

# Information and Communication Technology (ICT) Compliance as a Determinant of Effective Tax Administration in The Gambia

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**Abstract:-** Information and communication technology (ICT) through digitalization has become the epicenter of different nations' economic activities and has rendered the traditional tax rules and processes ineffective and inefficient. This paper examines the relationship between information and communication technology (ICT) compliance and its effect on tax administration in the Gambia. It relied on the use of questionnaires and structured interview methods for gathering primary data while secondary data were sourced through textbooks, academic journals, internet materials, unpublished research thesis, official publications. The data collected for the study were analyzed using the descriptive statistical method. This includes the use of simple percentages and frequency distribution. The results of the study among others revealed that there is a positive relationship between information and communication technology (ICT) and tax administration in The Gambia.

**Keywords:** Information and communication technology, Compliance, Tax administration, The Gambia.

## I. INTRODUCTION

Information and communication technology through digitalization has become the epicenter of different nations' economic activities and has rendered the traditional tax rules and processes ineffective and inefficient. Consequently, the dawn of the information and communication technology age has been the driving force of all human activities. Information and communication technology dominates the globe giving rise to a digital economy, E-commerce, and information technology of tax system which has brought unprecedented speed in business transactions and revolution changing the face of tax administration in countries (Obe, 2019).

In The Gambia, tax is a major source of revenue to the government and the administration of tax plays a pivotal role in the amount of revenue accruable to the government. Therefore, the knowledge of information and communication technology should inform the attitude of its adoption and ability to sustain and or aid tax administrators' performance thereby reducing tax avoidance and evasion. Information and communication technology creates room for faster and more accurate analysis of tax data. Dimitropoulous et al., (2018) opined that taxation is often used by the government as a way of influencing social amenities and the social lives of its citizens.

According to the 2018 Gambia budget, "the Gambia government has invested in ICT development to further improve the process and efficiency of tax administration" adding that the Gambia government has rolled out the GAMBAXNET System to be used for domestic tax administration in all tax offices in the country". Issues of The Gambia government striving to harness the benefits of information and communication technology in government parastatals for equitable development dominate The Gambia National Development Plan of 2018-2021. This has been substantively linked to weaknesses impeding the Gambia Revenue Authority (GRA) from achieving its revenue potential, including deficiencies in improving compliance, low integrity of the taxpayer registration base, and relatively weak compliance of information and communication technology (ICT) including refund systems among others. These problems are prompted by weak institutional framework on taxation, related tax policy, administrative capacity, perennial delay in tax administration, loss of tax revenue generation due to inadequate tax-payers database, and non-tax compliance expressed by the Gambia Revenue Authority in their performance (World Bank Group report, 2020).

Furthermore, the 2020 budget highlighted government action on tax reform plans to address the weaknesses identified in the 2018 Tax Administration Diagnostic Assessment Tool (TADAT) Report by the IMF. In the same vein, scholars have carried out research on information and communication technology and tax administration globally. Monica et al. (2017) conducted research on the "Effects of Electronic Tax System on Tax Collection Efficiency in Domestic Taxes Department of Kenya Revenue Authority (KRA)" in the Rift Valley region; Oseni, M. (2016) focused on the nexus of information and communications technology in the administration of tax in Nigeria; Faustine et al (2020) examine the influence of the e-tax system on tax revenue collection in Tanzania among others. In the Gambia, there is inadequate academic research work that has been carried out on the impact of information technology on tax administration in the Gambia. Despite the efforts of the Gambia government in addressing ICT compliance challenges, its impacts on the effective tax administration in the country have not been established.

*Information and Communication Technology and Tax Administration in The Gambia*

The span of the creative use of information and communication technology extends to all spheres of human endeavor including governance, prison, pension, health, banking, agriculture, tax administration among others. In today's business world, the location of business does not matter because of the adoption and use of information and communication technology. ICT has made it possible to have business units not be centralized in one location be it in a region or a country. Schafer and Spengel (2004) opined that due to the increased use of information and communication technology, geographical distance within an organization, between different organizations as well as between organisations and consumers tends to be inconsequential. In addition, they added that an organisation's intangible assets and services currently constitute the main factors for the creation of value, stressing further that many business functions are becoming more peripatetic and more independent of physical location factors.

