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EFFECT OF TAX LEAKAGES ON ECONOMIC DEVELOPMENT OF NIGERIA

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ABSTRACT

This study examined the effects of tax leakages on economic development of Nigeria during the period 2008-2017. Specifically, it investigated how tax evasion and avoidance influenced economic development measured by gross domestic product per capita, infant mortality and life expectancy. In pursuit of the objectives of this study, three hypotheses were formulated and tested using secondary data obtained from the Central Bank of Nigeria, Federal Inland Revenue Service, World Bank Statistical Bulletins and National Bureau of Statistics. This study is based on time series data. The Augmented Dickey Fuller was used to test the time series data for stationarity. Ordinary Least Square regression was employed in the analysis of the data. The findings of this study confirmed that tax leakage has a significant negative effect on economic development in Nigeria at 5% level of significance. On the basis of the findings, it was recommended among others that federal government should judiciously make use of tax proceeds to provide basic amenities for the citizens, such as health care, school and so on; as this would curb the rate of infant mortality and improve the rate of tax compliance among the tax payers.

Keywords: Tax Avoidance, Tax Evasion, Infant Mortality, Tax Leakage.

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Introduction

Taxes are immensely vital instrument and primary source of revenue to the government. The revenue is needed to finance critical programs (example health care and education), services (example law enforcement and public utilities) and infrastructure (example road construction and environmental protection) which are essential to the society. The main reason for government taxation is to finance government expenditure and to redistribute wealth which translates to financing development of the country (Okeke, Mbonu, & Amahalu, 2018). According to Worlu and Emeka (2012), tax revenue utilization is a basis for supporting developmental activities in less developed economies. Tax revenue is the receipt from tax structure. Revenues accruing to an economy such as Nigeria can be divided into two main categories, which are; oil revenue (including revenues from royalties, petroleum profit tax (PPT), gas tax and non-oil revenue (including trade, loan, direct and indirect taxes paid by other sectors of the economy, aids, Agriculture, et cetera).

However, tax revenue mobilization as a source of financing developmental activities in less developed economies has been a difficult issue because of various forms of resistance such as tax evasion and avoidance. These activities are sabotaging the economy and are readily presented as a reason for the underdevelopment of the country. Government collects taxes in other to provide an efficient and steadily expanding non-revenue yielding services. Tax is also the nexus between states and its citizens, and tax revenue is the lifeblood of the social contract. The very act of taxation has profoundly beneficial effect in fostering better and more accountable government (Abiahu & Amahalu, 2017). Musgrave and Musgrave (2004) also stated the economic effect of tax to include micro effect on the distribution of income and efficiency of resource use as well as macro effect on the level of capacity output, employment, prices and growth. The use of tax as an instrument of fiscal policy to achieve economic growth in most less developed countries cannot be reliable because of dwindling level of government that have influenced their economic development through revenue from tax; Canada, United State, Netherland, United Kingdom. They derive substantial revenue from company income tax, value added tax, import duties and have used same to create prosperity (Oluba, 2008).

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In Nigeria, the contribution of tax revenue has not been encouraging, thus expectation of the government are being cut short. The major indicator associated with low revenue is tax evasion and avoidance. Irrespective of tax values, tax evasion and avoidance reduce the amount of government budget every year. According to Farayola (1987), tax evasion is the fraudulent, dishonest, international distortion or concealment of facts and figures with the intention of avoiding the payment of or reducing the amount of tax otherwise payable. The worth of tax evasion worldwide exceeds US$3.1 trillion or 5.1% of global domestic product (Murphy, 2011). Nwakaji and Ewah (2010) assert that tax avoidance refers to tax payer's effort to avoid paying tax by finding a legal loophole in the tax system.

Tax evasion and avoidance have adverse effect on government revenue. Tax avoidance generates investment distortion in the form of the purchase of assets exempted from tax or under-valued for tax purpose (Klabel & Nwokah, 2009). Avoidance takes the form of investment in art collection, emigration of persons and capital. Toby (1983) observed that tax payer indulge in evasion by resorting to various practices. These practices erode moral values and build up inflationary pressure. The point can be buttressed with the fact that because of evasion of tax, individual and companies have a high take home profit. This increase the quantity of money in circulation but without a corresponding increase in the goods and services this then build up what is known as inflationary trends where large money chases few goods (Toby, 1983).

In conclusion, the more citizen lack knowledge or education about taxation in the country, the greater the desire and the opportunities for tax evasion, avoidance and non-compliance with relevant tax laws (Adegbie & Fakile, 2011). In this respect, the country will be more adversely affected because of absence of tax conscience on the part of individual and the companies and the failure of tax administrators to recognize the importance of communication and dialogue between the government and the citizen in matters relating to taxation. In light of this, this study seeks to investigate the effect of tax evasion and avoidance on economic development in Nigeria.

