THE NEXUS BETWEEN COMPANY INCOME TAX COLLECTION AND INFORMATION COMMUNICATION AND TECHNOLOGY (ICT)

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Abstract

The importance of taxation in the fiscal policy management of a nation and veritable source of revenue cannot be overemphasised. Many governments across globe seek ways to improve the efficiency of generating tax revenue including adoption and use of ICT in tax operations. This paper examines the effects of the usage of ICT in tax operations in developing countries using Nigeria as a case study. Data were collected using structured questionnaires and 4 interviews. 240 questionnaires were distributed to senior staff of Federal Inland Revenue Services with 230 returned and found usable for the investigation. With the instruments of Statistical Package for Social Sciences version 21, Spearman's rho correlation was used to establish relationship between ICT usages in company income tax collection (CIT) collections. Thematic analysis was employed for the interview aspects of the data.It was found that there is a relationship between effective company income tax (CIT) collection and the use of ICT in tax operations. The tax revenue generation increases with level of investments in information technology.

Keywords: Information Communication and Technology, Tax Revenue, e-Tax Payments, Tax Collections, Tax Compliance

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Introduction

Taxation is one of the important fundamental issues in the management of national revenue, particularly in advanced countries. It has played a significant role in civilized societies. Taxation is vital to sustainable development, as it supports the basic roles of an effective state and sets the background for economic growth; more frequent overlooking is the role of taxation as a vehicle for the development of receptive and responsible government and for the growth of state capability. For any government to meet its recurrent expenditure, both internally and externally intensified revenue generation efforts are needed, mostly in the form of tax revenue. Chatama (2013, 1) defines taxation as being "commonly used as the imposition by government of compulsory contributions or levies on the citizens, property, income, commodities, transactions and so forth, for the purpose of raising revenue for government expenditure such as health, defence, law and order, education and infrastructure, to encourage investment, and to defend the local market for domestic products through heavy taxes on unnecessary imports". In addition, taxation is the communal way any government sources its revenue, and it is often collected from the public in several ways. It involves the transfer of resources from individuals and corporate bodies to government, which can be used to finance expenditures such as social overhead projects and infrastructure for economic growth. Nightingale (2001, 8) explains that "taxation is part of the price to be paid for an organised society" and he identified six reasons for taxation: "provision of public goods, redistribution of income and wealth, promotion of social and economic welfare, economic stability, harmonization and regulation". The strongest and most effective fiscal instrument is taxation, which eases reduction of private consumption, increases investment and also involves the collection of resources from individuals or corporate bodies by the government for economic development. The economic and social goals of taxation involve influencing and controlling economic behaviour, transferring resources from the private to the public sector, distributing the cost of governance and promoting economic development.

In line with these numerous definitions of taxation, it is a mean by which any government generates funds, and it involves the transfer of resources from individual and corporate bodies to government to finance expenditures such as health, defence, law and order, education and infrastructure. It also encourages investment and defends local markets and domestic products through heavy taxes on unnecessary imports. A tax is a fee charged or levied by any government on a product, income or activity to finance public goods and services. Tax is also a main source of government revenue all over the world, and is used for the provision of public goods, maintenance of law and order, defence against external hostility, trade and business regulation to ensure social and economic development.

According to Kieran et al. (2013, 14), "tax issues are high on the agenda of African governments, and at an international level Prime Minister David Cameron has used the UK's presidency of the G8 to call for greater efforts to promote trade, tax compliance and transparency".

Clause 4 of the Lough Erne Declaration released at the G8 summit in June 2013 stated that "developing countries should have the information and capacity to collect the taxes owed them and other countries have a duty to help them" (Kieran et al., 2013, 14).

However, many countries, mostly developing countries, are faced with the problem of generating the revenue to meet their expenditures. Budgeted revenues always fail to meet the expected expenditures, so relying on foreign aid and taxation is then seen as the most suitable, efficient and effective means of generating revenue. Governments are required to provide public goods and services that would improve the living standards of citizens.

According to Osei and Quartey (2005, 1), "over the past two decades, the government of Ghana has consistently spent more than it is able to generate as revenue and the gap is often financed with foreign aid which has perpetuated the country's aid dependency". Tax is an important issue and fundamental for the development of any country.

The basic objective of taxation is to raise resource for national defence, creation of infrastructure and social upliftment schemes and to make regular and systematic resource mobilization obligatory. Other objectives are stated as follows:

i) Regulatory objectives: the state can discourage consumption of harmful and undesirable goods by levying prohibitive rates of tax.

ii) Objectives related to reducing inequalities: taxation can be a powerful weapon in tackling income disparities, and tax incentives and exemptions to start industries in the backward regions can be a good method of dealing with the problem.