However, the Gambia Revenue Authority needs human and material resources as tools necessary to achieve desirable predetermined goals and objectives in the administration of tax. According to the World Bank Group report (2020), the institutional framework on taxation and the related tax policy and administrative capacity in the Gambia are relatively weak. Abiola and Asiweh (2012) are of the opinion that if management and organizational approaches in the implementation of tax policies are very weak, the weaknesses can impede the organization, in this case, the Gambia Revenue Authority (GRA) from achieving its revenue potential. They further stressed that these weaknesses can be traced to the use of poor tools, inadequate staffing of the tax-collecting organisation, poor funding, deficiencies in improving compliance, low integrity of the taxpayer registration base, bad access road to the interior of the rural areas, poor enlightenment, relatively weak ICT and refund systems, among others. Abiola and Asiweh (2012) also stressed that in the absence of tools, inadequate staffing of the tax-collecting organization, etc., what becomes a possible option in the most tax system is paper documentation that has been branded with mutilation and falsification of figures both on the part of the tax officers and the taxpayers as well.

Agusiy (2003) opined that information and communication technology play vital roles in developing countries where data accuracies are hindrances to effective tax administration. He highlights the benefits to include speed and improved efficiency; accuracy of tax computation; reliability of data used; consistency in the information generated and improved productivity. Also added is the fact that information and communication technology is being applied in intelligence gathering, the use, and issuance of unique tax identification numbers and the use of electronic payment (e-payment).

The provision of good governance is the major role of government. This is contained in the 1997 Gambia

constitution where it was expressly stated that the role of the government is the provision of security and welfare to the people. Therefore, the provision of electricity, potable water, pension, prison services, maintenance of law and order, good roads, telecommunications among others to the general public by the government is part of good governance. Where government does not provide these facilities to citizens in exchange for taxes paid, citizens become discouraged from tax payment. In this viewpoint, Akpo (2009) orate that administration of tax is bound to have challenges. And these challenges could be constitutional, technological, economic, environmental, educational, structural, political, social, cultural, and religious. All these are interwoven and each one is as important as the other. In order to attain effective tax administration, he concludes that a comprehensive approach is needed to tackle these identified challenges.

Taxation is an obligation imposed by the government on its citizens of unavoidable contributions or levies on property, income, commodities, transactions and so forth, solely for raising revenue for public expenditure. Chatama (2013) opined in his study on the impact of ICT on taxation in Tanzania that the application of ICT affected both the design and administration of the tax system. It has also helped to maintain consistent record keeping; timely access to such records and fast processing of returns which together improve the performance of tax administration and revenue generation.

In an experimental visit to the Gambia Revenue Authority, it was gathered that information and communication technology is used to enhance performance in tax administrations by reducing human error and processing times, providing readily accessible data for tax officers, promoting voluntary compliance thereby minimizing tax evasion and aiding quick, reliable, accurate and better decision making by the tax authorities. The tax administration in the Gambia has been automated since the inception of the GRA in 2004 by an act of the Gambia National Assembly. GRA tax operations are embodied in electronic processes and custom-made operations to address specified areas of the tax system such as discuss below:

TIN (Taxpayer Identification Number) Project is an electronic system of tax identification, involving the assignment of a computer-generated unique identifier called "TIN Number" to every taxable person in the Gambia. This project helps in the development of the National Tax Database linking all major stakeholders and branches of revenue authorities in the country. TIN project is a legitimate and technological way of dragging every taxable Gambia into the tax net. The TIN registration captures the properties, assets, biodata and biometric details (fingerprints) of the taxpayers to ensure the highest accuracy of identity uniqueness. Precautionary measures such as disaster recovery and contact management centers are put in place to ensure minimal downtime and outright failure of the project. It is now compulsory for any individual, corporate entity, registered organizations and group of people that want to carry out vital operations such as

the opening of bank account, renewal of car license, driver license, renewal of a residential permit, award of contract, etc to have TIN which will reduce to the barest minimum the incidence of tax evasion.