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Statement of the problem

Among many problems confronting tax administration in Nigeria is how to ensure voluntary compliance on the part of the taxpayer. Tax being a commodity nobody wants to buy; the tax man is hardly liked by the tax payer who perceived him as a government toll collector. The result of most researches conducted on tax evasion and avoidance on economic development are either contradictory or inconclusive, reporting positive and sometimes negative results. Ellawule (2018) found that tax evasion has significant effect on economic development of a state. Aumeerum, Jugurnath and Soondrum (2016) concluded that there is a positive impact of tax evasion on the gross domestic product per capita. Fatoki (2014) found out that tax evasion have adversely affected economic growth and development in Nigeria and that lack of good governance and unpatriotic act of tax payer is the basis for tax evasion and avoidance. Also Bismark, Bismark, Eric and Isaac (2015) revealed that tax evasion in Ghana has an adverse influence on socio-economic development.

In the view of the above submissions, there is a clear gap in knowledge which this study is set to resolve. In an attempt to fill the gap in literature, this study empirically assessed the effects of tax leakages on economic development of Nigeria the following gaps were therefore considered; variable gap: this study emphasized on economic measurement variable reflecting the gross domestic product per capita of Nigeria, infant mortality and life expectancy in Nigeria (as prior studies are yet to consider infant mortality and life expectancy); in the consideration of tax leakage (proxied by tax avoidance and evasion) previous studies utilized primary data, while this present study made use of secondary data; period gap: this study extended up to 2017 cover up to ten (10) years from 2008-2017 (which prior studies are yet to explore, to the best knowledge of the researcher). Hence, the need for this study.

The main objective of the study is to ascertain the effect of tax leakage on the economic development of Nigeria.

The specific objectives of this study are to:

1. Ascertain the effects of tax leakages on gross domestic product per capita of Nigeria economy.
2. Determine how tax leakages affect infant mortality of Nigeria economy.
3. Evaluate how tax leakages affect life expectancy of Nigeria economy.

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Review of Related Literature

2.0 Conceptual Review

2.1.1 Tax Evasion

Tax evasion is a deliberate and willful practice of not disclosing full taxable income to tax authorities so as to pay less tax. It is a contravention of tax laws whereby a taxable person neglect to pay the tax due or reduces tax liability by making fraudulent or untrue claims on the income tax form (Soyode & Kajola, 2006). Tax evasion is a situation whereby a taxpayer out rightly refuses to pay tax or tries illegally to minimize his tax liability. ICAN (2004) defined it as fraud and deceit by deliberately refusing to declare all source of income when filling returns or understate income in tax returns. According to Gourama, Mansor, and Pantanmee (2015) tax evasion can either be full or partial. It is full when a citizen who qualifies to pay tax refuses to get registered for the purpose of paying tax while it is partial when tax payer ,manipulate his income in order to reduce tax burden.

Furthermore, Nwachukwu (2006) stated that tax evasion is the general term for effort by individual, firms, trust and all other entities to evade taxes by illegal means. In his views tax evasion usually entails tax payer deliberately misrepresenting or concealing the true state of their affairs to the tax authorities to reduce tax liability. It also include in particular dishonest tax reporting such as declaring less income, profits or gains than actually earned or overstating deductions. Tax evasion apart from being a moral wrong also amount to a breach of tax laws and it is evidence in situations where tax liability is fraudulently reduced or false return claims are filled on the revenue tax form (Farayola, 1987, Ayua 1999, Sayode & Kajola, 2006). Somorin (2010) is his paper outlined the various forms of tax evasion which Nigeria has identified and provided sanction against:

i. Making an incorrect return by omitting or underwriting an income.
ii. Failure to furnish a return, statement or information to keep the required records.
iii. Outright refusal or neglect to pay tax.
iv. Omission to state income received in or brought into Nigeria from sources outside Nigeria.
v. False claim of contribution to pension scheme
vi. Omission to state income receipts from landed properties.

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vii. Reduction of quantum of tax liability through fraudulent tax returns.

viii. Under declaration or dishonest declaration of income earning or asset.

2.1.2 Tax Avoidance

This literally means reducing or escaping ones tax liability. The tax payer seeks to take full advantage of all exemptions, deductions, concession, allowances and other tax relief or benefit permitted by law (Ihuoma, 2013). Anyafa (2016) stated that tax avoidance is an attempt to escape the liability by circumventing the law not by breaking it; he refers to the tax payer's effort to avoid paying tax by finding a legal loophole in the tax system, the general theory of tax avoidance was propounded by Stlglitz, (2014). In his theory, he stated that in a perfect capital market, the principle tax avoidance are so powerful that they can enable the tax payer to eliminate all taxation on capital income and possibly all taxation on wage income as well. Tax avoidance is a legal activity aimed at achieving the savings by reducing the taxable income. Tax can be achieved by converting taxable income into nontaxable income at a lower bracket rate for instance owners of companies who knows that tax are charged on the profit of companies may declare no profit claiming that they made no profit. Also tax could be avoided in the case of estate tax especially where such permits gifts by denoting to charitable organization, educational institutions, research and religious organization.