Governments all over the world have been using information technology for decades in many ways, but as ICT and computing power grows rapidly, these developments provide great opportunities for tax agencies to improve service quality and to concurrently reduce service costs. The e-tax payment system is an application of ICT to improve efficiency in tax collection, and it does not require taxpayers to physically interrelate with the tax authorities.

Instead, it enables taxpayers to pay their taxes online. "The concept of electronic tax payment originated in the U.S.A., other technology-enabled nations have also moved quickly to utilize the modality, including Australia, Canada, England, Germany, India, Singapore and Taiwan" (Turner & Apelt, 2004, 2)

This study will establish the existing gaps in the adoption of ICT in collecting company income tax to generate revenue for the government to meet its required overhead. In addition, the study will become useful for those who wish to undertake more research in this area. It will make several useful research contributions, which include the areas suggested for future work and questions that are important to e-tax payment in developing countries, especially in Nigeria. Finally, this study is the first of its kind, and it will contribute to the literature on technology adoption in company income tax collection. It also offers important insights to the Federal Inland Revenue

Services (FIRS) in improving and enriching their online tax payment system and online services in General

Literature Review

The use of ICT in general has changed the service delivery process, business models and people's expectations of the quality and efficiency of information. Tomsett (2008) supports the view that "the administration of any adopted taxation system should be acceptable and easy for taxpayers and efficient" (Kennedy & Sugden, 2007).The differences between traditional bureaucratic and e-tax payment systems are shown in Table 1 below.

Table 1 The traditional bureaucratic and E-tax payment systems

	Bureaucratic	**E-tax payment system**
Orientation	Production cost-efficiency	User satisfaction and control, Flexibility
Process organisation	Functional rationality, departmentalization, vertical hierarchy of control	Horizontal hierarchy, network organisation, information sharing
Management principle	Management by rule and mandate	Flexible management, interdepartmental team work with central coordination
Leadership style	Command and control	Facilitation and coordination, innovative entrepreneurship
Internal communication	Top down, hierarchical	Multidirectional network with central coordination, direct communication
External communication	Centralized, formal, limited channels	Formal and informal direct and fast feedback, multiple channels
Mode of service delivery	Documentary mode and interpersonal Interaction	Electronic exchange, non-face to face Interaction
Principles of service Delivery	Standardization, impartiality, equity	User customization, personalization

Source: Adapted from Ho (2002)

According to Ho (2002) "these new paradigms thrust the shift toward the e-tax paradigm, which emphasizes coordinated network building, external collaboration and taxpayer services". Governments worldwide are leveraging ICT in many ways to tap potential cost savings and efficiency when providing online services to citizens. Slemrod (1990) noted that the design of an optimal tax system requires consideration not only of changes in the technology of collecting taxes, but also of how technology may alter the economic environment in which governments seek to

collect revenue. According to Bird and Zolt (2008), "Policymakers need to consider the impact of changes in technology on both the design of specific taxes and the relative use of different tax instruments in raising revenue".

However, Yu (2002) stated, "electronic commerce flourished because of the openness, speed, anonymity, digitization, and global accessibility characteristics of the internet, which facilitated real-time business activities, including advertising, querying, sourcing, negotiation, auction, ordering, and paying for merchandise". Therefore, ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form such as radio, television, cellular phones, computer and network hardware and software, satellite systems as well as the various services and applications associated with video conferencing and distance learning.

Adegbile and Fakile (2011) studied the relationship between company income tax and Nigerian economic development. The study failed to state the method used to collect primary data. The study used Chi-square and multiple linear regression analysis for the data obtained. The findings revealed that there is a substantial relationship between company income tax and Nigerian economic development. Evasion and avoidance are major hindrances to revenue generation, along with taxpayers' non-compliance with tax laws and ineffective tax administration that has generated enough loopholes in this source of income. The study suggests, like others, the computerization of integrated tax operations for enhancement of revenue collections. The study also suggested what government agencies can do to increase company income tax revenue generation and collection, while at the same time contributing to the literature on company income tax collection. The current study will use questionnaires and interviews to collect data to explore the impact of ICT in company income tax collection in Nigeria.

Hai and See (2011) examined the intention of tax non-compliance. The objective of the study was to provide a literature review on factors that affect the intention of tax non-compliance behaviour among sole proprietors. The study failed to state the method used for data collection. The findings of the study revealed that the literature review helped identify gaps for future research towards behavioural tax non-compliance intention. These gaps are unapproved tax preparers, unapproved account preparers and future expected tax costs.

