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The Impact E-Governance on Internally Generated Revenue in Cross River State

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Abstract

E-governance is an emerging concept that has positively impacted governance. This study examines this impact on internally generated revenue in Cross River State. It hypothesized that there is no significant relationship between e-governance and increased internally generated revenue in Cross River State Internal Revenue Service. The study employs the descriptive survey research design. The population of the study comprised 498 staff of the Cross River State Internal Revenue Service. After sampling and determination, a total of 222 respondents represented the sample size of the study. Primary data was obtained through a research questionnaire. The analysis of data was done with simple percentages and Pearson Product Moment Correlation statistical techniques. The result obtained shows that e-governance processes were yielding results in terms of boosting internally generated revenue as well as imposing confidence on users of the system in Cross River State. The study concludes and recommends, among other things the need for a deliberate effort to enhance the effectiveness of revenue officers of the State through constant training, retraining them with the latest ICT innovations and revenue policies in line with global best practices.

Keywords: *E-Governance, Internally Generated Revenue, ICT, Innovations*

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Background to the Study

Governance is as old as mankind and consequently predates the social contract which was charged with the responsibility of controlling the affairs of man and setting achievable goals by surrendering part of their liberty. In a bit to enhance accountability, speedy, accurate, citizen participation, and transparency in the conduct of legitimate mandate, innovations became a necessity, hence e-governance. E-governance which is the application of information and communication technology in the conduct of government business and rendering services to the citizenry is of nascent origin in Nigeria and other third world countries. This is not unconnected with the fact that most of our activities now are conducted through the Internet ranging from communication in social media via Twitter, WhatsApp, Facebook, and Instagram, among others, to business transactions, revenue administration, and entertainment. In industrialized and developed Western societies, there is hardly any facet of human life and endeavor that has not been enhanced by Information and Communication Technology (ICT) (Ashaye & Irani, 2014).

In the African context and Nigeria in particular, e-governance is a relatively nascent innovation as earlier posited. This is not unconnected with factors such as delayed modernization, poor communication facilities, high illiteracy, and a dearth of skilled manpower in Information and Communication Technology (ICT) amongst others. To corroborate the above assertion, Akpan-Obong (2009) maintained that Nigeria had her first known e-mail in 1994. However, over the past two decades, Information and Communication Technology (ICT) has gained monumental height and citizen's access to the internet has increased exponentially to justify government efforts and investment in broadband and network expansion program by the Nigerian Communication Commission (NCC), sister's agencies and telecommunication companies respectively.

E-governance in Nigeria has become an evolving process with NITDA as the driving force and compass. To fortify the above assertion, Olatokun (2006) averred that following the establishment of NITDA in 2007, it entered key alliances with the private sector to actualize its mission and vision where Information and Communication Technology would serve as the engine for sustainable development and global competitiveness. Internally generated revenue (IGR) according to Nto (2016) refers to "these revenue sources that are generated solely by the state or Federal government." Oti & Odey (2017) presents a more encompassing description of internal revenue as "revenue internally generated by the Federal, State and Local government".

Internally generated revenue plays a very crucial role in fostering economic development. Asimiyu and Kizito (2014) observed that economic development in Nigeria depends on the state's ability to generate revenue internally to supplement the revenue from the federation account. In Nigeria for instance, where the economy is oil-driven, a steady stream of internal revenue could serve as a bulwark as the price of oil continues to plummet. Despite the importance of tax as a viable non-oil revenue source, there exists a plethora of factors militating against the Nigerian tax administration and tax-related matters. In a bid to stem some of the obstacles enumerated above, the government at both federal and State levels has introduced a series of innovations. One such innovation is the application of Information Communication Technology (ICT) in revenue administration. This consists mainly of the electronic means of assessment, payment, tax assessment returns, amendment of assessment were based on Best of Judgment (BOJ) or wrong assessment due to dearth of data and refusal to amend. Nevertheless, it is the researcher`s desire to explore the extent to which the application of Information Communication Technology affects the productivity of internally generated revenue, of administration in Nigeria with specific reference to Cross River State Internal Service.

Purpose of the Study

The aim of the study is to examine the impact of e-governance on increased internally generated revenue in Cross River State Internal Revenue Service.

Hypothesis

There is no significant relationship between e-governance and increased internally generated revenue in Cross River State Internal Revenue Service

Literature Review

Conceptualising E-Governance

The concept of "e-governance" has been defined by various scholars and academicians to reflect their respective backgrounds. According to the United Nations e-governance Report (2008), e-governance is of recent origin which emerged at the beginning of the 21st century. In the early days of its development, e-governance was part of e-commerce in the public sector, which followed the evolutionary e-business model, where the focal point of e-services was easy representation of graphic-user interface with no mutual or reciprocal action. According to Sunday (2014), "e-governance deals with the use of information and communication technology by the various government agencies to enhance accountability, create awareness, and ensure transparency in the management of government businesses". He further opined that electronic governance is a broad concept that analyses and accesses the effects of technologies on the administration of governments, and the inter-relations which, exist between the public servants and the larger society.