The various forms of tax avoidance include;

i. The fragmentation of enterprise to avoid higher progressive rate of the incomes.
ii. An increase in the number of forms under the corporate form in order to reduce tax liability.
iii. Fleeing from tax jurisdiction or emigration.
iv. The tax payer may engage in non-taxable, non-marketable production. Example painting house, et cetra.
v. The tax payer may perform service for non-traceable cash payment or even better transition.
vi. The tax payer can purchase outside service of lawyer, accounting specialist or tax return preparation firms, this class of avoidance expenditure comprises naira outlays whose payoff is legal tax saving (Anyanwu, 2011).

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2.1.3 Tax Leakages

Leakages is described as capital or income which exist an economy or system rather than remaining within it. It refers to an outflow from a circular flow of income model. It occurs when income is removed by taxes, savings and income. Tax leakages refer to losses of revenue through the multitude of loopholes that riddle the financial system. Tax leakages also known as revenue leakages have been a universal phenomenon, gnawing up the profit margin of services and transaction based industries (Hariharan, 2009). The factor responsible for the practices of tax leakages in Nigeria as well as other developing economies are quite enormous compared with developed economies. These could be associated with development process which most developed countries have been able to overcome overtime. According to Kiabel and Nwokah (2009), corruption is the most alarming factor that promotes practices of tax leakages in Nigeria. Other factors responsible for tax leakages according to Onyewuchi and Njemanze (2016) include mismanagement of tax fund, illiteracy level of tax payers, low standard of living et cetra.

2.1.4 Economic development

Economic development is the development of economic wealth of countries or region for the wellbeing of its inhabitants. It can be defined from policy perspective as the vices that seek to improve the economic wellbeing and quality of life for a community by creating jobs and supporting or growing income and the tax base. According to Okeke, Mbonu, and Amahalu, (2018), economic development is the development of economic wealth of the countries or region for the wellbeing of its inhabitants. They emphasized that it is a process by which a nation I proves the economic, political and social wellbeing of its people. Economic development encompasses progress in providing livelihood on a sustainable basis, access to education and basic health care for the majority of the population (Belshaw & Livingstone, 2002). Economic development could be revised simply as implying increased output, greater efficiency in output generation and changes in the technical and institutional arrangement by which it is produced and distributed. According to Olajide (2004) economic development is the process whereby the real per capita income increases over a long period of time.

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The meaning of economic development becomes clearer with the understanding of the term economic growth. By economic growth, economist generally, means the increases over time in a country's real output per capita. Rapid economic growth maintained over a number of years can transform a poor nation into a rich one as has been the experience of Hong Kong, South Korea and other Asian countries (Bade & Parkin, 2002). In the view of Maliuzia and Feser (2000) growth and development is complementary because one makes the other possible. They are also alternative process that occurs sequentially. Dudley seer (1982 cited in Olajide 2004) sees development from the standpoint of what has been happening to poverty, unemployment and inequality overtime. Where there is reduction in the three variables in an economy from high level, then the country could be said to be experiencing development (Olajide, 2004). The consideration of economic development emphasized the source of growth and the overall growth and development lead to a greater range of economic choice.

Also economic development could be said to generally seen as the sustained concerted actions of policy maker and communities that promote the standard of living and economic health of a specific area. It could be referred to as the quantitative and qualitative changes in the economy. The actions of economic development can involve development of human capita, critical infrastructure, regional competitiveness, environmental sustainability, social inclusion, health safety, literacy and other initiatives.

2.1.5 Gross Domestic Product per Capita

Gross domestic product is a monetary measure of the market value of all final goods and service produced in a period (quarterly or yearly) of time. Nominal gross domestic product estimate are commonly used to determine the economic performance of a whole country or region and to make international comparison. The OECD defines gross domestic product as an aggregate measure of production equal to the sum of gross value added of all resident and institutional units engaged in production (plus any taxes, minus and subsidies on product not included in the value of their output) OECD, 2014. An international monetary fund publication states that gross domestic measures the monetary value of all final goods and services that are

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brought by final user produced in a country in a given period of time (Callen, 2016). Total gross domestic product can also be broken down into the contribution of each industry or sector of the economy (Dawson, 2006). Gross domestic product is considered as the world's most powerful statistical indicator of national development and progress.

2.1.6 Life expectancy

Life expectancy is the measure of the length of life expected to be lived by an individual at birth. Improvement of life expectancy to at least 70 years by 2020 is one of Nigerians health policy target. Life expectancy is frequently utilized and analyzed in the composition of demographic data for countries of the world for attainment of mortality experience and for reliance international comparisons. (Julien, 2009; Zhang & Lee. 2011; Diamond, Gruber & Jousten, 2002) noted that life expectancy has important implication of individual and aggregate human behavior. They noted that it has crucial effects on fertility behavior, economic growth, human capital investment, intergeneration transfers and incentives for pension benefits. Gridstein and Kagenovich (2004) said that social planner's perspective that life expectancy has implication for public finance.

