

## A review on electronic tax payments, use of technology and challenges of using the electronic tax system

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### ABSTRACT

Electronic revenue collection in developing countries has gained increasing prominence in the policy debate recently. The recent trends in public taxation stress the need of developing a system of tax assessment and collection that involves internet services. Technological innovations have not filtered through to the daily working reality of tax officials. Technology is considered to be an efficient tool when used properly; otherwise it is likely to become a problem that needs solving, rather than the solution. In Africa predominantly, there are challenges such as intermittent power supply and Internet outages, but in Uganda particularly, the tax body has made contingency plans to ensure that the system is operational 24/7.

Keywords: Electronic, tax payments, technology and challenges.

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### INTRODUCTION

As an integral of e-governance, Electronic revenue collection in developing countries has gained increasing prominence in the policy debate recently [1]. For instance [2], argued that recent trends in public taxation stress the need of developing a system of tax assessment and collection that involves internet services. Several factors explain this, including the potential benefits of taxation for state building; independence from foreign aid; the fiscal effects of trade liberalization; the financial and debt crisis in the "West"; and the acute financial needs of developing countries [3]. Governments in developing countries face great challenges in collecting tax revenues, which result in a gap between what they could collect and what they actually collect. One of the challenges according to [4], is the embracing of emerging technologies and tax payment methods that are more efficient so as they can reduce wastage. One of the technologies they argue is electronic tax system which so far has been embraced by the Nigeria's Federal Inland revenue service (FIRS). The electronic tax system has been around, globally, for the last 30 years [5]. Its history began in 1986 as a small test program in which only 5 tax payers from Cincinnati, Raleigh Durham, and Phoenix agreed to participate. Since then, electronic tax system has grown to become common place, serving millions of taxpayers every year [6]. On 20th June, 2016, the Federal Inland Revenue Service (FIRS) rolled out three electronic-tax

payment platforms (ePPs) to enable taxpayers remit their taxes online through online payment portals. The FIRS had introduced the Integrated Tax Administration System (ITAS) project in 2013 aimed at simplifying the tax compliance process in Nigeria. ITAS envisages the provision of electronic platforms for taxpayers to remit taxes, generate tax clearance certificates, and get instant credit for withholding taxes amongst others [7]. There is an active drive for increased tax revenue. While the e-platforms will make tax remittances easier, they also provide additional justification for the FIRS to impose penalties and interest for defaults. In our daily lives, payment systems that involve cash, cheque, debit card, credit card, etc., in those systems of payments that involve electronic transaction, there is an embedded electronic identity in form of numbers, these numbers can uniquely identify an individual. Nigerian Financial Policy makers have introduced Bank Verification Number (BVN) as a compulsory authentication number for every account holder in Nigeria's financial institution [8]. These systems suffer from common problem of identifying authorized person. The system may give chance to fraudulent person if he/she knows your password or Security PIN. Owing to this, we have to look towards the next generation payment system i.e., biometric system. Biometric uses human's physiological characteristics and sometime

uses behavioral characteristics [9]. This researcher is therefore motivated by the above background to design and implement an electronic tax payments system that furthers the authentication process by implementing additional security barrier of biometric authentication. The biometric trait of choice is the finger print, and this will come as a second identity check after BVN authentication. The taxpayers' compliance on the e-tax payment methods is envisaged

#### Electronic Tax Payments

There have been several studies concerning the electronic tax payments across the globe, [10] did a study Benefits of a computerized integrated system for taxation in Tanzania. They argued that Taxation is often the most important source of state revenue. However, many developing countries lack effective tax administration structures and processes. Technological innovations have not filtered through to the daily working reality of tax officials. They concluded that Computerization of tax and revenue authorities can contribute to reaching the goal of good (financial) governance. It improves accountability and transparency of the revenue authorities. Nevertheless, while reforming and modernizing the tax system is an essential part of improving domestic resource mobilization, such a reform will be sustainable only in conjunction with more profound changes in the administrative and political structure of a state. [11], did an assessment of the impact of electronic tax register on revenue collection by Kenya Revenue Authority western region, Kenya. Findings from their study indicated that 75% of the respondents were of the opinion that ETR (Electronic Tax Register) machines have helped to curb cases of tax evasion 86% of the respondents were of the opinion that ETRs have helped increase revenue collection due to their efficient nature. [12], did a study on the tax buoyancy and income-elasticity of Kenya's tax system. Tax revenues from various sources were regressed on their tax bases. The study concluded that the tax system had failed to raise necessary revenues. However, the shortcomings of the study were that it never considered other important determinants of tax revenue, for instance the unusual circumstances that could have affected tax. It also never disregarded tax revenue data by source; hence, it was difficult to say which tax bases contributed more to the exchequer. Finally, it