In another development, Ayo (2017) defined e-governance "as the governing of a state and country using information and communication technology". This definition shows that government activities are to be fully executed by information and communication technology. E-government drives the New Public Management (NPM) which adopts private sector techniques. Consequently, as a refinement of NPM, Digital Era Governance (DEG) offers future public management which involves flexible principles, i.e. reintegration, holism, and digitalization (Dunleavy et al 2006). E-governance involves new styles of leadership, new ways of debating and deciding policy and investment, new ways of accessing education, new ways of listening to citizens, and new ways of organizing and delivering information and services. E-governance is generally considered a wider concept than e-government since it can bring about a change in the way citizens relate to governments and each other.

Other definitions that demonstrate what constitutes e-governance are maintained or viewed as an integration of information communication technology in governance to facilitate meaningful innovations and improvements in government processes and activities. The philosophy of e-governance is to ensure that government agencies are provoked to be efficient in the discharge of their legitimate responsibilities within its jurisdiction and operational spheres. E-administration may encompass both intra-office and inter-office communication for any organization. Its objective is to introduce total transparency and accountability leading to better e-governance within any organization. Palvia and Sharma (2007), further corroborate this view, they maintained that the basic focus of e-governance is the internal utilization of information and internet technologies in the management of certain resources such as capital, human, material, and machines, which are deployed to aid administrative processes in an organization.

The strategic objective of employing e-governance in government-to-government model is to simplify and support the process of governance for the government, citizens, and businesses. It is also expected to make government activities more transparent, speedy, and accountable. Nigeria, like every other nation in the global community, is striving to achieve a standard where e-governance becomes the order of the day. Thus, Aneke (2013) observed that Nigeria has employed various techniques to boost its Information and Communication Technology sector, thereby making Nigeria's telecommunication and Information and Communication Technology sector the fastest-growing market in the African continent. He further opined that the country needs to introduce e-governance in all spheres of society to ensure the efficiency of public services and the free flow of information from one sector to another. Between 2011 and 2013, the Nigerian government adopted various online procedures such as mobile apps and mobile portals to directly support poverty eradication, gender equality, social inclusion, and the promotion of economic development, environmental protection, and disaster management (Adeyemo, 2013).

Based on the Human Development Index Parameter of accessing the status and nature of e-governance in Nigeria, the United Nations 2014 e-governance survey revealed that, Nigeria ranked number 152 out of 187 countries in Human development, thus placing the country among those with low human development. The report puts Nigeria's Human Development Index at 0.381 which is below the prescribed level of human development index. The UNDP report stated that the disparity between economic growth in a country, and the welfare indicators, can be analyzed by the lack of inclusiveness in the economy's growth trajectory. The various reports and analyses of the three major parameters of assessing the status and nature of e-governance reveal that Nigeria's e-governance level is still at its rudimentary stage. In a similar direction, Adeyemo (2013) believes that, despite the low rankings accorded to Nigeria by the international community, the government at various levels is still putting more effort into encouraging the growth of e-governance across government and private businesses in the country.

Increased Internally Generated Revenue and E-governance

The concept of increased internally generated revenue (productivity) has defied universal definition. This is not unconnected with the fact that scholars have construed it to connote different things reflecting their orientation and environment. Accordingly, the Japanese Productivity Centre (JPC), in Helling, Houle, & Mongiat, (1991). Averred that, "productivity is considered as an attitude of mind" in this definition.

1. Productivity is the mentality of progress, of the constant improvement of that which exists,
2. Productivity is the certainty of being able to be better today than yesterday, and less well than tomorrow.
3. Productivity is the will to improve on the present situation, no matter how good it may seem, no matter how good it may be.
4. Productivity is the continual efforts to apply new techniques and new methods.
5. Productivity is the faith in human progress.

This phraseology laid credence to the importance of continuous improvement and the faith in man's ability to change his destiny. Similarly, one interesting fact remains that, this definition is derived from a conference arranged by the European Productivity Agency in Rome in 1958. Regrettably, this definition has not had the same massive impact in Europe as in Japan. It has consequently become a "paper product" in Europe and “a way of living” in Japan's industrial complex.

Nonetheless, the application of e-governance in the collection and administration of internally generated revenue stems mainly from the shortfalls that characterized the analog or manual operations and are susceptible to sharp practices by revenue collection agents. Nkanor and Udu (2016) averred that “it was the weakness of manual collection of revenue that leads to integration of information and communication technology in the internal revenue collection process”. Some of these shortfalls and lope holes inherent in manual revenue collection include but are not limited to the printing of personal revenue receipts by revenue agents, willful and persistent refusal to remit collected revenues, physical attacks on revenue agents by aggrieved persons and hoodlums, harassment of revenue payers, overbilling due to non-declaration of income and inappropriate record keeping inter alia. In Nigeria, where the level of implementation of e-governance in revenue collation seems to be limited as demonstrated by empirical studies reports with a consequential marginal increase in revenue generation as demonstrated by Ofunem et al (2018).