Life expectancy indicates the number of years a person can live before he dies subject to mortality risk personality. Life expectancy is a statistical measure of the average time an organization is expected to live based on the year of its birth, its current age and other demographic factors including gender. The most commonly used measure of life expectancy is at birth (LEB), which can be defined in two ways. Cohort life expectancy at birth is the mean length of life of an actual birth cohort and can be computed only for cohorts born many decades ago, so that all their members have died. Period life expectancy at birth is the mean length of life of a hypothetical cohort assumed to be exposed from birth through death to the mortality rates observed at a given year (Shoyok, 1973). Life expectancy increases with age as the individual survives the higher mortality rate associated with childhood. It differs from maximum life span. It is an average for all people in the population including those who die shortly after birth, those who die in early adulthood (example childbirth, war) and those who live unimpeded until old age.

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2.1.7 Infant Mortality

Worldwide, more than 10 million children under the age of 5years are reported to die each year of their death, 90% occur in developing owing to conditions that could be prevented with access to simple and affordable intervention (Kabagenga & Ruttaremwa, 2013; Miller & Goldman, 2011). Of the 10 infant death annually, four (4) million death occur within the first month of life with approximately 40% constituting under five (5) years mortality and more than 50% infant mortality worldwide (Mekonnen, Tensou, Telake, Degefie, & Bekele, 2013). Many of these deaths are related to lack of adequate medical and nursing intervention at the time of birth. Previous studies also identified socio economic, material, cultural, household, environmental, biological and health service utilization factors are determinants of infant mortality (Agha, 2000, Casey, Mcltntire & Rutslein, 1984).

Infant mortality refers to deaths of young children typically less than one year. It is measured by the infant mortality rate (IMR) which is the number of deaths of children under one year of age 1000 live births. The under-five mortality rate is an important statistic considering the infant mortality rate focuses only on children under one year of age (UNICEF DATA, 2017). Infant mortality rate was in indicator used to monitor progress towards the fourth goal of the millennium development goal of the United Nations for the year 2015. It is a new target in the sustainable development goals for number three ("ensure healthy lives and promote wellbeing for all at all ages") UN-DESA, 2016.

2.1.8 Tax Leakage and Gross Domestic Product per Capita

Tax is an important fiscal policy for the states and its economy. The developed countries aim of the fiscal policy is to achieve the economic stability. However, the developing countries use tax to achieve the economic development. The government uses taxes to raise economic and productive efficiency of the state by monitoring the resources and to exploit resources (Hijazi, 2001).

Several studies have been undertaken to assess tax performance across different countries. These studies use tax share of gross domestic product or tax ratio as the dependent variable with a combination of explanatory variable such as real per capita

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gross domestic product, economic structure, foreign and share of gross domestic product as potential determinants of revenue performance. According to Tanzi and Davoodi (2000) per capita income exerts a positive impact on tax revenue. Also Gupta (2007), per capita GDP has a significant contribution on tax to GDP ratio across countries. Increase in per capita is a desirable macroeconomic goal which aims at raising the standard of living of the society. Increase in GDP per capita income enhances the capacity of inhabitants of a country to pay their tax liability. This is because increase in income of individual contributes much to tax revenue and the demand for public goods and services will improve. This entails that when there is decrease in real GDP per capita, people may tend not to report their income thereby causing tax evasion and avoidance.

2.1.9 Tax Leakage and Infant Mortality

Developing countries have in the post war era faced a decline in premature death. This decline in mortality has actually been welfare enhancing although it has affected the pattern of population growth. Average mortality rate in Nigeria have been falling significantly over the past century. There has been substantial reduction in the likelihood of death for all ages, with significant improvements in infant mortality. The major cause of infant cause of mortality rate in the first half of the last century was improvement in living condition, while lower death rates over the past 40 years has been attributed to advance in the medical research (George & Alan, 2008).

Health care refers to the way a society uses to cure and care for ill people as well as preventing diseases and rehabilitating people. One of the key functions of health caser system is provision of services (WHO, 2000). Limited access to such contributes reduced population health (Largarde & Palm, 2009). Access to health care depends on the availability of services (including supply of services like health worker density), geographical proximity or physical accessibility of services when needed, relevant and effected health care services. The major way of providing these are through revenue collect, pooling of resources and purchasing of intervention (WHO, 2010). Collection of revenue is organized through taxation (Tax financed healthcare) or social health insurance system with payroll contribution. However, tax financed

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health system are difficult to promote in low- income countries because of limited ability to collect revenue (Olsen, 2009; Mills & Ranson, 2006).

2.1.10 Tax Leakage and Life Expectancy

Improving health around the world is an important social objective which has obvious direct payoff in term of longer and better lives for millions (Acemoglu, Simion, & James, 2000). There is a growing consensus that improving health can have equally large indirect payoff through accelerating economic growth (Alilo, Bygjerg, & Joel, 2004). Better nutrition, higher quality education, reduced violence and better innovation among other improvement increase the wellbeing and reduce the risk of deaths at early age.

Health of the population is under the impact of both the type of health system and their resource. The relationship between resource and their outcomes is important for assessing if a country has a performing health system. A country has a health system with a better health performance than another country if for the same level of resources, it generates better health outcome or if it generates same outcome with fewer resources (Elola, Daponte, & Liera, 1995). Health system is financed through taxes, in the case of health care owned by the state or through income related social contribution (Elola et al 1995, Poca & Soukizias, 2010). The payment and collection of taxes seems to be the problem in most developing countries as people try every possible way of evading and avoiding taxes.