However, the study failed to consider IT usage. Many small business entities are still sing the services of unapproved tax preparers (Liew, 2004). Collin et al. (1992) recommended studying the impact of unapproved tax preparers on tax non-compliance. The unapproved account preparers need not follow the tax regulations and professional ethics set by the approved accounting board. According to Jackson and Jones (1985), "if taxpayers know [the] expected cost of tax non-compliance, then it is a factor that may change taxpayers' noncompliance decision-making". This is why the current study will consider tax costs; if a taxpayer wishes to evade tax, they must understand what the future expected tax costs are likely to be.

Kerr (2012) examined tax return simplification. The objectives of the study were to look at the concept of a default pre-filled tax return within the Australian context and contrast this with the system of reduced filing used in the UK and New Zealand; the study would then draw similarities with New Zealand's personal tax summary. It explored the literature on taxpayer engagement amid the concern that taxpayers may potentially engage less with the tax system if they do not have to lodge tax returns. The findings of the study revealed that the best practice in future tax administration may be a hybrid system where elements of both reduced filing and pre-filling co-exist, and people with simple tax affairs will not have to lodge tax returns and those with arrangements that are more complex will file pre-filled returns. This study highlights that policymakers should consider it worthwhile to weigh up the merit in making such changes for a short-term solution and explore the capacity for longer-term gains. To reiterate, the benchmark of a pre-filled tax return is that a taxpayer only needs to confirm their details are correct. The study failed to consider the use of IT and whether taxpayers file their tax returns manually or via automation. Although extensive research is required to determine whether revenue authorities should continue to issue refunds to the majority of taxpayers, this current study will add to this research.

Githinji et al. (2014) examined the effects of information and communication technology (ICT) on revenue collection by Kenyan counties. The objective of the study was to establish the mode of strengthening domestic resource mobilization by utilizing ICT; it also reviewed information system theories and examined the impact of management information systems on revenue collection in Kenyan counties. The study utilized ICT in relation to technological theories. Additionally, it proposed efforts to be devoted to extensions of the Technology Acceptance Model (TAM) to examine county governments and to take ICT as an important tool for delivering services to citizens and businesses in terms of revenue collection systems.

The establishment of an internal control system, a management information system, guaranteed strong control of the largest taxpayers and ICT infrastructure and revenue collection in county governments and utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT). The study used Hofstede (1997) and culture as a system of collectively held values, and looking at culture from this angle, it differs across continents, nations, countries, sub countries and ethnic groups. Their study found that the most comprehensive study of national cultures has been used in some revenue collection system studies, which are discussed under revenue collection system and culture and where the ultimate intent is not to control the behaviour of people in predefined ways, but to influence them to make decisions and take actions that are likely to be consistent with the countries goals. They recommended that the countries governments should use ICT as an important tool for delivering services to citizens, tax collection, monitoring county project and other business operations within the countries.

Dutt (2004) examined the optimization of corporate tax collection in developing countries - with potential application to Mozambique. The objective of the study was to draw attention to the potential impact of deploying best practice tax collection projects in sub-Saharan Africa. The study used a simple and highly operational model, which may not allow the generalisation of the study findings. The findings of the study revealed that the Mozambican government does not have the means to generate fair taxes to fight poverty; hence, fair distribution of wealth is in danger, which could lead to further tensions between South and North Mozambique. The findings also revealed that in the case of Africa and Mozambique in particular, both a top auditing team and a flat fee structure for small businesses need to respect the principles and guarantee an immediate impact in government revenue collection. The study has some limitations, such as the model possibly being used in discriminately throughout all sectors of the economy, regardless company size. Additionally the small and medium agricultural companies and the medium industrial companies were not included. The study also failed to consider the impact of ICT on tax collection.

In FIRS, "several technology-based initiatives have been implemented in the last six to seven years, which have yielded significant dividends in improved tax collection, increased taxpayer confidence in the tax system, increased efficiency in tax operations and reduction in leakages" (Omoigui-Okauru, 2011). However, "IT is being deployed rapidly in the delivery of public services even in developing countries such as Chile, Brazil and India with its consequent effect on society; some countries, including Nigeria, seem to be slower in pursuing e-Government practices".