Table 1: Internally Generated Revenue and the Cost of Collection in Cross River State, 2007-2014, indicates the huge gap between cost of revenue collection and IGR as well as the need to balance the two.

Year	TOTAL IGR(#'Billion)	TOTAL COC (#'M)	NET COLLECTION (#'Billion)	Ratio of Collection Cost (COC:IGR)	Rate of IGR +Or - (%)	Rate of Increase/ Decrease In COC (%)
2007	3,341,876,034.00	435,439,094.20	2,906,436,939.80	13.03	-	-
2008	6,447,975,865.96	655,661,077.10	5,792,314,788.86	10.20	93.00	50.57
2009	7,106,292,956.28	437,281,512.30	6,669,011,443.98	6.20	10.20	-33.30
2010	7,870,941,915.00	402,482,195.00	7,468,459,720.00	5.11	10.77	-8.00
2011	9,159,651,948.00	532,003,763.30	8,627,648,184.70	5.80	16.38	32.33
2012	12,734,560,333.00	655,744,878.80	12,078,815,454.2	5.12	39.03	23.31
2013	12,002,167,999.57	576,363,952.93	11,425,804,046.64	4.80	-5.70	-12.20
2014	15,738,850,743.95	640,473,141.96	15,098,377,601.99	4.00	31.14	-11.11
2015	13,152,281696.24	663,444,324.03	12,064,333,871.7	-	-	-
2016	14,770,128,812.01	556,438,331.99	14,084,563,772.7	-	-	-
2017	18,104,848,986.68	710,561,222.93	17,024,341,221.3	-	-	-
2018	17,552,105,937.09	778,971,520.77	17,251,324,882.1	-	-	-
Total	134,639,807,360.42	7,044,865,015.22	6,732,923,795,087.8			

Source: Researchers Survey 2019; Cross River State Internal Revenue Service (2019).

A cursory glance at the table above, reveals that as total internally generated revenue increases, there exists a corresponding increase in the cost of collection. In 2007, revenue collected was 3,341,876,034.00 with an overhead cost of 435,439,094.20, and the total revenue for the period under review was 134,639,807,360.42 with a total cost of collations at 7,044,865,015.22 respectively.

Overall, there is empirical evidence that largely utilizing information communication technology in revenue collection leads to increased revenue generation and returns. However, the knowledge and usage of the technology have always been a subject of scholastic debate and investigation to determine, whether people understand the technology and can actively utilize it, in line with contemporary global best practices in revenue generation, administration, and collection.

Internally Generated Revenue/Revenue Profile

The concept of "internally Generated Revenue (IGR)" is fraud with ambiguities in meaning as evident in the existing literature. Consequently, Adam (2006) construed revenue "as the fund required by the government to finance its activities". Revenue may be viewed as all funds accruing to the state and organizations within its jurisdiction and competence. The implication is that revenue encompasses statutory allocations, internal sources, borrowings, loans, grants, gifts, interest from financial transactions, rents, licenses, leases, royalties, and taxes. Hamid (2008) viewed it "as the total amount of income that accrues to an organization, "public or private" within a specific period". In a similar direction, Pearce (1986) in Onodugo et al (2015), averred that government revenue refers to all the money received other than from issues of borrowing, debt, and liquidation of the investment. He further maintained that government revenue includes but is not limited to tax collected, charges and miscellaneous, utilities, and insurance trust revenue for all funds and agencies of government.

Based on the foregoing, Ossisami (1994) posited that there are two sources of revenue for all states to wit, internally generated revenue and revenue allocated from the federation account. He went further to define internally generated revenue as revenue that is derived within the state from various sources, like tax, and vehicle license among others. Similarly, Deloitte, (2016) conceived internally generated revenue "as revenues or funds generated by states within the Nigerian federation, independent of their share of revenue from the federation account." From the foregoing, internally generated revenue may be conceived as revenue whose sources are indigenous to the respective tiers of government excluding borrowing and interest from loans. The forgoing typify the importance of internally generated revenue in the economic development of states as corroborated and listed by Akpo (2009), to include but not limited to the fact that; it does not develop hyper-inflation, it is free and does not carry any burden of repayment and interest like domestic borrowing and loan; through tax, it serves as the nerve center of the social contract, it makes government more responsible and more responsive to the needs of the people, it serves as a tool for economic development, it is an important consideration in the planning of savings and investment and a powerful fiscal weapon to plan and direct the economy.

According to Nnanseh and Akpan (2013), internally generated revenue also serves as a tool for social engineering, it goes a long way to keep society moving, because as the government gets more revenue and commissions more projects, more money is put in circulation, more employment opportunities arise, and more business opportunities are created which impact positively on the generality of the society. However, due to the persistent and willful fluctuation of oil prices in the international market; the Organization of Oil Producing Countries' regulation of minimum production guidelines; the discovery of alternative energy sources as well as advances in technology example the development of electric and solar energy cars; corruption in public affairs account for the monumental decline in the funds for the various tiers of government.