2.2 Theoretical Framework

2.2.1 Benefit Received Theory

This assumes an exchange or contractual relationship between the state and tax payer. Certain goods and services are provided by the state and the cost of such goods and services are contributed in the portion of the received benefits, this the benefit received present the basis for distributing the tax burden in specific manner. Chigbu, Akujuobi and Appah (2012) see the cost of service theory as very similar to the benefit received. The theory emphasizes on semi commercial relationship between the state and the citizens to a greater extent. The implication according to Chigbu et al

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(2012) was that citizens are not entitled to any benefit from the state and if they do receive any, they must pay the cost thereof.

2.3 Review of Empirical Literature

Ellawule (2018) studied the effect of tax evasion on economic development of Yobe state, Nigeria. Using secondary data and chi-square, for data analysis used statistical package for social science (SPSS) version 20 concluded that tax evasion has a significant effect on the economic development of the state. The study recommended that the state government should improve on the governance and to reduce insurgency in the state.

Folayani and Adeniyi (2018) ascertained the on effect of tax evasion on government revenue generation in Oyo state. With a structured questionnaire and a sample of one hundred and sixty five (165) respondent selected randomly across the state and with secondary data from national Bureau of statistic (NBS), office of budget and economic planning and internal revenue office data from 2011-2016. Data collected were analyzed using descriptive and inferential statistic tool with the aid of statistical package for social science (SPSS) window 23. Their result reviewed that tax evasion has adverse effect on government revenue generation in Oyo state which result in loss of revenue. They recommended that government should embark on massive public enlightenment campaign and adequate utilization of tax revenue on public goods to discourage tax evasion and reduction in tax rate.

Design and Methodology

This study focused on ascertaining the effects of Tax Leakages on Economic Development with emphasis on Nigeria. The research design employed in this study is the *ex-post facto* research design. An *Ex-post Facto* research determines the cause-effect relationship among variables. *Ex-post Facto* seeks to find out the factors that are associated with certain occurrence, conditions, events or behaviors by analyzing past events or already existing data for possible casual factors (Kothari & Garg, 2014).

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Sources of Data

The nature of data for this study was essentially secondary data. The scope of this study spanned from 2008-2017 to ensure robustness of the empirical result. Secondary and time series data were collected from publications of Central Bank of Nigeria (CBN), Federal Inland Revenue Service (FIRS), World Bank Statistical Bulletin and National Bureau of Statistics (NBS). The data sourced were in respect to gross domestic product per capita, infant mortality, life expectancy, tax evasion and avoidance.

Table 1: Description of Variables

Variables	Nature	Notation	Measurement
Tax Leakage	Independent	TEA	This was measured using the natural log between the difference of total budgeted tax revenue and actual tax revenue.
Gross domestic product per capita	Dependent	GDPC	Collected from Central Bank of Nigeria Statistical Bulletin, World Bank Statistical Bulletin and National Bureau of Statistics (various issues).
Infant Mortality	Dependent	IM	Collected from Central Bank of Nigeria Statistical Bulletin, World Bank Statistical Bulletin and National Bureau of Statistics (various issues).
Life Expectancy	Dependent	LEX	Collected from Central Bank of Nigeria Statistical Bulletin, World Bank Statistical Bulletin and National Bureau of Statistics (various issues).

Model Specification

This study specifies a functional relationship between economic development and tax leakage.

Generally the model is specified as:

$Y = \beta o + \beta X_1 + \mu$

Where:

Y = economic development (Dependent Variable)
X = tax leakage (Explanatory/Independent Variable)
β_0 = Constant term (Intercept)
β = Coefficient of tax leakage
μ = Error term (Stochastic Term)

Explicitly, the equation can be defined as:

Economic development = f (tax leakage) + μ

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Representing the equations with the variables of the construct, hence the equations below are formulated:

$GDPC_t = \beta_0 + \beta_1 TEA_t + \mu$ - **Ho_1**
$IM_t = \beta_0 + \beta_1 TEA_t + \mu$ - **Ho_2**
$LEX_t = \beta_0 + \beta_1 TEA_t + \mu$ - **Ho_3**

Where:
$GDPC_t$ = gross domestic product per capita at period t
IM_t = infant mortality at period t
LEX_t = life expectancy at period t
TEA_t = tax evasion and avoidance at period t

Decision Rule
Accept the alternative hypothesis, if the P-value of the test is less than 0.05. Otherwise reject.