In a more recent study, Chatama (2013) examined the impact of ICT on taxation by focusing on the Large Taxpayer Department (LTD) of the Tanzania Revenue Authority. The objective of the study was to investigate how the use of ICT has modernized tax administration procedures and improved revenue collection at the Large Taxpayer Department of the Tanzania Revenue Authority. The study used secondary data and literature reviews. The findings revealed that the availability of ICT infrastructure and facilities at the Large Taxpayer Department is contrary to scholarly observation of ICT use limitations in developing countries, and LTD has proven to be well equipped with ICT. Also the taxpayers' and tax consultants' (firms) application of ICT has affected both the design and administration of the tax system in Tanzania. In addition, the findings of the study revealed that the impacts of ICT use can be seen in a number of ways, including; reduced administrative and collection costs; decreased need for personnel; time savings for taxpayers due to fast processing; transparency in assessment, collection, and related processes; reduced tax compliance costs; reduced communication costs; and timely access to information, which results in preventing revenue losses and improving efficiency and performance in revenue collections. The study expressed that although other factors in the economy, like increased internal trade, reduced importation and more reliance on home products, may have caused the increase in revenue collection, it is worth remembering that no matter how much the economy has prospered,

if there is no good tax administration, the revenue will only disappear into wrong hands and will not be reflected in collections. If this study is carried out in another developing country with a different level of infrastructure development, the result may not be the same. The study used secondary methods, but the current study on Nigeria will use mixed methods in addition to secondary methods.

Geetanjali (2011) examined ICT application in service delivery for the Inland Revenue Department (IRD), Nepal. The study used a combination of content analysis, survey through in-depth interview, questionnaires and observation to collect data. The findings showed that the average response of service providers and seekers towards the effectiveness of e-services is positive. The study revealed that organisational factors (human resources, ICT infrastructure, financial resources and attitude of service providers) are associated with the effectiveness of e-services, while customer factors (customers' demand and customers' knowledge) are not found to be associated with the effectiveness of e-services. It also revealed that the e-services of IRD are effective, and the organisational factors (not the customer factors) influence e-services delivery. Some distinct features of Nepal, such as a low level of internet penetration, poor rights, consciousness of public customers, the patron-client relationship and a sense of fear of the revenue department, might have made customers hesitant in taking a more active role in making e-services effective. The study failed to assess the customers' roles in effective e-service delivery; the research mainly focused on a few organisational aspects, and the effectiveness of e-services in the study was looked at from the perspective of improvement in service delivery, which was again measured by time effectiveness of e-services.

Additionally, the study concentrated only on the effectiveness of e-services in the present scenario. However, the current study will examine other major objectives of governance, like ensuring transparency, reducing corruption, reducing cost, and quality of services, which add more value to the effectiveness of e-services. E-service delivery in itself is a new phenomenon in some developing countries, and there have been scant attempts to explore the relation of organisational and customer factors with e-service delivery of an organisation. The study helps to identify the lubricating/hindering factors for delivery of services with the use of ICT to the public, and it is useful to academics and future researchers.

Muwonge (2011) examined the influence of the electronic tax filing system on tax compliance and tax collection. The objective of the study was to ascertain the extent to which e-tax has achieved its objectives and to establish the ease of use of the system and the attitude of taxpayers towards the system. The study employed a survey research design and self-administered questionnaires. The findings of the study reveal the following: i) the electronic tax filing system has improved tax compliance, as it is easy for taxpayers to assess their tax obligations accurately and to file their returns on time; ii) the attitudes of taxpayers and that of URA staff towards the use of e-tax is positive, as a considerable number viewed the use of the system as being good as the new

system has reduced costs on the taxpayer's side; and iii) the current e-tax servers are overwhelmed by the number of users, hence the reason why they are so slow, and the e-tax filing system has the potential of increasing tax compliance and revenue collection in URA; however a lot has to be done to avert the obstacles that may make it impossible. The study has some limitations, such as the small sample and the results of the study cannot be generalised. Some additional factors need to be considered, primarily non-technological factors including culture, infrastructure and human resources.

Maruf (2004) examined the efficiency of the tax authority and collection of tax revenue. The objective of the study was to explore the effectiveness of the large taxpayer unit (LTU) in increasing the efficiency of the tax authority. Using secondary data and reviews of LTU's functions, the study reviewed their effectiveness in developing countries, particularly in Bangladesh. The findings revealed that countries may gain significant benefits from setting up LTU. Moreover, the experience of many developing countries shows that setting up special operations to control large taxpayer compliance has resulted in increased compliance and effective TA. Many of the countries surveyed reported that establishing LTU helped them address major operational weaknesses in tax authority. The LTU has been a pilot project for the tax authority to test reforms that will be later extended to other taxpayers. This study provides an overview of the structure and functions of large taxpayer operations. There is not much available data and analysis about the operation of LTU in Bangladesh, therefore, the results of the study cannot be generalised. In the reforms of tax administration, each country needs to take stock of the existing situation and to plot the most desirable and practicable course, as pointed out by Silvani and Radano (1992). The study failed to consider the use of ICT.