The Gambia Revenue Authority custom and excise department are currently using the ASYCUDA ++. According to UNCTAD (1997), ASYCUDA (Automated System for Customs Data) is a programme for the modernisation of customs administrations and procedures. It has been developed by UNCTAD in September 1987 in Geneva and is currently operating being implemented in over eighty countries worldwide. The programme aims to speed customs clearance through the simplification and computerization of procedures, thus minimizing administrative costs to the business community and countries' economies. At the same time, it is designed to fight fraud through the application of risk management and targeting techniques. Furthermore, it aims to increase revenue, which is the major contributor to national budgets in most countries by ensuring that all goods are declared, that duty/tax calculations are correct and that development exemptions are properly managed. It aims to produce reliable and timely trade and fiscal statistics to aid the economic planning process automatically. The ASYCUDA++

core modules cover system administration, national configuration, tariff and master file maintenance, cargo manifest handling, declaration processing, risk assessment (selectivity), accounting and direct trader input (broker module).

GAMTAXNET is currently being used by the domestic taxes department of the Gambia Revenue Authority (DTDTG) to enhance its operation. This study found out during a pre-field visit that the GAMTAXNET is an internal revenue software system that is locally developed to meet the revenue collection mechanism of the Gambia Revenue Authority (GRA). The software system addresses value-added tax (VAT), assessment of taxpayers, tax filling, and returns, it also does enforcement and auditing among others.

The GAMTAXNET provides statistics of revenue collected per post and or office station/branch and tax obligation due. The GAMTAXNET software system can generate a tax identification number (TIN) which is primary for all business operations. The tax identification number (TIN) is used to track the activities of all importers and traders in the country. The table below shows the performance breakdown of revenue generated against the set target due to the application of ICT in the tax administration of GRA from 2006 to 2020.

YEAR	CUSTOMS & EXCISE DEPARTMENT		DOMESTIC TAXES DEPARTMENT		GRA	
	TARGET	REVENUE	TARGET	REVENUE	TARGET	REVENUE
2006	1,500,150,000	1,642,055,508.73	1,211,491,000	1,186,995,702.20	2,711,641,000	2,829,051,210.93
2007	1,701,150,000	1,898,734,182.02	1,330,745,000	1,425,981,744.72	3,031,895,000	3,324,715,926.74
2008	1,970,368,200	1,675,920,714.53	1,621,401,000	1,693,333,682.97	3,591,769,200	3,369,254,397.50
2009	1,843,240,370	2,268,207,015.90	1,842,951,100	1,523,526,420.74	3,686,191,470	3,791,733,436.64
2010	2,395,581,490	2,086,319,888.55	1,826,163,930	1,773,227,868.12	4,221,745,420	3,859,547,756.67
2011	2,328,911,020	2,157,754,336.59	2,120,637,790	2,026,645,000.09	4,449,548,810	4,184,399,336.68
2012	2,264,273,240	2,306,192,133.30	2,208,902,440	2,437,526,708.11	4,473,175,680	4,743,718,841.41
2013	2,531,166,120	2,692,787,689.29	2,568,517,080	2,489,161,742.42	5,099,683,200	5,181,949,431.71
2014	2,968,000,000	3,414,382,215.25	2,798,930,000	2,853,561,150.44	5,766,930,000	6,267,943,365.69
2015	4,200,067,692	4,393,786,420.18	3,358,489,098	3,222,343,890.54	7,558,556,790	7,616,130,310.72
2016	4,808,247,910	4,558,459,534.12	3,552,852,240	3,336,972,348.22	8,361,100,150	7,895,431,882.34
2017	3,970,023,654	4,563,088,595.53	3,030,084,130	3,407,504,322.86	7,000,107,784	7,970,592,918.39
2018	4,285,161,520	5,248,749,642.92	3,766,326,760	3,884,864,111.28	8,051,488,280	9,133,613,754.20
2019	6,128,132,990	6,175,165,019.22	4,572,770,950	4,829,336,021.85	10,700,903,940	11,004,501,041.07
2020	6,024,647,888	6,746,123,516.01	4,064,129,956	5,061,801,544.94	10,088,777,844	11,807,925,060.95