To meet emerging demands, the government had to devote attention to internally generated revenue if it must perform its regulatory, distributive, and redistributive, rejuvenate and stabilizing functions, etc, as a matter of urgency. The need underlines the current determination of some states and local governments to aggressively pursue e-governance in revenue assessment and collection. Similarly, Omotola and Kabir (2015) maintained that tax may therefore be defined as a compulsory contribution made by individuals and corporate entities for levying and collection of tax from taxable persons. It may be construed as a compulsory levy imposed on individuals, properties, and corporate bodies by the government and enforceable by its agents on interest, income, and business to provide, maintain, and improve social facilities with the taxpayers not having a right to know how such monies are spent.

Government revenue according to Sunday (2014) is categorized into revenues accruing to the Government by internally generated and revenue allocation from the Federation Account (external). The internally generated revenue refers to those revenues that are derived from various sources within the state e.g. personal income tax, individuals only, companies' income tax as provided in the Personal Income Tax Act (PITA 1990), capital gain tax, capital transfer tax among others while statutory allocation from the Federation Account by section 162 of the 1999 Constitution and Value Added Tax (VAT) constitute external revenue sources.

E-Governance and Increased Transparency in the Revenue collection process

The results of the second hypothesis on the relationship between e-governance and increased transparency in the revenue collection process using Pearson product-moment correlation test statistics indicated that there is a significant relationship between e-governance and increased transparency in the revenue collection process. This implied that the introduction of e-governance has led to greater transparency in the revenue collection process.

This result resonates with the findings of previous studies on the implication of e-governance for transparency in revenue collection. What is defined as transparency in the context of this study refers to the ability of citizens and civil society to scrutinize public institutions and government and cause them to be accountable. Going by this result, there is empirical proof that e-governance has improved transparency in the revenue collection process. Onuiri, et al (2015) in a similar study concluded that, with the introduction of e-governance, taxpayers are more receptive to the idea of paying their taxes regularly and appropriately as and when due which breeds confidence on the part of payers with innovation in tax collection and administration. In a related vein, Agusiy (2009) carried out a study to determine the effect of information and communication technology on the efficiency and accountability of tax administration in Nigeria. The findings of this research show that effective tax administration resulting from the application of Information and Communication Technology leads to an increase in the tax base as more potential taxpayers are drawn into the tax net. The allure of e-governance is that tax payment processes are more transparent, and the revenue collected cannot be easily tampered with by revenue collection officials.

On their part, Onuiri, et al (2015) carried out a study on the design and implementation of an e-taxation system. The researchers observed that the e-taxation system offered multiple solutions and was perceived to be more transparent than the manual collection system. The researchers concluded that the e-governance processes were perceived to be more transparent than the manual system where revenue was collated by hand. The study concluded that taxpayers are more receptive to the idea of e-taxation and instill more confidence in them with the innovation in tax collection and administration.

The most important part of e-governance is that it helps to improve transparency and efficiency in tax administration and this in turn helps any country realize their fiscal objectives. A recent study by Sagas, Nelimalyani and Kimaiyo (2015) assessed the impact of electronic tax register on revenue collection by Kenya's revenue authority western region, of Kenya. Findings from that study indicated that 75% of the respondents thought that tax collection machines have helped to curb cases of tax evasion and ensured that revenue officials are accountable.

E-governance has also enabled the regular compilation and publication of revenue reports. Shim and Eom (2008) on the relationship between e-governance and anti-corruption show that e-governance effectively enhanced government transparency in Brazil. Increased transparency resulting from the introduction of e-governance processes has to do with how the revenue is being collected. Bank payments of taxes enable easy audit and mitigate the propensity for shady transactions.

In an interview with a staff of the state Inland Revenue Service, financial transparency was cited as one of the improvements of implementing e-governance. According to the respondents, 'Before now, there were a lot of cash transactions that led to misappropriation, mismanagement, and fraud. But automation allows for cash transit directly into the government accounts as there is no room for cash transactions anymore.' The implication of the above shows that e-governance which automates cash transactions ensures that cash transactions reach the government and are not diverted by middlemen tax collectors.

E-Governance and Internal Revenue in Some Countries

a. Malaysia

As earlier posited e-governance has since been implemented in other countries with monumental gains as demonstrated in a plethora of studies. Considering the above, Lai (2008) examined the impact of e-governance especially, e-filing on revenue generation in Malaysia. The study sought to demonstrate the extent to which e-governance has impacted the country's internally generated revenue and the effect of tax evasion and avoidance revenue generation in the state. The study employed both primary and secondary sources of data collection, using the survey research design and with both descriptive and regressive analysis carried out on the said data. Findings from the analysis of data indicate that e-governance measures designed and implemented for revenue collection significantly improved the country's revenue base from 2.3% to 5% in 2006 and 7% in 2007 respectively.

b. Turkey

Allahverd et al (2017) examine the impact of e-taxation on tax revenue and cost in Turkey, with secondary data assembled from the Turkey Revenue Authority. The data were presented in two groups to wit, the pre-electronic tax period of 1993-2004 and the post-electronic tax period, of 2004-2016 while adopting the Mann-Whiney U Test in data analysis. The commentaries from empirical data for the study revealed that the post-electronic tax system has a significant effect on tax revenue generation and consequent reduction of costs in tax administration and collection. The study also provided relevant information on the electronic tax transformation of the Turkish tax system and its benefits.