One of the ways to improve efficiency and effectiveness is informatisation, which could support several services provided by the tax authority, such as filing tax returns, information services and counselling (Klun & Dečman, 2002). In a related study, Turner and Apelt (2004) examined globalisation, innovation and information sharing in the tax system. The study's objective was to apply a new conceptual framework to describe and explain the factors that have enabled the diffusion, adoption and operationalization of electronic lodgement within the Australian tax system. The study used textual analysis and in-depth interview methods. The findings revealed that a coalescence of factors and actors was pivotal. In addition, the findings revealed that globalisation, information exchange and advances in computer hardware and software technology were key drivers. The study highlights that Australia is amongst the countries championing the global phenomenon of use of electronic lodgement services within tax authorities. However, the framework provided a comprehensive means to analyse and explain the diffusion and adoption of electronic lodgement strategies within the Australian environment, and the result may have been different if the same study had been carried out in a different environment, particularly in

developing countries. The differences between the e-tax payment system and traditional tax payment are:

Table 2 The difference between e-tax payment systems and traditional tax payment

Difference	Electronic tax payment system	Traditional manual tax payment
Transparency	ICT has the potential to improve interaction between tax authority and taxpayers, fostering transparency and accountability in administration of company income tax collections	There is no transparency. Instead, there are sharp practises.
Dissemination	There is availability of public information from tax authority to company income taxpayers through radio, and websites, as well as the number of information requests submitted by the taxpayers and queries answered by the tax officials	No dissemination of tax information
Speed	Most people can do their online tax return at Etax.com. Fast to process. No more last minute trips to the Post Office – with e-file, just hit Send.	The visitation of a tax practitioner's office or filling in the tax authority's office, paper tax forms often takes 1 hour or more.
Time savings	The use of ICT in company income tax collection saves time for both the taxpayers and tax authority	Time spent travelling to tax authority's office or in a practitioner's office waiting room can make this even longer.
Location	You can complete your return anywhere at any time such as home, work, in a cafe – even on holidays on the other side of the world – no problems.	You need to visit tax practitioners in their office with all your documents, or carry around a traditional tax pack, both of which can be inconvenient.
Price	Etax.com offers an easy online tax return plus professional accounting support at very low fees.	The cost of visiting a tax practitioner could be more expensive.
Easy	Simple tax online tax payment using a credit card, electronic funds withdrawal or, in some cases, the Electronic Federal Tax Payment System. Taxpayer can get instant support through email or phone.	To complete tax form requires appointments to be made, time off work and many confusing questions – that is not easy.
Service	Selfless service. E-tax payment system checks for errors and necessary information, increasing the accuracy of your return and reducing the need for correspondence with the tax authority to clarify errors or omissions. The taxpayer is notified electronically, acknowledging as the tax authority received the payment.	Involved employment of tax practitioners. Otherwise, taxpayers needed to carry out the services in the tax office.

Ssewanyana and Busler (2007) examined the extant of adoption and usage of ICT in firms, with a focus on computers and the internet. The questionnaire was used. The findings of the study revealed that the adoption and usage of ICT by firms in developing countries follow the same pattern as in developed countries, and they only differ in the level of usage and adoption. However, the firms do appreciate the contribution of ICT to their performance, but there are various barriers, which require governments to adopt appropriate policies to address them. It revealed that most small firms adopted ICT when the government started cancelling some taxes. The result of the study may not have been the same if replicated in a different environment.

Koson (2006) examined the impact of ICT on the growth of the service industry. The objective of the study was to explore the productive relationship between ICT and services. In addition, the study examined how ICT as a technological innovation, combined with non-technologicalfactors, affects the economic performance of the firm. The findings of the study revealed that ICT is the key success factor for service firms. The results demonstrate that the presence and intensity of ICT could be used to explain the higher growth in productivity and profitability of service firms. The effect is even more palpable when ICT innovation is undertaken jointly with non-technological innovations.

Theoretical underpin

The Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB) were two theories considered more suitable for this study, after considering the merits and demerits of all available models to explore the impact of ICT on collection of company income tax. The Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB) are well established in the IT arena and appear to be widely accepted.

Research Propositions

From the foregoing the following research propositions were formulated:

Proposition 1: The introduction of ICT has enhanced CIT collection and improved revenue generation.