Source: Field Work, September (2021)

### Theoretical Underpinning

This study deployed the Unified Theory of Acceptance and Use of Technology (UTAUT) as a framework. The theory was proposed and popularized by Venkatesh et al. (2003).

Venkatesh et al. (2003) proposed and popularised the unified theory of acceptance and use of technology through evaluating and integrating concepts from eight theories and models namely; Theory of Reasoned Action (TRA),

Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), a combined theory of planned behavior/technology acceptance model (C-TPB-TAM), model of PC utilization (MPCU), diffusion of innovation theory (DOI), and social cognitive theory (SCT). By so doing Venkatesh et al. (2003) aimed to develop a unified understanding by avoiding repetitions as several concepts in these theories were common. The main thrust of UTAUT is to explain the intentions of an organisation's adoption of information and communication technology (ICT) and the subsequent user behavior. The UTAUT model considers four independent constructs as direct determinants of user acceptance and usage behavior, namely performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC). The effect of the independent variables on dependent variables is moderated by the following four moderating variables: gender, age, experience, and voluntariness of use (Venkatesh et al., 2003). Two UTAUT constructs are like TAM constructs: Performance Expectancy (PE) can be linked to perceived usefulness (PU) whereas effort expectancy (EE) can be linked to Perceived Ease of Use (PEOU). The remaining two UTAUT constructs (SI and FC) are from TPB. Venkatesh et al. (2003) opined that UTAUT provides a tool for managers to assess the likelihood of the success of technology introductions and to understand the drivers of acceptance in order to design interventions, which include, e.g., training or marketing. UTAUT also focuses on users who may be less willing to adopt and use new systems.

The philosophy of this theory is related to the independent variable of this study; hence it is considered appropriate and relevant to the study. The theory considers four constructs as direct determinants of user acceptance and usage behavior, namely performance expectancy, effort expectancy, social influence, and facilitating conditions. With regards to tax administration in the Gambia, The Gambia Revenue Authority's compliance and or acceptance of information technology application in its operation in 2004 when it was established is based on the expected performance and ability to facilitate its operation in dealing with taxpayers of all categories. The GRA in keeping with the tenets of Venkatesh et al (2003) provides tools to assess the likelihood of the success of the technology introductions and to understand the drivers of compliance and or acceptance in order to design interventions, which include, the training of its staff to cope with the technology as well as the marketing (promotion, place, person, physical evidence, product, price, process), especially by involving Inter-Bank Settlement System as a channel through which taxpayers can conveniently pay their taxes.

During a pilot visit, the Commissioner-General (CG) of GRA referred me to his welcome address to esteemed customers and stakeholders in establishing a website for the parastatal. The Commissioner-General (CG) of GRA opined that "the GRA is aware of the digital world in which we all live, adding that it requires that we also have to meet these demanding

challenges in order to catch up with the speed of technology. He added that it is against this backdrop that the GRA is investing in a website that is dynamic, robust, and user-friendly in strengthening the network with all stakeholders. He stressed further that this has the potential of facilitating trade, improving investment, and enhancing revenue collection. This study intends to answer these questions: Is information and communication technology (ICT) compliance a determinant of effective tax administration? What are the effects of information and communication technology (ICT) compliance on effective tax administration in the Gambia?

### *Hypothesis*

H0: There is no positive relationship between ICT compliance and tax administration in The Gambia.

H1: There is a positive relationship between ICT compliance and tax administration in The Gambia.