In a related vein, According to Mayahira (2008), information and communication technology can assist in improving transparency and efficiency in tax administration as well as the realization of fiscal policy objectives. In a related development, Relhan et al (2012), suggested that information and communication technology derive the mechanism for effective revenue collection. This laudable process includes the use of e-filing for tax assessment and collection, and online application including submission of returns and compilation. For instance, the Chandigarh administration in India implemented an e-billing system for tax payments, water rates, and sewage and electricity bills. The scholars further highlighted that in Mauritius; to facilitate tax collection from large and medium employers in the country, the government initiated an electronic payment system called 'the contributed network project.' The system was meant to monitor revenue collection and expenditure with the overall aim of enhancing transparency. They added that in Mongolia, to capture and monitor public expenditure, and revenue to facilitate transparency, an e-financial system was implemented to connect the different services involved including the commercial banks and the capital city treasury.

c. Brazil

A study by Shim and Eom (2008) on the relationship between e-governance and anti-corruption shows that e-governance effectively enhanced government transparency in Brazil. The Brazilian government created a system called 'complacent' in which reverse auctions are possible. Through the complaint, public procurement is registered, and the prices of outsourced services covering 6,000 providers and 530 types of services are listed in the system. This system enables high-level public officers to compare the prices of a proposed contract with similar bids and to renegotiate the contract if the price is excessively high. The system is expected to save over 20% of the total amount of government contracts, which was to the tune of about $150 million. The study was able to solve the problem of corruption in the award of government contracts and increased transparency in Brazil's public dealings.

d. Kenya

Sagas et al., (2015) assessed the impact of electronic tax registers on revenue collection by Kenya Revenue Authority Western Region, Kenya. Findings from their study indicate that 75% of the respondents believed electronic tax Registers (ETR) machines have helped to curb cases of tax evasion and ensured that revenue officials are accountable;86% of the respondents believed ETRs have helped increase revenue collection due to their efficient nature. Similarly, Mitullah (2005) did a survey of 175 local governments in Kenya on the effectiveness of the information system and came up with the conclusion that it was very instrumental in enhancing the proper management of revenue sources in the local authority.

e. Iran

Barati and Bakhshayesh (2015) examined the electronic tax system and the challenges facing Kermanshah province taxpayers in Iran the study employed primary data from questionnaires administered to residents of Kermanshah province while analyses were done using the Spearman correlation coefficient, variance analysis, superiority indexes, the agent exploring analysis, structural equations model, in which high sensitivity is used to check their compliance and review. The findings indicate that: technical and infrastructural variables (95/0), social influence (90/0), the expected effort (51/0), legal issues (40/0), expected performance (32/0), information access (18/0) and perceived risk (11/0) are factors of importance and more influence on the affecting factors for the adoption of electronic tax.

f. United States of America

Tosun (2014) examined electronic tax filing in the United States of America. The study summarizes and analyses the demographic, socio-economic, and geographic factors affecting electronic tax filing in the United States for the years 1999, and 2004–2007 and the growth in e-filing between 1999 and 2007. Secondary data sourced from the IRS Statistics of Income ("SOI") Division and additional demographic and geographic information from the Bureau of Economic Analysis (BEA), the Bureau of Labor Statistics (BLS), and the Census Bureau were used. Data analyses were done using regression. The findings indicated that the rates of electronic filing are noticed to be lower in rural communities with low populations and with a lower share of females and that, educational attainment is negatively correlated with electronic filing rate and growth in electronic filing. Amabali (2009) studied the antecedents of paperless income tax filing by young professionals in India using Regression analysis. The antecedents of young Indian professionals depended on the perceived ease of the tax system, personal innovativeness in information technology, relative advantage, performance of filing service, and compatibility Pippin From the above exposition, it is glaring that e-governance has enjoyed wide applicability in other jurisdictions with monumental benefits some of which Nigeria is yet to benefit.

Theoretical framework

Technology Acceptance Model (TAM) by Fred Davies (1989)

Specifically, the Technology Acceptance Model was developed by Davis (1989). It is one of the most popular research models to predict the use and acceptance of information systems and technology by individual users. TAM has been widely studied and verified by different studies that examine the individual technology acceptance behavior in different information systems constructs.

In the TAM model, there are two factors namely, perceived usefulness and perceived ease of use by computer user's behaviors. Davis defines perceived usefulness as the prospective user's subjective probability that using a specific application system will enhance his or her job or life performance. Perceive ease of use (EOU) can be defined as the degree to which the prospective user expects the target system to be free of effort. According to the theory, ease of use and perceived usefulness are the most important determinants of actual system use. These two factors are influenced by external variables. The main external factors that are usually manifested are social factors, cultural factors, and political factors. Social factors include language, skills, and facilitating conditions. Political factors are mainly the impact of using technology in politics and political crises. The attitude to use is concerned with the user's evaluation of the desirability of employing a particular information system application. Behavioral intention is the measure of the likelihood of a person employing the application.