Proposition 2: The use of ICT has impacts on company income tax compliance and the cost incurred from enforcing compliance.

Proposition 3: ICT can potentially contribute to the effectiveness and efficiency of company income tax collection.

Methodology

This study proposes to use a mixed methods approach both interviews and questionnaires (quantitative and qualitative) in order to achieve its main objectives. A mixed methods approach is used to gather data that could not be obtained by adopting a single method, and it helps to minimise

the weakness of a single method and ensure the validity of gathered data. In addition, it is used to ensure that all angles of its target population are covered in terms of understanding the deeper structure of the research problems. 230 questionnaires were finally analysed out of 240 sent out. 10 questionnaires could not be used because they were not properly answered or incompletely answered. 4 senior staffers from Assistant Director Level in Federal Inland Revenue Services were interviewed.

Analysis

Attempts were made to analyse relevant primary and secondary data collected with descriptive statistic to provide necessary input data for further analyses. Following the trend started above; the analyses were conducted by means SPSS version 21 for descriptive statistics and strengthened with nonlinear regression for data generated through the questionnaire.

Proposition 1: The introduction of ICT in Company Income Tax Collection has enhanced and improved revenue generation

Spearman's rho correlation relationship between ICT usages in CIT collection with other influencing factors.

Table 3 Spearman's rho correlations

Item	Coefficient				
The use of ICT has minimised errors in CIT return processing	1	.429**	.438**	.358**	.438**
Using ICT facilitates the company income tax collection process	.429**	1	.294**	.341**	.333**
ICT allows using available data more effectively to improve forecasting of fiscal revenue	.438**	.294**	1	.303**	.433**
Using the ICT helps to file company income tax (CIT) returns	.358**	.341**	.303**	1	.395**
The ICT system facilitates faster payments of CIT than manual the system	.438**	.333**	.433**	.395**	1
Using ICT in collection of CIT increases the overall revenue collection	.442**	.382**	.430**	.477**	.399**

**. Correlation is significant at the 0.01 level (1-tailed).

Source: Field survey, 2013

The correlation results in Table 3 shows that the use of ICT in CIT collection has minimised errors in CIT return processing (r =1, sig< 0.01); it facilitates the CIT process (r = 0.429, sig. <

0.01); it allows using available data more effectively to improve forecasting of fiscal revenue (r =0.438, sig < 0.01); it helps file CIT returns (r = 0.358, sig.< 0.01); and it facilitates faster payments of CIT than the manual system (r = 0.438, sig. < 0.01). These results imply that the use of ICT adoption in CIT collection has been influenced by many factors, such as easy monitoring and evaluation, good planning and quick processing among other factors.

Interview results regarding whether the introduction of ICT in CIT collection has improved revenue generation

The officials of FIRS were asked about the use of ICT in CIT collection and the improvement in service delivery to taxpayers.

Table 4 Interview results on ICT usage in company income tax collection

Item	No N= 4	Percentage %
The use of ICT in CIT collection enhances protection of revenue collection	3	75%
ICT in CIT collection eliminates all drawbacks of manual data capture operations	2	50%
ICT usage improves CIT collection	4	100%
ICT usage has improved the delivery of services to taxpayers (companies)	3	75%

Source: Field survey, 2013

Three of the interviewees (75%) believe that ICT usage has improved the delivery of services to taxpayers (companies). This is consistent with Geetanjali (2011), who found that the average response of service providers and seekers towards the effectiveness of e-services is positive, and organisational factors (human resources, ICT infrastructure, financial resources and attitude of service providers) are associated with the effectiveness of e-services. Out of the four interviewees, two interviewees (50%) agreed that ICT in CIT collection eliminates all the drawbacks of manual data capture operations. Similarly, Fu et al. (2006) found that electronic filing of personal income taxes (e-file) has the potential of improving the overall process of tax filing for the individual, while at the same time reducing the cost for both taxpayers and tax collection agencies. From Table 4, four (100%) interviewees agreed that ICT usage improved CIT collection.

Proposition 2: The use of ICT has an impact on tax compliance and the cost incurred to enforce company income tax compliance.