## II. METHODOLOGY

This paper made use of both primary and secondary sources of data. Primary data were collected using questionnaires and structured interviews. The paper adopted the survey research design using a structured questionnaire (on a 4-Likert scale of strongly agree (SA), Agree (A), disagree (D) and strongly disagree (SD)) for gathering the primary data. The population of this study comprised the senior and middle management staff of the Ministry of Finance and Economic Affairs (MoFEA) and the entire staff of the Gambia Revenue Authority. It was confirmed during a pre-field visit that there are nineteen (19) senior and middle management staff in the Ministry of Finance and Economic Affairs (MoFEA) and that the entire staff of in the Gambia Revenue Authority are eight hundred and thirty (830) as at September 2021, totaling eight hundred and forty-nine (849) as the total population of this study.

Using simple random sampling, nineteen (19) senior and middle management staff in the Ministry of Finance and Economic Affairs (MoFEA), twenty-eight (28) top and middle management staff of the Gambia Revenue Authority (GRA), the twenty (20) management staff of the department of domestic tax unit, twenty-one (21) management staff in the department of customs and excise unit, the twenty (24) management staff in the account/finance department, the eighteen (18) management staff in the HRM department and (8) staff in the IT department, totaling one hundred and thirty-eight (138) were also sampled for the study.

The Ministry of Finance and Economic Affairs (MoFEA) and the Gambia Revenue Authority (GRA) were purposively selected for the study. The Ministry of Finance and Economic Affairs (MoFEA) is the supervisory ministry of the Gambia Revenue Authority (GRA) saddled with the responsibility of overseeing the administration of tax in the country. Data were also collected from secondary sources such as textbooks, academic journals, internet materials unpublished research thesis, official publications, and so on. The data collected for

the study were analyzed using the descriptive statistical method.

#### Research Instrument and Validation Procedures

Two research instruments were used for the study. The first was a self-designed 10-item questionnaire with a 4-Likert scale of strongly agree (SA), Agree (A), disagree (D), and strongly disagree (SD). The instrument has two parts labeled A to B. Part A covered the demographic information of the respondents. Part B contained ten (10), on the effects of information and communication technology (ICT) on tax administration in the Gambia. All the items were positively stated. The second instrument comprised 5 structured interview questions on the three dependent variables in the study. The instruments were validated study to ensure that they are reliable to provide an adequate measurement of the respondents' opinions. First, the instruments were designed

such that they contain relevant and clear questions in order to avoid ambiguity. Necessary steps were also taken to ensure that the contents were scrutinized by experts in the area of study. In addition, a pilot test was conducted to determine the validity of the questions, and necessary corrections were made afterward to suit the study. The administration of the instruments and the process of data collection lasted a period of four weeks.

### III. RESULTS AND DISCUSSION

Table 4.1 shows respondents' rate of returning the questionnaire. A total of one hundred and thirty-eight (138) copies of the questionnaire were distributed of which one hundred and twenty-six (119) copies were returned representing 86% of the total administered, while nineteen (19) copies were missing indicating the balance of 14%.

Respondent's rate of returned Questionnaires

Frequency Distribution of Respondents rate of returned Questionnaires			
Variable	Number of Questionnaire Administered	Number of Questionnaire Returned	Percentage (%) of Questionnaire Returned
MoFEA	19	14	74
GRA staff	119	105	88
<b>Total</b>	<b>138</b>	<b>119</b>	<b>86</b>

Source: Field Work, September (2021).