The technology acceptance model is one of the theories that have been used to explain information system usage. The theory explains that individuals will adopt new technology based on how they perceive it to be useful and the ease with which it can be used. The technology acceptance model has been used by several studies to explain the adoption of e-governance technologies. In most cases, the theory shows why government agencies have delayed in implementing e-governance. Some of these reasons have been that they cannot conveniently utilize the various technologies associated with ICT tools. In this scenario, the theory posits that there is a need for government officials to be trained to be able to effectively utilize e-governance tools.

Several studies have expressed inadequacies of TAM to address the nexus between technology and the actual adoption and use of technology. Findings showed weaknesses of TAM to explain users' behavior. It was further argued that the TAM model could not sufficiently predict the acceptance of information communication technology (ICT) while another model was solicited to predict the acceptance of technology. It was also inferred that the TAM model was not able to provide comprehensive precursors to mobile use, or social influence and conditions that facilitate behavior. This theory enables the respective agencies to express their shortcomings in their drive to deploy e-governance in revenue generation and administration in Nigeria.

Methodology

Design and Study Area

The study employs the descriptive survey research design. The survey essentially describes and interprets what exists at present in Cross River State Internal Revenue Service, Nigeria. The justification for the adoption of this design is its ability to lead investigation and scientific interrogation of the phenomenon as it occurs without attempting to control or manipulate it. It also aids the researcher inappropriately describing the variables under study.

Study Population

The population of the study comprised 498 staff of Cross River State Internal Revenue Service. After sampling and determination, a total of 222 respondents were drawn to represent the sample population of the study. The distribution of the sample population is presented in Table 2:

Table 2: Population distribution of the study

S/N	Categories	Population	Percentage (5%)
1.	Tax operation/Value Doctrine Unit	42	19%
2.	Internal Audit	35	16%
3.	ICT Unit	33	15%
4.	Legal/Corporate Affairs	37	16%
5.	Account Unit	35	16%
6.	Administrative Unit	40	18%
Total		**222**	**100%**

The population of the study consists of 498 staff of the Cross-River State Internal Revenue Service (CRIRS). According to data supplied from the agency (CRIRS), there are 313 permanent staff and 185 temporary staff of which male to female ratio read thus; permanent staff male = 60%, females = 40%; temporary staff, male = 65.4%, females = 34.6%; Senior = 93% while junior = 7%.

Sample determination and sampling techniques

Taro Yamane formula was applied to the population to determine the sample size for the study. The formula is expressed thus:

$$n = \frac{N}{1 + N(e)^2}$$

Where;

n	=	Sample size
N	=	Population of the Study
E	=	Degree of error; that is 0.05

Based on the Taro Yamane formula, the population of the study consists of 222 staff of the Cross-River State Internal Revenue Service (CRIRS).

The technique employed in selecting the sample size is the purposive sampling technique. The purposive sampling technique is a non-probability or random sampling technique that relies on the judgment of the researcher in selecting the sample for the study. In applying the purposive sampling technique, the researcher selected staff members who have had at least five years of working experience with the organization. The researcher also evenly spread out the sample between the senior and junior staff, male and female respectively.

Ethical Considerations and Administration of Instruments

Before administering the instrument, informed consent was sought through the Director, of Cross River State Internal Revenue Service, notifying him of the purpose of the study, enlisting his understanding and cooperation. Consents were also obtained from the individual respondents who are the staff of the Internal Revenue Service. Prior to administering the questionnaire, participants were briefed on the purpose of the study and were made to understand that participation is voluntary. With the approval, the researcher sent a mail to all the various departmental heads who were eventually used as the research assistants to assist in administering the questionnaire. The individual response was retrieved within two weeks of its administration through mail. The essence is to give the respondents ample time to respond to the instrument and to enable the researcher to get the required responses needed for the study.

Method of Data Analysis

The simple percentage was used in presenting the socio-demographic information of respondents while the hypothesis was tested using Pearson Product Moment Correlation (PPMC). The study employed a paired sample *t*-test otherwise known as the Pre-Post Test as a data analysis technique. Paired sample *t*-test is a statistical procedure used to determine whether the mean difference between two sets of observation is zero. In a paired sample *t*-test, each subject or entity is measured twice, resulting in pairs of observations. The appropriateness of this method can be justified by the fact that each variable was grouped into two observations (before e-governance implementation and after e-governance implementation). All analysis was electronically computed using the Statistical Package for Social Sciences (SPSS) version 20.

Results

Respondents' Socio-demographic Data

There was a total of 222 survey instruments administered to the sampled staff of Cross River State Internal Revenue Service. Out of which 221 were retrieved. Data obtained shows that most of the respondents (54.8%) are male staff of the Agency and most of them between the ages of 28-37 (45.7%) are married (65.6%). Among the respondents (63.3%) are said to have completed their higher education. And those with the highest years of service (44.3%) have spent 6-10 years. The result further reveals that the Agency is dominated by a senior staff cadre of (71.5%).