to increase dramatically when their fear of online identity theft is allayed. The effects of this electronic system in FIRS services provision, more specifically on the area of efficient revenue collection, can never be over emphasized. The researcher has chosen the system as a way of addressing the Nigerian unique challenge of 'proliferation of internet and online activities' without equivalent online security, data integrity, data privacy and data protection.

never considered the time series properties of the data used.

[5] looked at the impact of electronic tax systems on Tax Administration in Nigeria. He argued that the dwindling global fortune occasioned by the fall in the price of crude oil, the major source of wealth for Nigeria shifted the attention of the government and major stakeholders in the country to the revenue generated locally. But the daunting task of boosting the Internally Generated Revenue necessitates the adoption of electronic tax systems technologies to drive Tax administration and concluded that electronic tax systems plays an important role in the increase of internally generated revenue in Nigeria by ensuring compliance thereby boosting productivity and economic activities in the country. It is a change agent for accelerated growth and poverty reduction in Nigeria and the whole of African continent at large. The major recommendation from their study was that necessary laws and regulations have to be passed by the appropriate authorities to reduce or abolish import taxes on information technology hardware such as computers, Servers, printers, biometric scanners and other devices.

[4] itemized the benefit of using information technology to manage the operations and delivery of public sector institutions to include:improvement in administrative efficiency, effectivenessand productivity, improvement in service delivery,reduction in administrative, operational and transactionalcosts of public and provision of access to information at reduced cost. In relation to taxation, significance of these use of IT is infinite, some of which are; areduction in the overhead cost oftax management and administration, instant tax filling, self-assessment, registration, computation of tax liability and generation of tax identification

number, reduction in fraudulent activities, non-remittance of generated tax and other corrupt practices, and a boost in the revenue generation. [8], opined that the anticipated benefits of implementing an information technology system include improvements in productivity, better profit performance, and

a higher degree of accuracy of information. Productivity typically improves in organizations which implement information technology, although there can be some loss of productivity during the "learning curve."

#### Electronic Tax System in Nigeria

Study by [7] showed that Nigeria Interbank Settlement System (NIBSS) and System Specs Nigeria Limited have partnered with the Federal Inland Revenue Services (FIRS) to provide electronic payment of taxes in Nigeria. This will automate all core processes from tax registration, payment, assessment, monitoring exercise, tax audit and investigation, taxpayers file management and returns filing. FIRS was working towards full implementation of the online platform before the end of 2015. This would develop an e-solution, a platform that would make it easy to pay tax across every outlet in Nigeria. That means wherever you are, you can pay your taxes easily without stress. To access the platform, taxpayers must register with the FIRS by filling an application form which can be downloaded from the FIRS website ([firs.gov.ng](http://firs.gov.ng)) or obtained from the tax office. Taxpayers will be issued a username and an initial password, with which to access the system. Oni, Okunoye and Mbarika conducted a research in 2016 as follows: The Nigerian Government recognized the potential of Information Communication Technology to empower citizens especially youths, women and disables and the need of the country to participate in the race to becoming a digitized society [8]. To this end, ICT was declared a national priority, resulting in the formulation of a policy for Information Technology in 2001. Nigeria laid foundation for e-government when it adopted the National Policy on Information Technology (IT) 'USE IT' policy document. The document spelt out the strategies and guideline for e-Government implementation in Nigeria. The enabling law of the National Assembly known as the National Information Technology Development Act of 2007 was later promulgated. This law formally set up the National Information Technology Development Agency (NITDA). NITDA was authorized to formulate, devise, develop and promote the use of Information Technology in Niger [12]. E-Nigeria, an initiatives aimed at connecting communities, vital agencies, institutions of government and educational

institutions at all levels with ICT are currently being pursued by the government. Despite these government initiatives, Nigeria still struggles to have a notable improvement in its e-government ranking.