#### Respondents' views on the effect of information and communication technology on tax administration in The Gambia

Table 4.2: Respondents' views on the effect of information technology on tax administration in The Gambia.						
Description	Strongly Agree	Agree	Disagree	Strongly Disagree	Total	Mean
There is a positive relationship between ICT and tax administration	96 (80.7)	23 (19.3)			119 (100)	4.81
Tax administration as carried out by the GRA is undertaken by technocrats with robust knowledge of ICT.	90 (75.6)	29 (24.4)			119 (100)	4.76
The Gambia Revenue Authority (GRA) staff are ICT literate	119 (100)				119 (100)	5
The Gambia Revenue Authority operation is computerized	119 (100)				119 (100)	5
Gambia Revenue Authority is independent in its operation as it related to ICT compliance decision.	105 (88.2)	14 (11.8)			119 (100)	4.88
The ICT department of the GRA only implements policy directives from the board on software usage for the operation of GRA in The Gambia.	119 (100)				119 (100)	5
The ICT department of the GRA has a representative at the board level that helps push for policy directives on software usage for the operation of GRA in The Gambia.			83 (69.7)	36 (30.3)	119 (100)	1.7
ICT has enhanced GRA internal operation and tax Administration in The Gambia.	119 (100)				119 (100)	5
Poor database of taxpayers is no longer a problem with the current level of ICT adoption by The GRA.	94 (79)	25 (21)			119 (100)	4.79
Information and communication technology has helped GRA management to reach the needs of wide spectrum of taxpayers in The Gambia.	119 (100)				119 (100)	5
<b>Grand Mean</b>						<b>4.59</b>

Source: Field Work, September (2021).

Table 4.2 shows the respondents' views on the effect of information and communication technology on tax administration in The Gambia. 119 of the respondents, representing 100%, strongly agreed and agreed that there is a positive relationship between information and communication technology (ICT) and tax administration in The Gambia. On whether tax administration as carried out by the Gambia revenue authority (GRA) is undertaken by technocrats with robust knowledge of ICT? The study revealed that 119 of the respondents, representing 100%, strongly agreed and agreed that tax administration as carried out by the Gambia revenue authority (GRA) is undertaken by technocrats with robust knowledge of information and communication technology (ICT).

In addition, 119 of the respondents, representing 100%, strongly agreed and agreed that the Gambia Revenue Authority (GRA) staffs are ICT literate. However, 119 of the respondents, representing 100%, strongly agreed and agreed that the Gambia Revenue Authority operation is computerized. Furthermore, 119 of the respondents, representing 100%, strongly agree and agree that the Gambia Revenue Authority is independent in its operation as it related to ICT compliance decisions.

On whether the ICT department of the GRA only implements policy directives from the board on software used for the operation of GRA in The Gambia, 119 of the respondents, representing 100%, strongly agree and agree that the ICT department of the GRA only implements policy directives from the board on software used for the operation of GRA in The Gambia. When the statement, whether the ICT department of the GRA has a representative at the board level that helps push for policy directives on software used for the operation of GRA in The Gambia, 119 of the respondents strongly disagree and disagree that the ICT department of the GRA has a representative at the board level that helps push for policy directives on software used for the operation of GRA in The Gambia.

All the respondents (119), representing 100%, strongly agreed that ICT has enhanced the Gambia Revenue Authority (GRA) internal operation and tax administration in the country.

The views shared by respondents on whether a poor database of taxpayers is no longer a problem with the current level of ICT application by The GRA, 119 of the respondents, representing 100%, strongly agreed and agree that a poor database of taxpayers is no longer a problem with the current level of ICT application by the GRA.

On whether information and communication technology has helped the Gambia Revenue Authority (GRA) management to

reach the needs of a wide spectrum of taxpayers in the Gambia, 119 of the respondents, representing 95.13%, strongly agree that information and communication technology has helped the Gambia Revenue Authority (GRA) management to reach the needs of a wide spectrum of taxpayers in The Gambia.

To corroborate earlier findings with regards to the effect of information and communication technology on tax administration in The Gambia, in-depth interviews were conducted with three (3) top management staff of the Gambia Revenue Authority; they include Director-Technical Services, Director- ICT department, and the Commissioner for Domestic Tax Department/ Commissioner for Custom and Excise duty as they find it more convenient shedding more light with regards to the effect of information and communication technology in tax administration. The following were identified as the outcome of the interview with regards to the effect of information and communication technology in tax administration: it was revealed that information and communication technology has a very positive effect on the tax administration of The Gambia as well as the smooth operation of the day to day activities of the Gambia Revenue Authority, the three top management staff interviewed were unanimous that information and communication technology has helped Gambia Revenue Authority management to meet its monthly as well as yearly revenue target and this is evidence in table 2.0 showing monthly and annual revenue generated against the set target from 2006 to 2020.