Table 5 Spearman's rho correlations

Item	Coefficient					
ICT enhances voluntary compliance	1	.531**	.556**	.554**	.451**	.444**
Using ICT to collect tax revenue (CIT) reduces the costs of running and maintaining revenue agencies	.531**	1	.424**	.360**	.362**	.468**
The use of ICT in CIT collections reduces the costs of legislative enactment relating to the tax system	.556**	.424**	1	.480**	.422**	.408**
ICT in CIT collections ensures a greater level of compliance and tax revenue increase	.554**	.360**	.480**	1	.310**	.301**
ICT enables quick detection for non-payment of CIT	.451**	.362**	.422**	.310**	1	.390**
The e-tax system reduces processing time and reasonably shortened response times to taxpayers' queries	.444**	.468**	.408**	.301**	.390**	1

**. Correlation is significant at the 0.01 level (1-tailed).

Source: Field survey, 2013

The above Table 5 gives the relationship between different sets of variables; the first variable is voluntary compliance in relation to utilization of ICT in company income tax collection, the finding shows a moderate degree of positive correlation between voluntary compliance and utilization of ICT in company income tax collection as shown by 0.531. There was a moderate degree of positive correlation between using ICT to collect tax revenue (CIT) that reduces the costs of running and maintaining revenue agencies and utilization of ICT in company income tax collection as shown by 0.424; the use of ICT in CIT collections reduces the costs of legislative enactment relating to the tax system as shown by 0.480; ICT in CIT collections ensures a greater level of compliance and tax revenue increase as shown by 0.310.

This indicates that there is a fuller understanding of the tax system and hence improvement in tax compliance. Based on the above analysis, this study's findings also reveal that the use of ICT in CIT collection prevents tax evasion, brings increased CIT compliance, prevents corrupt practices of tax officials and minimises the issue of diversion of government funds to individual accounts.

Proposition 3: ICT makes a potential contribution to the effectiveness and efficiency of company income tax collection

In this study, the presence of a relationship between the dependent variable (B2) and combination of independent variables (B21-B28) is based on the statistical significance of the final model chi-square in the SPSS, as shown on model fitting information. The predictor variable, *using ICT facilitates the CIT collection process*, has significance < 0.05, as stated in Table 6 below.

Table 6 Case processing summary

		N	Marginal Percentage
B2: Using ICT facilitates the company income tax collection process	Strongly Agree	141	62.1%
	Agree	79	34.8%
	Neither Agree nor Disagree	3	1.3%
	Disagree	1	.4%
	Strongly Disagree	3	1.3%
B21: The ICT infrastructure and facilities are accessible to all members of staff	Strongly Agree	107	47.1%
	Agree	53	23.3%
	Neither Agree nor Disagree	22	9.7%
	Disagree	41	18.1%
	Strongly Disagree	4	1.8%
B22: All members of staff in FIRS are trained and educated on the e-tax filing and payments system	Strongly Agree	106	46.7%
	Agree	55	24.2%
	Neither Agree nor Disagree	21	9.3%
	Disagree	40	17.6%
	Strongly Disagree	5	2.2%
B23: The e-tax system has enabled FIRS staff to handle more taxpayers in a given period compared to manual system	Strongly Agree	135	59.5%
	Agree	75	33.0%
	Neither Agree nor Disagree	10	4.4%
	Disagree	6	2.6%
	Strongly Disagree	1	.4%
B24: Ongoing consultation enables staff feedback on how the e-tax system should actually function and operate	Strongly Agree	110	48.5%
	Agree	97	42.7%
	Neither Agree nor Disagree	14	6.2%
	Disagree	5	2.2%
	Strongly Disagree	1	.4%
B25; There are expectations of improvement with the ICT in CIT collections in the future	Strongly Agree	139	61.2%
	Agree	80	35.2%
	Neither Agree nor Disagree	6	2.6%
	Disagree	2	.9%
B26: ICT also has the potential to improve interaction between tax authority and taxpayers, fostering transparency and accountability in administration of company income tax collections	Strongly Agree	142	62.6%
	Agree	80	35.2%
	Neither Agree nor Disagree	4	1.8%
	Disagree	1	.4%
B27: In which area do you anticipate future improvements to be implemented with regards to the e-tax system in collections of CIT?	Finance	128	56.4%
	Infrastructure	99	43.6%
B28: Do you face any challenge through the use of the e-tax system in collections of CIT as a tax officer?	Yes	46	20.3%
	No	181	79.7%
Valid		227	100.0%
Missing		3	
Total		230	
Subpopulation		139[a]	

a. The dependent variable has only one value observed in 124 (89.2%) subpopulations.
b. Predictor is B2: ICT facilitates the company income tax collection process.

