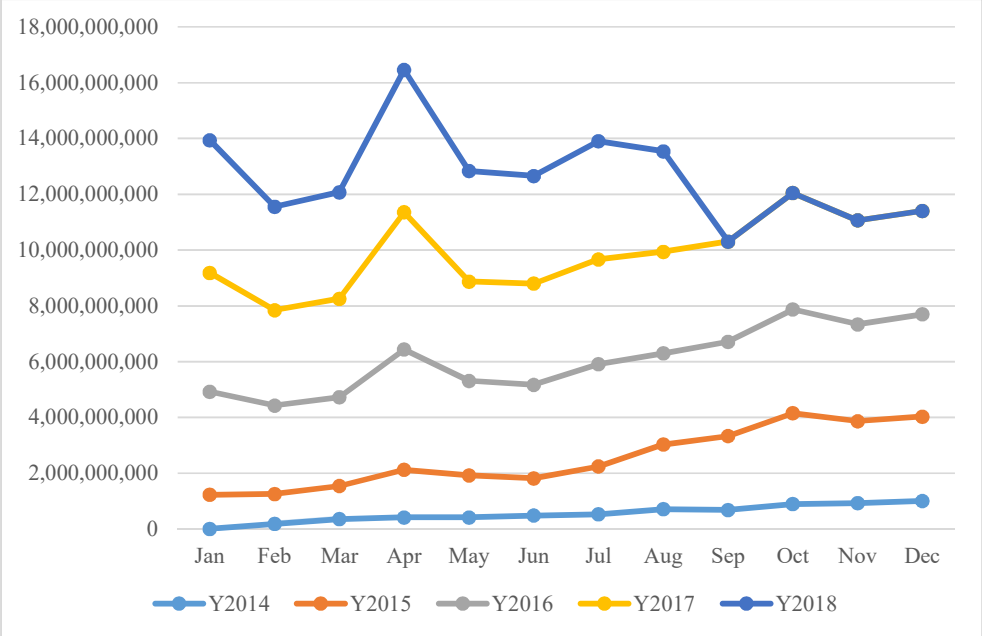


Figure 4.4: Monthly PAYE Revenue Performance

Table 4.6: Effect of E-registration on PAYE Tax Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.392[a]	.153	.138	1337287933.938

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	175057808751757900000.000	1	175057808751757900000.000	9.789	.003[b]
	Residual	965703069857617000000.000	54	178833901825484621 0.000		
	Total	114076087860937490000.000	55			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3426722659.972	290413781.220		11.799	.000
	E_Registration	-89529142.929	28615320.142	-.392	-3.129	.003

a. Dependent Variable: PAYE_Payments
b. Predictors: (Constant), E-Registrations

Table 4.7: Effect of E-filing on PAYE Tax Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.962[a]	.925	.923	400653747.640

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1047529741992607900000.000	1	1047529741992607900000.000	652.571	.000[b]
	Residual	8507741551395000300.000	53	160523425498018880.000		
	Total	1132607157506557900000.000	54			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-300604101.221	129083876.417		-2.329	.024
	E_filing	1172692.872	45906.091	.962	25.545	.000

a. Dependent Variable: PAYE_Payments
b. Predictors: (Constant), E_filing

Table 4.8: Effect of E-payment on PAYE Tax Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.961[a]	.923	.922	4.029E8

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.053E20	1	1.053E20	648.708	.000[a]
	Residual	8.766E18	54	1.623E17		
	Total	1.141E20	55			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33878197.586	1.181E8		.287	.775
	E_payments	1187258.781	46614.475	.961	25.470	.000

a. Predictors: (Constant), E_payments
b. Dependent Variable: PAYE_Payments

Table 4.9: Effect of Technological uptake on PAYE Tax Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.384[a]	.148	.132	1349610791.572
2	.966[b]	.933	.930	383125844.190
3	.967[c]	.934	.930	381996760.764

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1672390344808289700 0.000	1	1672390344808289700 0.000	9.182	.004[b]
	Residual	9653681230257290000 0.000	53	1821449288727790590.000		
	Total	1132607157506557900 00.000	54			
2	Regression	1056278743013513600 00.000	2	5281393715067568000 0.000	359.804	.000[c]
	Residual	7632841449304417300.000	52	146785412486623424.000		
	Total	1132607157506557900 00.000	54			
3	Regression	1058187179637229300 00.000	3	3527290598790764000 0.000	241.725	.000[d]
	Residual	7441997786932857900.000	51	145921525233977600.000		
	Total	1132607157506557900 00.000	54			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3417880409.665	300255598.899		11.383	.000
	E_Registration	-88842366.207	29319721.003	-.384	-3.030	.004
2	(Constant)	-36221952.126	164206156.944		-.221	.826
	E_Registration	-21393578.860	8762855.647	-.093	-2.441	.018
	E_filing	1137403.607	46216.332	.933	24.610	.000
3	(Constant)	-478525.186	166678836.268		-.003	.998
	E_Registration	-17512546.658	9372973.310	-.076	-1.868	.067
	E_filing	812270.071	288013.882	.666	2.820	.007
	E_payments	340655.770	297876.717	.275	1.144	.258

a. Dependent Variable: PAYE_Payments

b. Predictors: (Constant), E_Registration

c. Predictors: (Constant), E_Registration, E_filing

d. Predictors: (Constant), E_Registration, E_filing, E_payments