The grand mean was 4.59. This is a sign that responses tend towards the "agreed" option of all the effects of information and communication technology in the tax administration of the Gambia. However, out of the ten effects of information and communication technology in tax administration outlined, nine effects of information and communication technology in tax administration of the Gambia had a mean score that is higher than the grand mean, while one effect of information and communication technology in tax administration of the Gambia had a mean score that is lower than the grand mean. Empirically, the effect of information and communication technology in tax administration of The Gambia from the perspective of respondents can be said to be positive.

#### *Test of Hypothesis*

H1: There is a positive relationship between ICT compliance and tax administration in The Gambia.

**Respondents' view on there is a positive relationship between ICT Compliance and tax administration in the Gambia**

Frequency Distribution on there is positive relationship between ICT Compliance and tax administration in The Gambia.		
Responses	Observed (Of)	Expected frequency (Ef)
Agree	23	59.5
Strongly agree	96	59.5
Total	119	

Source: Field Work (2021)

Calculating the expected frequency (Ef) = 119/2= 68.3

**Computation of Chi Square Statistical test**

Responses	Of	Ef	Of-Ef	(Of - Ef) <sup>2</sup>	(Of-Ef) <sup>2</sup> /Ef
Agree	23	59.5	-36.5	1332.25	22.39
Strongly Agree	96	59.5	36.5	1332.25	22.39
Total	119				44.78

$$\begin{aligned}
 \text{Degree of freedom} &= (R - 1) \times (C - 1) \\
 &= (2 - 1) \times (2 - 1) \\
 &= 1 \times 1
 \end{aligned}$$

Therefore, Degree of Freedom for the hypothesis = 1

Level of Significance = 5% (0.05)

Degree of Freedom= 1 under 0.05 = 1

Critical value =12.85

Calculated value= 44.78

Chi-Square Tests					
	Value	DF	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	12.846	1	.000		
Likelihood Ratio	10.195	1	.001		
Linear-by-Linear Association	12.738	1	.000		
N of Valid Cases	119				
<b>Source:</b> Field work, September (2021)					

*Decision Rule*

Accept H0 and reject H1 if the critical value is greater than the calculated value and accept H1 to reject H0 if the calculated value is greater than the critical value.

*Interpretation of Result for Research Hypothesis*

Since the calculated value of 44.78 is greater than the critical value (12.85), the alternate research hypothesis would be accepted, and the null hypothesis rejected. It can therefore be concluded that there is a positive relationship between information and communication technology (ICT) compliance

and tax administration in The Gambia. The table above shows the Chi-Square Test Analysis of the research hypothesis. It examines if there is a positive relationship between information and communication technology (ICT) and tax administration in The Gambia. The Chi-Square Test table shows the result of the tested hypothesis, where we arrived at Pearson Chi-Square Value being 12.85 with a Degree of Freedom of one (1) and Asymptotic Significant (2 sided) value is 0.000. The Likelihood ratio value is 10.195 with Asymptotic Sig. Value of 0.000, Linear-by-Linear Association Value being 12.738 with Asymptotic Sig. Value of 0.000 and the Number of Valid Cases is 119.

Since the calculated Pearson Chi-Square value 12.85 is less than the tabulated value, which is 44.78, therefore the study affirms that “there is a positive relationship between information and communication technology (ICT) compliance and tax administration in The Gambia.

#### *Empirical Evidence*

Monica et al. (2017) investigate the effects of the electronic tax system on tax collection efficiency in the Domestic Taxes Department of Kenya Revenue Authority in the Rift Valley region. Findings from the study revealed that most taxpayers strongly agreed that they were able to fully access and operate the iTax system. Owino, et al. (2017) carried out a study on the “Influence of Information and Communication Technology on Revenue Collection in County Governments in Kenya: A Comparative Study of Migori and Homa Bay County Governments”. The findings showed that a strong and almost perfect association existed between ICT systems adopted in County Governments and the revenue collection; the application of the information communication technology systems explains up to 91.9% variation in revenue collection efficiency in the county governments.