Data Analysis

Test of Reliability

The researcher tested for stationarity unit root test in order to fulfill the economic theory which states that variables that must enter a regression model must undergo a stationarity test in order to achieve a realistic (non-spurious) result at 1%, 5% or 10% level of significance. The result for the test is shown below in table 2. The data used in this study had unit root problem, consequently, the data were detrended using Augmented Dickey-Fuller Test. The result of the differenced data in order to solve the unit root problem is shown in table 2:

Table 2: Differenced Result

Variables	Test Statistic	Test Critical Values			Status	Prob.
	ADF	1% level	5% level	10% level	Stationary	
GDPC	-9.423801	-3.628893	-3.013674	-2.303674	1(1)	0.0000
IM	-7.839364	-3.628893	-3.013674	-2.303674	1(1)	0.0001
LEX	-5.844783	-3.628893	-3.013674	-2.303674	1(1)	0.0007
TEA	-4.367493	-3.628893	-3.013674	-2.303674	1(1)	0.0000

Source: Researcher's computation using E-view 9.0, 2018

Interpretation

In order to ascertain the stationary state of the time series variables, this study employed the unit root test. This is imperative since we are ignorant of the data generating process. The Augmented Dickey-Fuller test was employed and the results are shown in table 2. The results of the unit root test using Augmented Dickey-Fuller at 1 percent level shows that all the time series variables are non-stationary, but became stationary only after first differencing; hence the variables have an order of integration of one. This conclusion is based on comparison of the augmented Dickey fuller statistics and the critical values provided by MacKinon (1996). Hence, this permit us to carry out the regression test.

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Table 3: Correlation Matrix

	GDPC	IM	LEX	TEA
GDPC	1.000	-0.610	0.656	-0.629
IM	-0.610	1.000	-0.683	-0.626
LEX	0.656	-0.683	1.000	-0.653
TEA	-0.629	-0.626	-0.653	1.000

Source: Researcher's computation using E-view 9.0, 2018

The result of the Pearson correlation matrix analysis indicates a negative relationship between TEA and GDPC (-0.629), IM (-0.626), LEX (-0.653).

Test of Hypotheses

Hypothesis I

Ho_1: Tax leakage has no significant effect on gross domestic product per capita of Nigeria economy.

Table 4: OLS Regression Analysis showing the relationship between DTEA and DGDPC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.013041	0.001897	-6.874451	0.0002
DTEA	-0.017544	0.011903	-2.643911	0.0319

R-squared	0.436842	Mean dependent var	0.014444
Adjusted R-squared	0.327820	S.D. dependent var	0.005270
S.E. of regression	0.004922	Akaike info criterion	-7.597026
Sum squared resid	0.000170	Schwarz criterion	-7.553198
Log likelihood	36.18662	Hannan-Quinn criter.	-7.691606
F-statistic	6.172414	Durbin-Watson stat	1.504356
Prob(F-statistic)	0.031899		

Source: Researcher's computation using E-view 9.0, 2018

Interpretation of Regression Coefficient Result

Table 4 depicts that there is a negative relationship between GDPC and TEA (β_1=-0.017544). The slope coefficients show that that the probability value: P(x_1=-0.0319<0.05) is less than the critical P-value. This implies that TEA has a significant negative relationship with GDPC at 5% significant level. Results in table 4 indicate that the R-squared for the model is 0.44, meaning that the regression model used for this study is a good predictor. The independent variable explained 44% of the variation in GDPC. Only 56% of variation in GDPC is not explained by the regression model. The Durbin-Watson value of 1.504356 indicates the absence of serial correlation in the model. From the test of coefficients result in table 4, the probability value of the F-statistics = 0.031899 implies that the regression model is significant in predicting the relationship between the independent variable and the dependent

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variable. The significance between the variables is less than α=0.05. This result indicates that the overall regression model is statistically significant and is useful for prediction purposes at 5% significance level.

Decision

Since the p-value (0.031899) of the test is less than α=0.05, going by the rule of thumb, H_1 is accepted and Ho rejected. Thus, TEA has a significant negative effect on GDPC at 5% level of significance.

Hypothesis II

Ho_2: Tax leakage has no significant effect on infant mortality of Nigeria economy.

Table 5: OLS Regression Analysis showing the relationship between DTEA and DIM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001591	0.008388	-0.189633	0.8550
DTEA	-0.146784	0.052631	-2.788913	0.0270

R-squared	0.526324	Mean dependent var	-0.013333
Adjusted R-squared	0.458656	S.D. dependent var	0.029580
S.E. of regression	0.021764	Akaike info criterion	-4.623980
Sum squared resid	0.003316	Schwarz criterion	-4.580153
Log likelihood	22.80791	Hannan-Quinn criter.	-4.718560
F-statistic	7.778038	Durbin-Watson stat	1.008146
Prob(F-statistic)	0.026950		

Source: Researcher's computation using E-view 9.0, 2018

Interpretation of Regression Coefficient Result

Table 5 depicts that there is a negative relationship between IM and TEA (β_1=-0.146784). The slope coefficients show that that the probability value: P(x_1=-0.0270<0.05) is less than the critical P-value. This implies that TEA has a significant negative relationship with DIM at 5% significant level. Results in table 5 indicate that the R-squared for the model is 0.53, meaning that the regression model used for this study is a good predictor. The independent variable explained 53% of the variation in IM. Only 47% of variation in IM is not explained by the regression model. The Durbin-Watson value of 1.008146 indicates the absence of serial correlation in the model. From the test of coefficients result in table 5, the probability value of the F-statistics = 0.026950 implies that the regression model is significant in predicting the relationship between the independent variable and the dependent variable. The significance between the variables is less than α=0.05. This result indicates that the overall

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regression model is statistically significant and is useful for prediction purposes at 5% significance level.