E-governance and increased Internally Generated Revenue

Table 3: Responses to E-governance Variables in Cross River State

S/N	ITEMS	SA	A	D	SD
1	Electronic payment and filings have enhanced efficiency and effectiveness in my organization	132 (59.7%)	44 (19.9%)	45 (20.4%)	-
2	Electronic registration, receipt and returns has reduced human error in service delivery in my organization	133 (60.2%)	88 (39.8%)	-	-
3	The introduction of electronic assessment in my organization has increased productivity	132 (59.7)	89 (40.3%)	-	-
4	Electronic registration has increased confidence in our transactions	176 (79.6%)	45 (20.4%)	-	-
5	Electronic payment, filing and other components are very expensive to implement in my organization	133 (60.2%)	88 (39.8%)	-	-

Source: Researcher' s Survey, 2020

Table 3 above shows the percentage distribution of respondent's responses to e-governance in Cross River state. The first item in this sub-section on whether "Electronic payment and filings have enhanced efficiency and effectiveness in my organization" 132(59.7%) of the total respondents strongly agreed to the question, 44(19.9%) respondents agreed while 45(20.4%) respondents disagreed. The second item on whether "Electronic registration, receipt, and returns have reduced human error in service delivery in my organization" revealed that 133(60.2%) respondents strongly agreed with 33(39.8%) agreed responses were recorded. In the third item which read whether "The introduction of electronic assessment in my organization has increased productivity" 132(59.7) respondents strongly agree and 89(40.3%) respondents agree respectively. The fourth item "Electronic registration has increased confidence in our transactions" analysis indicates that 176(79.6%) and 45(20.4%) respondents responded strongly agree and agree respectively. The last item on whether "Electronic payment, filing, and other components are very expensive to implement in my organization" responses showed that 133(60.2%) respondents strongly agreed while 88(39.8%) respondents agreed respectively.

Table 4: Responses on E-governance and increased Internally Generated Revenue in Cross River State

S/N	ITEMS	SA	A	D	SD
1	Revenue collection through electronic means eliminates incidents of nonresistance.	122 (55.2%)	52 (23.5%)	33 (14.9%)	14 (6.3%)
2	Internally generated revenue collected through electronic means increased significantly greater than the era before e-applications in revenue collections and administration	121 (54.8%)	62 (28.1%)	23 (10.4%)	15 (6.8%)
3	E-governance processes in collecting revenue are not understood by majority of the people and subsequently tends to reduce the size of internally generated revenue	60 (27.1%)	63 (28.5%)	58 (26.2%)	40 (18.1%)
4	Internally generated revenue since the introduction of e-governance system has not increased significantly	93 (42.1%)	48 (21.7%)	32 (14.5%)	48 (21.7%)
5	Tax can be paid as at when due with the use of e-governance hence tax levies can be easily determined	99 (44.8%)	95 (43.0%)	22 (10.0%)	5 (2.3%)
6	Electronic tax payments and other electric mediums have increasing tax revenue significantly.	133 (60.2%)	88 (39.8%)		

Source: Researcher's Survey, 2020

Table 4 above shows the percentage distribution of respondents' responses to e-governance and productivity in internally generated revenue in Cross River State. The first item in this sub-section on whether "Revenue collection through electronic means eliminates incidents non-romance of tax revenue" shows that 122(55.2%) respondents of the total sample responded with strongly agree to the question, 52(23.5%) respondents, 33(14.9%) respondents, and 14(6.3%) respondents responded agreed, disagreed and strongly disagreed respectively. The second item on whether "Internally generated revenue collected through electronic means increased significantly greater than the era before e-applications in revenue collections and administration" indicated that 121(54.8%) respondents strongly agreed, 62(28.1%) respondents agreed, 23(10.4%) respondents disagreed while 15(6.8%) respondents strongly disagreed respectively. The third item on whether "E-governance processes in collecting revenue are not understood by the majority of the people and subsequently tends to reduce the size of internally generated revenue" indicated that 60 (27.1%) respondents strongly agreed, 63(28.5%) respondents agreed, 58(26.2%) respondents disagreed while 40(18.1%) respondents responded strongly disagreed. The fourth item, on whether "Internally generated revenue since the introduction of e-governance system has not increased significantly" indicated that 93(42.1%) respondents, 48(21.7%) respondents, 32(14.5%) respondents, and 48(21.7%) respondents strongly agreed, agreed, disagreed and strongly disagreed respectively. The fifth item, on whether "Tax can be paid as at when due with the use of e-payment, hence tax levies can be easily determined" indicates that 99(44.8%) respondents strongly agreed, 95(43.0%) respondents agreed, 22(10.0%) respondents strongly disagreed while 5(2.3%) respondents disagreed respectively. The last item on whether "Electronic tax payments and other electric mediums have increased tax revenue significantly," 133 amounting to (60.2%) of the total respondents strongly agreed while 88 (39.8%) agreed on lock, stock, and barrel.