Benahia et al (2017) examine the contribution of online taxpayer registration and tax return processing on revenue collection by the Kenya Revenue Authority (KRA) Rift Valley Region, Kenya. The study established that online taxpayer registration and online tax return processing had had a significant contribution to revenue collection at KRA, Rift Valley Region. Olatunji O. C. and Ayodele K. B. (2017) examined the impact of information technology on tax administration in the southwest, Nigeria. The study revealed that information technology enhances the level of productivity in tax collectivity and administration. Specifically, online filing and remittance of tax returns by taxpayers are inversely associated with tax planning and implementation by tax administrative agencies.

Oseni, M. (2016) focused on the nexus of information and communications technology in the administration of tax in Nigeria. The findings of the study revealed that with the use of ICT, leakages were reduced. It was also found that there is no hiding place for tax evaders with the use of this modern technology since all potential taxpayers are captured by the system. Fudamu et al (2019) investigated the impact of

information technology on tax administration in Adamawa State Board of Internal Revenue Yola-Nigeria. Faustine et al (2020) examine the influence of the e-tax system on tax revenue collection in Tanzania. The result from the study reveals that the use of the e-tax system has a positive significant impact on tax revenue generation.

#### IV. SUMMARY OF FINDINGS

From the foregoing, this study revealed that there is a positive relationship between information and communication technology (ICT) compliance and tax administration in The Gambia. This is consistent with Owino, et al. (2017) who observed the “Influence of Information and Communication Technology on Revenue Collection in County Governments in Kenya: A Comparative Study of Migori and Homa Bay County Governments”. The findings showed that a strong and almost perfect association existed between ICT systems adopted in County Governments and the revenue collection; the application of the information communication technology systems explains up to 91.9% variation in revenue collection efficiency in the county governments. The position of this study was equally reiterated by Oseni (2016) who focused on the nexus of information and communications technology in the administration of tax in Nigeria.

The findings of the study revealed that with the use of ICT, leakages were reduced. It was also found that there is no hiding place for tax evaders with the use of ICT since all potential taxpayers are captured by the system. In addition, this study also revealed that tax administration as carried out by the Gambia revenue authority (GRA) is undertaken by technocrats with robust knowledge of ICT.

The findings of the study show that the Gambia Revenue Authority operation is computerized. With regards to independence in its operations of ICT policy, the study reveals that the Gambia Revenue Authority is not independent in its operation as it related to ICT compliance decisions. The ICT department of the GRA only implements policy directives from the board on software used for the operation of GRA in The Gambia. The ICT department doesn't have a representative at the board level. Issues of a poor database of taxpayers is no longer a problem with the current level of ICT application by The GRA and information and communication technology (ICT) has helped the Gambia Revenue Authority (GRA) management to reach the needs of a wide spectrum of taxpayers in the Gambia

#### *Policy Implications*

Based on the findings of the study, the following are some of the policy implications and recommendations:

The ICT governance structure should be established to enable top management to buy ICT initiatives at the board of directors' level. The ICT department of the Gambia Revenue Authority (GRA) should have a representative at the board level to help drive proper ICT policy, ICT governance, and ICT strategy planning for the Gambia Revenue Authority.



The ICT department should generate ICT software initiatives. The Gambia Revenue Authority ICT department should be independent in its operation as it relates to ICT compliance decisions and the ICT department of the GRA should be allowed to decide and guide on software usage suitable for the operations of tax administration in The Gambia.

There is a need to increase the number of ICT staff of the Gambia Revenue Authority. The available staff of the ICT department is overstretched, and this can be counter-productive in terms of effective service delivery.

The Gambia Revenue Authority should leverage information and communication technology in practice and theory. In the same vein, there is the need for an ICT initiative to harmonize the software of all departments of the Gambia Revenue Authority.

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