Decision

Since the p-value (0.026950) of the test is less than α=0.05, going by the rule of thumb, H_1 is accepted and Ho rejected. Thus, TEA has a significant negative effect on IM at 5% level of significance.

Hypothesis III

Ho_3: Tax leakage has no significant effect on life expectancy of Nigeria economy**.**

Table 6: OLS Regression Analysis showing the relationship between DTEA and DLEX

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001696	0.001650	-7.027574	0.0000
DTEA	-0.020468	0.010356	-5.976514	0.0000

R-squared	0.658187	Mean dependent var	0.003333
Adjusted R-squared	0.566500	S.D. dependent var	0.005000
S.E. of regression	0.004282	Akaike info criterion	-7.875555
Sum squared resid	0.000128	Schwarz criterion	-7.831727
Log likelihood	37.44000	Hannan-Quinn criter.	-7.970135
F-statistic	13.06606	Durbin-Watson stat	1.471133
Prob(F-statistic)	0.000000		

Source: Researcher's computation using E-view 9.0, 2018

Interpretation of Regression Coefficient Result

Table 6 depicts that there is a negative relationship between LEX and TEA (β_1=-0. 020468). The slope coefficients show that that the probability value: P(x_1=-0.000<0.05) is less than the critical P-value. This implies that TEA has a significant negative relationship with LEX at 5% significant level. Results in table 6 indicate that the R-squared for the model is 0.66, meaning that the regression model used for this study is a good predictor. The independent variable explained 66% of the variation in LEX. Only 34% of variation in LEX is not explained by the regression model. The Durbin-Watson value of 1.471133 indicates the absence of serial correlation in the model. From the test of coefficients result in table 6, the probability value of the F-statistics = 0.000000 implies that the regression model is significant in predicting the relationship between the independent variable and the dependent variable. The significance between the variables is less than α=0.05. This result indicates that the overall regression model is statistically significant and is useful for prediction purposes at 5% significance level.

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Decision

Since the p-value (0.026950) of the test is less than α=0.05, going by the rule of thumb, H_1 is accepted and Ho rejected. Thus, TEA has a significant negative effect on LEX at 5% level of significance.

Summary of Findings

In the course of this study, the following specific findings were made:

1. Tax leakage has a significant negative effect on gross domestic product per capita at 5% level of significance.
2. Tax leakage has a significant negative effect on infant mortality at 5% level of significance.
3. Tax leakage has a significant negative effect on life expectancy in Nigeria at 5% level of significance.

Conclusion and Recommendations

In this study, effort was made to determine the effect of tax leakage on economic development in Nigeria by adopting certain economic development measures (GDP per Capita, infant mortality and life expectancy) over a period of 10 years spanning from 2008-2017. The data set were first subjected to unit root test, using Augmented Dickey Fuller Test value, none of the data were stationary but at first difference all the data set become stationary that is I (1) series. On the overall, the study discovered that tax leakage (proxied by tax evasion and avoidance) has a significant negative effect on economic development indicators (GDP per Capita, infant mortality and life expectancy) in Nigeria at 5% level of significance. The study makes the following recommendations:

1. Nigeria government should improve on the tax law implementation, improve security situation of the country to enable the people farm and feed themselves, promote good governance in order to better the GDP per Capita of the country.
2. Government at all levels should judiciously make use of tax proceeds to provide basic amenities for the citizens, such as health care, school and so on; as this would curb the rate of infant mortality and improve the rate of tax compliance among the tax payers.
3. In order to reverse the negative effects of tax leakages on life expectancy, government should provide employment opportunities to all by the judicious use of tax proceeds, which will promote high rate of tax compliance, thereby reducing to a tolerable limit, the twin problems of tax evasion and avoidance