Discussion of Findings

The result of the analysis on the relationship between e-governance and increased size in internally generated revenue using the Pearson product-moment correlation statistical technique showed that e-governance is positively correlated with the increase in internally generated revenue. In plain terms, this implies that the introduction of an e-governance mechanism is associated with an increase in internally generated revenue.

The result of these findings is corroborated by a plethora of studies conducted by scholars with similar conclusions reached. It is important to point out that most studies maintained that the introduction of e-governance was precipitated by the shortfall in revenue, occasioned by fraudulence practices between revenue agents and payers. This was the position advocated by Nkanor and Udu (2016) when they stated that, it was the weakness of the manual collection of revenue that led to the integration of information and communication technology in the internal revenue collection process. Manual collection of revenue was plagued by incidents which mainly included sharp practices by revenue collection officials.

Similarly, Sani (2013) conducted a study that yielded a similar result, that e-governance was positively related to increased revenue generation. The position of that study was based on evidence that e-governance corrected most of the deficiencies which were obtainable in the manual collection of revenue system and that since its introduction; there were significant raises in the revenue collected by the revenue collection agencies. Nasir (2015) carried out an extensive study to show the importance of electronic governance in the manual revenue collection process. The findings of that study conform with the results of this study which read in part, that if properly maintained, efficiently deployed, and effectively managed, electronic system of filing and tax collection and payment tends to benefit both the revenue-payers and the revenue collecting authority in varying degrees, hence increased standard of living for the citizenry.

In Cross River state, before the introduction of electronic payment channels for revenue payment, filing of returns and objections, assessment, and revenue collection were mired in systemic corruption which led to the diversion of revenue to a few persons. Revenue agents were in the habit of under-declaring the proceeds of revenue gotten from the revenue-paying public. This can be seen in the IGR trends as published by the Cross River State Internal Revenue Service. Before 2011 when e-governance measures for revenue collection were instituted, the highest remittance was N7, 870,941,915.25 in 2010. However, by 2011, revenue continued to scale upwards reaching N18,104,848,986.68 in 2017 because of more efficiency and less manipulation that characterized the manual revenue collection process. A cursory look at the revenue trend obtained from the Cross River Internal Revenue Service also shows a geometric increase in revenues when comparing the period before automation. The data shows that as of 2000, the agency remitted 245,301,560.69, with, the 2010 figure above being the highest. The period after automation recorded N9, 159,651,948.22 as the least remittance.

The position that the adoption increases internal revenue has been echoed in recent empirical works including but not limited to those highlighted hereunder. On this, Lai (2008) examined the impact of e-governance especially, e-filing on revenue generation in Malaysia. The study by Lai (2008) employed both primary and secondary sources of data and employed both the survey research design to reach the results. The findings of the study have it that, e-governance measures designed and implemented for revenue collection significantly improve the country's revenue base. The researchers did a comparative study of revenue trends before the introduction of e-governance and concluded that increased revenue recorded during the period of e-governance can be attributed to the introduction of e-governance measures.

Conclusion

This study was carried out to evaluate the impact of e-governance on internally generated revenue in Cross River State Internal Revenue Service. the findings shows that e-governance processes were yielding positive results in boosting internally generated revenue and economic development in the state. Further conclusions reached are;

i. The study indicated that e-governance led to a significant increase in internally generated revenue in Cross River State. The survey results indicated that since the introduction of e-governance processes in Cross River State such as e-filing of revenue returns there has been an increase in revenue generated orchestrated by increased capturing of eligible revenue payers since automation of the processes began in 2011.

ii. The study also disclosed that the above positive tends is associated with e-governance. It emphasizes that e-governance has led to increased transparency in internally generated revenue. This indicated that e-governance processes have opened and increased the confidence of the users of the system. Survey results had shown that part of the e-governance process involved publishing financial information regularly inter alia. This was made possible through e-governance otherwise termed "Automation".

iii. Equally, the study affirmed that e-governance has led to a reduction in the cost of administration. This drastically reduced operating costs for the Cross-State River Internal Revenue Service and Cross River State Government by extension.

Recommendations

Base on the findings and conclusions reached, the study recommends that;

1. There should be a deliberate effort to enhance the effectiveness of revenue officers of the state. This can be done by constantly training and retraining the revenue officers in the latest ICT innovations, revenue policies in line with global best practices, and other extant laws.

2. The Cross River Internal Revenue Service should make significant efforts to improve accessibility to e-governance processes. This can be done by leveraging smartphone technology. CRIRs should liaise with software developers to design Smartphone apps where revenue payers can sign in with their Revenue Identification Numbers (RINs), create accounts, and pay their revenues, as well partake in self-assessment, Best of Judgment (BOJ) as well as refusal to amend when and where applicable electronically.
3. To further ensure reduced cost of administration in internally generated revenue, the management of the Cross River Internal Revenue Service should adopt online cloud data storage where tax information of residents is stored, processed, and retrieved in a secured online database. With cloud data storage and computing, the government will avoid the huge cost of acquiring computer equipment and infrastructures.

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