This research examined e-government implementation in line with the Nigeria national IT policy statement which is to use IT as the major driving force to re-engineer and rapidly transform governance to interface with the needs of its citizenry by establishing transparency at national, state and local government levels. State governments' websites were therefore evaluated to assess their level of compliance with the policy statement. The empirical work presents an overview of the efforts of state governments towards implementation of e-government. The level of implementation since 2001 when the policy statement was issued shows that government institutions are not maximizing the potentials of ICT to achieve the stated objectives. The researchers found that, out of 36 states, only twenty-three (23) states and the federal capital territory have dedicated websites, which means only 68% of Nigerian State Government is online. The website of Sokoto State Government is under construction; Benue State Government maintains only online blog; Eboyin, Kastina, Kano, Kebbi, Imo, Gombe, Zamfara, Nasarawa, Yobe and Bayelsa State Governments are not online. Lagos State Government In 2017 rolled out an e-taxation implementation plan in partnership with Microsoft which it called Electronic Banking System of Revenue Recycle Management. The EBSProg is an Application Software designed on Microsoft SQL Server as the back-bone model for the Lagos State Government Electronic Banking System of Revenue Cycle Management (LASG EBS-RCM). It is a suite of programs, queries and reports that are closely integrated to process information relating to the EBS-RCM Program. The Objectives of the EBS-RCM is to Go-online with the Direct Bank Lodgment System (DBLS) of the revenue collection process and

provide information for tax administration and planning while monitoring and coordinating all revenue generating activities of the state. The EBS-RCM is a sophisticated information network system linking Tax stations & other revenue Agencies to lodgment banks. It uses e-Pay messaging system for inter-bank communications by creating and maintaining a database of all revenue collection activities thus allowing for on-line tracking. All along, this system

has been at design stage because His Excellency, Mr. Akinwunmi Ambode, the Lagos State Governor, has flagged off the electronic tax payment campaign of the state which will allow residents and citizens of Lagos State to pay their taxes directly to the coffers of the State Government. The flag-off campaign was kicked off at the Guaranty Trust Bank, Opebi branch, Lagos on Monday February 19, 2018 [9].

#### Effective Use of Technology

Technology is considered to be an efficient tool when used properly; otherwise it is likely to become a problem that needs solving, rather than the solution. Technology is only efficient when it is handled by well-trained personnel and embedded in the workflow of the organization [11]. The available literature on e-taxation in the Nigerian tax system is scarce and does not fully address its influence on the cost of administration. In relation to the impact of technology on tax revenues, [6], argue that the literature in some cases vaguely addresses the issue, in others it is non-existent; and also for the vast majority the issue of taxation technology use is not examined. At the international level there exists vast literature on use of technology and the implication for revenue authorities. However, most literature is very much skewed in favor of developed and newly industrialized countries. In some cases the literature only offers detailed assessment of the possible implication of technology on tax revenues; in others they also make general mention of possible tax implication [6]. [7], while commenting on the essence of technology, noted that technology is an important tool if properly used; otherwise it can as well become a problem that needs solving, rather than the solution. The technology used in tax administration entails the use of computer, internet and software applications. Technology is only regarded as efficient when handled by well-trained personnel and if embedded in the workflow of the organization. Good technology needs only to be applied in tax administration if it satisfies some basic principles which also include; reducing life of tax, improving efficiency and reducing errors in procedures, increasing multi-tasking levels of tax officers and facilitating taxpayers in complying with tax regulations. In the reduction of the „lifetime of the tax“, proper technology needs to

ensure that the time period between the date a property or service become liable for tax and the payment of this tax or rate is reduced to the minimum. All technological advances in automation processing, mass data processing and elimination of administrative challenges fall in this category [4]. [9], described fingerprint verification and Vetting Management System methods and technologies. Its purpose was to give an understanding on fingerprint verification, recognition and system design considerations. Their study also gave an impression on fingerprint technologies, its advantages and disadvantages in reference to other biometrics systems. [9] has it that, the US and UK developed biometrics systems to identify non-authorized personnel. The system compared details captured and stored in databases through intelligent means with live details submitted by visitors. The system received a lot of praises because it was able to identify an individual and cross-matching the biometric data to their own databases in the quickest possible time. This resulted in the US department for Home Land Security to introduce a pilot program 'fidge factor'. Fidge factor is the behavior biometrics system to determine whether or not interviewees were hostile to the US. [5], also extended his work and described how the afghan government developed Afghan Automated Biometrics Identification system (AABIS). In this system fingerprints, iris and face were scanned and stored in the database. The system was developed to enhance security in the nation. This system produced, among other documents, a smart card Identification Card (ID) to identify afghan citizen. [10], identified that UK developed surveillance and identity management system. The system was developed to issue UK Biometrics Resident Permit to foreign nationals includes visiting scholars, entrepreneurs,