Source: Field Survey, 2013

Table 7 Model fitting information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	315.110			
Final	175.832	139.279	96	.003

Source: Field Survey, 2013

Table 8 Likelihood ratio tests

Effect	**Model Fitting Criteria**	**Likelihood Ratio Tests**		
	-2 Log Likelihood of Reduced Model	**Chi-Square**	**df**	**Sig.**
Intercept	175.832[a]	0.000	0	
B21	520.028[b]	344.197	16	0.000
B22	188.284[c]	12.452	16	0.712
B23	184.582[c]	8.750	16	0.923
B24	183.113[c]	7.281	16	0.967
B25	395.852[c]	220.021	12	0.000
B26	342.548[b]	166.716	12	0.000
B27	3366.820[c]	3190.989	4	0.000
B28	175.831[c]		4	

Source: Field survey, 2013

The chi-square statistics is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a) This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

b) The log-likelihood value cannot be further increased after the maximum number of step-halving.

c) Unexpected singularities in the Hessian matrix are encountered. This indicates that either some predictor variables should be excluded or some categories should be merged.

From the above table, there is a statistically significant relationship between independent variables and the dependent variable (0.000 < 0.05).

An interview regarding ICT makes a potential contribution to the effectiveness and efficiency of company income tax collection

The interviewees, particularly D1 and D3, explained that a lack of finance and distributive capacity are the major factors militating against technology adoption in Nigeria. All interviewees said that the greatest obstacle to wider ICT usage in Nigeria is the high cost of ICTs, and the relative burden of ICT costs is higher for informal businesses than it is for formal ones. The informal sector is a prominent characteristic of many developing countries. Nigeria, for instance, has a large informal sector, very high self-employment rates and low levels of tax collection. This is due to the lack of constant electricity and based on the fact that some ICT infrastructures are energy consuming, which in turn hinders several taxpayers from effectively utilising ICT to pay their taxes, as required.

Findings

The findings of quantitative analysis were reinforced with qualitative analysis of interview data. The results obtained were compared with results from similar previous studies. There is an agreement between the findings generated through questionnaires and those of interviews. The study findings established that there was a significant increase in CIT revenue collection with the use of ICT. Prior to the introduction of ICT in CIT collection, the average collection of CIT revenue was low, after which it increased significantly. In line with the findings of the study, the use of ICT in CIT collection brings taxpayers better service; the use of ICT has impacts on company income tax compliance and the cost incurred from enforcing compliance and ICT can potentially contribute to the effectiveness and efficiency of company income tax collection among other benefits.

Overall, the findings of this study reveal that the benefits of the Federal Inland Revenue Service using ICT in CIT collection are the following: introduction of ICT has enhanced company income tax collection and improved revenue generation; the use of ICT has impacts on tax compliance and the cost incurred from enforcing company income tax compliance; and potential contribution of ICT towards the effectiveness and efficiency of company income tax collection.

Taxpayers' benefits include online services; reduced paperwork; taxpayers do not need to visit the commercial tax offices for instant acknowledgement; usually no service charges by banks for issuing demand drafts, cheque clearance etc.; easy clearance at check post due to advanced e-declaration of goods in shipment; system-generated annual return based on the monthly returns filed and the reduced need for direct interaction with tax officials, thereby reducing corruption.

Finally, the descriptive studies of the presented research reveal important insights on impacts of ICT in CIT collection and the empirical findings of this study provide valuable insights to policy makers to promote the adoption of e-tax.

Conclusion and Recommendation for Future Research

The deployment of information and communication technology has proved to be tremendously beneficial for company income tax collections. More and more tax authorities are deploying information technology resources to improve their revenue collection efficiency. Developing countries are leveraging on information technology to embrace the e-governance initiatives.

More research needs to be done to find out how information technology can be deployed to reduce incidence of tax evasion and tax avoidance which are common menace in developing countries. Another important area that needs investigation is how deployment of ICT can help in reducing the incidence of money laundering. In most instances when proceeds of money laundering are subjected to tax they become legal and ready to be circulated into the economy.

Today, no one is surprised to receive new information by the minute, to communicate with people on the other side of the world, and to work in a team without being in the same place. ICTs are now significant and essential parts of our lives. This concept is also called the information society, which is owed primarily to an invention that began four decades ago: the internet that creates emails, instant messaging services and web pages. The development of the internet has meant that information is now in many places. Earlier information was intense, given to parents, teachers, in books; but today these barriers have been broken. There is access to internet everywhere, the only problem; however, is the quality of this information. It has streamlined contact between people and also contacts in doing business. Many politicians have their blogs or videos on YouTube, making it clear that ICT, especially in the last 10 years, has changed every aspect of life. In part, these new technologies are immaterial because the main issue is the information; interconnection and interaction are instantaneous. At the same time, new technologies represent the emergence of new codes and languages and the progressive specialization of content based on the audience (breaking mass culture), soon resulting in unimaginable activities.

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