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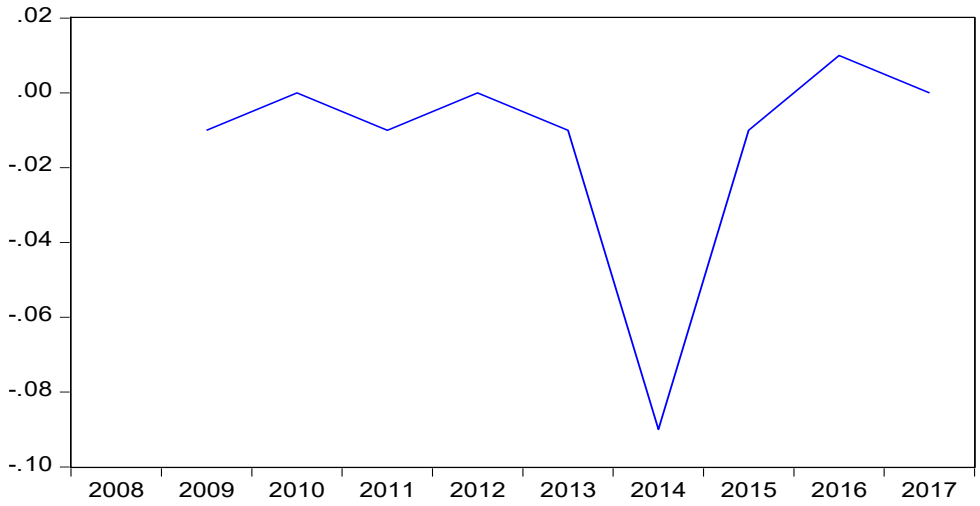
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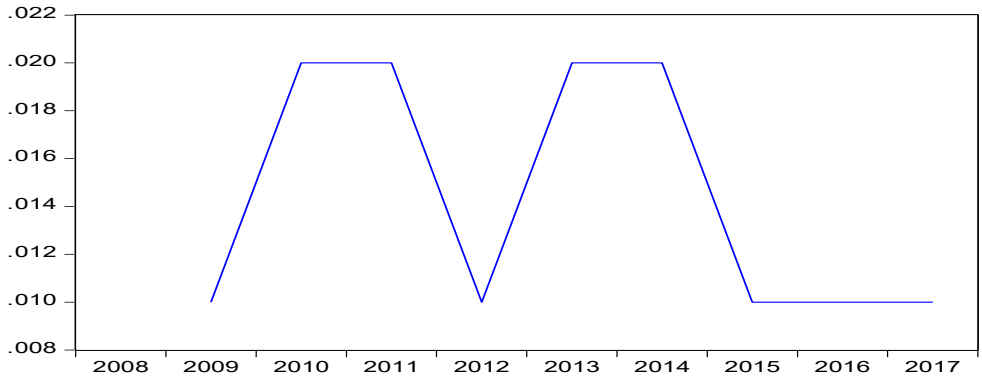
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Appendix: Graphical Unit Root Test

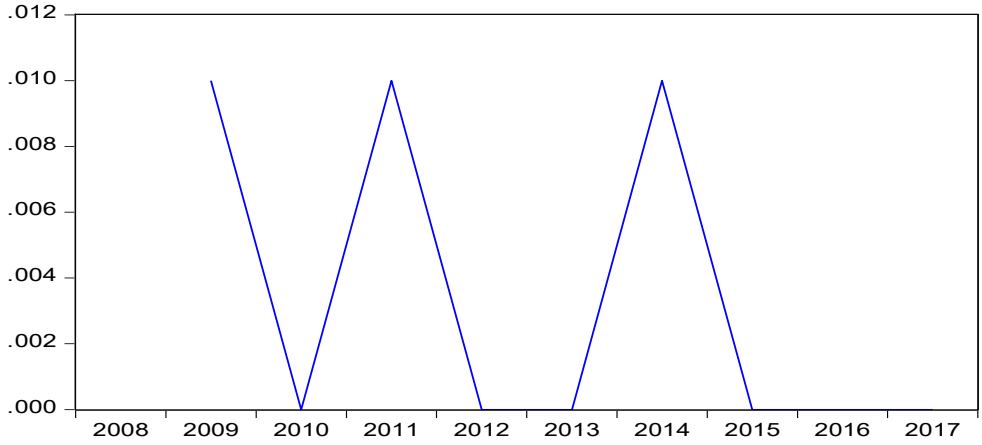
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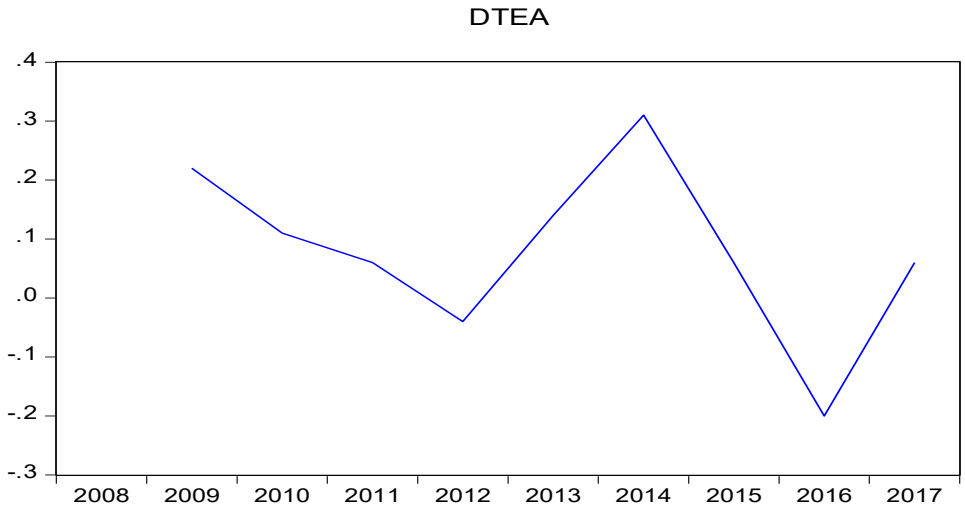
DGDPC



DLEX



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