professional, investors and domestic workers. The system had three important

### Challenges of Using the Electronic Tax System

In Africa predominantly, there are challenges such as intermittent power supply and Internet outages, but in Uganda particularly, the tax body has made contingency plans to ensure that the system is operational 24/7. First, the e-Tax is hosted on a central server at their Kampala headquarters, which means that it's not affected by power or network outages even when power or the Internet is off in some parts of the country. Also the electronic filing process still confuses a lot of people because the web portal has many features and yet most people cannot understand some tax terms. [3], explains that as with any new system, there have been numerous teething problems with the electronic system. First, there are two concurrent tax systems — manual and iTax systems — without either system recognizing the other. Taxpayers are also receiving demand emails from the Integrated Tax Management System. This is bound to create discrepancies in taxpayers' records, especially with regards to payment of tax obligations as well as submitting returns. For instance, in the current setup, if a taxpayer pays taxes manually, the iTax system will not recognize the payment. Instead, the system automatically calculates penalties and interest on the perceived "missed" tax payments thereby leading to potential disputes between the Tax Authority and the taxpayer. Second, most iTax system lack historical records of taxpayers. Its record keeping is a "going forward" type in that it only stores tax records of taxpayers from the time of registering for iTax onwards. We have presented a Biometrics Tax Payment and Verification System. A system capable of assisting the tax authorities in enhancing the rate of tax payment and voluntary compliance by making the system available and functional to any government agency, private institution or individual at any particular point in time. Capable of verifying any taxable individual using their already fed fingerprint and view their tax payment report, the system also automatically uses the tax payer's BVN to interact with his bank accounts and verify his/her tax payment status before normal bank transactions will be carried out. With this, the tax payment system offers multiple

modules namely; enrollment, surveillance and personal identity.

solutions to both sides of the taxation system. The tax collector's job is more effectively carried out as access to data required determining the volume of taxes currently paid readily available and can confidently estimate deficits. The tax organization is seen as more transparent and effective in carrying out its duties as it has records to support stated facts in its report. The tax payers in general are more receptive to taxation as the whole process is convenient and flexible. It doesn't require visits to the tax office. Even the government as a whole would benefit from the implementation of this system as it would have the ability to properly prepare its budget based on expected income, since it has historical records and a database showing payments trends. The system can also be used by the government to measure the level of the public's reception of changes in tax laws, rates and their responses to the changes. Also, the development of biometric data capture involved many phases. The approach used is a top-down one concentrating on *what* first, then *how* and moving to successive levels of details. The research revealed that, fingerprinting has served all governments worldwide during the past 100 years or so to provide accurate identification of individuals. No two fingerprints have ever been found identical in many billions of human and automated computer comparisons. Fingerprints are the fundamental tool for the identification of people with a criminal history in every police agency. It remains the most commonly gathered forensic evidence worldwide and in most jurisdictions fingerprint examination outnumbers all other forensic examination casework combined. Moreover, it continues to expand as the premier method for identifying persons, with tens of thousands of people added to fingerprint repositories daily — far more than other forensic databases. It is hoped that effective implementation of this software product would eliminate many problems discovered during systems investigation. This will no doubt result in improved operations of tax authorities and with the aid of the biometric authentication and BVN verification system, government will generate more revenue.

## CONCLUSION

The desire to mitigate the rate of leakages and diversions of public generated revenues, improve the rate of voluntary compliance in paying tax and digital inclusiveness in revenue generation services has motivated this work. We have through this work provided a platform that helps in fighting

corruption in the revenue generation sector which for a long time has been a critical societal problem. This research presented the development of fingerprint authentication and payment system for sensitive organization like tax organizations.

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