Tax Revenue and Human Development Index of West African Commonwealth Countries

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Abstract
This study investigates the impact of tax revenue on human development index of West African Commonwealth countries; Ghana, Nigeria, Sierra Leone and the Gambia. Secondary data on direct and indirect tax revenues, and human development index were electronically obtained from the websites of International Center for Tax and Development and World Bank. Ordinary least square regression analysis was applied and results show that while direct tax revenue has significant and positive effect, indirect tax revenue has negative and significant influence on human development index of West African Commonwealth countries. The paper concludes that tax revenue provides a great opportunity for improving the human development index of West African Commonwealth countries. The study therefore calls for government administrations of these countries to ensure that indirect tax revenue are adequately harnessed to improve quality of human lives by making effective policies and upholding accountability of tax revenues collected.

Introduction

Revenue generation is critical to the success of any government administration. It is also a necessary factor to the success of all economies of the world irrespective of their developmental stages. One of the various means through which government administrations of different countries have raised revenues at various periods in the human history is taxation. It is an obvious knowledge among tax accounting scholars that taxation is as old as government administration and its earliest forms are seen in the payments of tributes by conquered kingdoms and subjects to the ruling empire as recorded in the Bible (Matthew 17:27); and other historic documents. Carlson (2004) submitted that evidence of the earliest practices of taxation dates back to six thousand years B.C, suggesting the ever relevant and useful nature of taxation to the success of governance and growth of the economies of nations at any time.

Tax in the contemporary sense, can be considered as a compulsory levy imposed on people by the government of their land of residence or income generation; through which the government raises revenue and controls the economic and social welfare of its people. The above definition of tax therefore entails that tax revenues of any government includes all incomes of the government generated through the imposition and collection of taxes within its economy. Although various government administrations in the world have peculiar means of sourcing revenue due to the varying degrees of opportunities available to them, generation of government revenues through taxation has remained handy and relevant over the years. Also, various governments have sought to exercise control over the economic and social activities of its people through tax policies and laws instituted and enforced in the land.

Ortiz-Ospina and Roser (2019) opined that the methods of governments' revenues generation and spending have a substantial impact on the economic and social development of nations. The above position of the tax scholars underscores the critical relevance of tax revenue to the changes observable in any nation's economic indices since taxation is one of the chief sources of government revenues generation in the world. A nation's economics can be regarded as its condition or position with respect to material wealth which can be measured in numbers and also evidenced in the living standards of its people. Afful (2008) described economy as consisting of economic systems in a given country which includes the production, distribution or trade and consumption of limited goods and services in that country. Economic indices therefore underscore all indicators of economic activity for any group, region or nation. According to Boelhouwer (2010), economic indices of nations form the evidence that back up national progress or otherwise as they reduce the size of national data to numbers without dropping the information carried by such variables thus promoting communications and accountability. So the pursuit of economic welfare of any country which forms the primary goal of any well-meaning government administration in the world can be deciphered by its attainment of favourable level of economic condition traceable to such nation's economic indices.

The possibility of tax revenues contributing massively to the wealth of nations is undoubtedly an obvious certainty (Onyekachi, Okafor & Ibiam; 2019) because all the sovereign nations of the world have a tax collection system often administered by a designated government establishment created for that particular purpose. However, the transmission of this wealth to account for the welfare of the people in developing nations, in terms of material wealth evident in their economic indices; remains a question of research interest and of which various attempts have been made by scholars. Albeit the results of the research efforts on this topic tend to vary in the same clime and in varying degrees and this is the focal point of our study. The tax systems of a country backed by their policies often accounts for the level of revenue which can be generated from its tax administrative efforts.

The administrative systems of Ghana, Nigeria, Sierra Leone and the Gambia are similar on various grounds which include legal, social and economic aspects. And this is due to the fact that these four countries were colonized by the Britain and their affairs overseen by the government of United Kingdom for nearly a century thus they are regarded as members of the Commonwealth of Nations. Though these countries differ in their political structures, but the foundations of their economic structure which includes sourcing of government revenue and responsible spending were laid by various English leaders who administered the affairs of these countries with the approval of the Queen of England. The legal structures including tax laws in West African Commonwealth countries, some of which are still in use were introduced by these English administrators and the changes made to them have mostly been in terms of reflecting current realities rather than changing them entirely. In addition the early political actors in the administrative systems of these countries were indoctrinated under the tutelage of the English political experts and educationist thus underscoring the fact that West African Commonwealth countries as former 'apprentices' of the United Kingdom should have comparable ideology in terms of sourcing government revenues from various means which obviously includes taxation.

The historical account of taxation in the history of man tends to portray tax as an agent of economic development by all standards. It is important to appreciate that economic development sufficiently captured by the human development index is a broader perspective of positive tendency in the economic power of any country than gross domestic product because it cuts across certain important indicators of human progress which includes life expectancy, rate of poverty and education to measure the extent of development which has been witnessed by a particular group of people over the years. Bhartia (2009) and Ola (2007); in addition to many other scholars believe that taxation's major role in the hands of the administering government is to enable her finance its project which is obviously targeted towards the improvement of the citizens welfare and ultimately lead to economic development of the country. This study intends to explore the assumption that tax revenues should, in the long run, lead to greater freedom for the people since economic development underscores consistent and gradual freedom from poverty, poor governance, lack of economic opportunities, illiteracy and lack of health. So this study is an attempt to ascertain the influence of tax revenues of West African Commonwealth countries on their human development index.

Objectives of the Study

This study has a broad objective of assessing the influence of tax revenues on human development index of West African Commonwealth nations. To achieve the broad objective, the specific objectives are to:

i. research on the influence of direct tax revenue on human development indices of West African Commonwealth nations
ii. explore the possible association between indirect tax revenue and human development indices of West African Commonwealth nations

Hypotheses

To pursue the specific objectives of this study, the following hypotheses were formulated and presented in their null forms:

i. H01: Direct tax revenue has no significant effect human development indices of West African Commonwealth Nations
ii. H02: Indirect tax revenue has no significant effect on human development indices of West African Commonwealth Nations

Conceptual Frameworks

The meaning of taxation

Tax is a compulsory levy paid to the government by the citizens which attracts no direct compensation from the government but is paid rather to adhere to the relevant laws of the land. Ihendinihu, Alpheaus and Onyekachi (2018) defined tax as a compulsory contribution levied on 'persons', property, income and transactions in the support of government. Tax can also be considered as a compulsory and unrequited payment made to the general government (Nobes; 1998).

Taxation as obtained from the word 'tax' is the process of administering the tax laws with the objective of actualizing the main aims of the administering government with respect to taxes. Aguolu (2009) defined taxation as the compulsory levy by government through its various agencies on the income, capital or consumption of its subjects. He identified such taxable incomes to include personal incomes such as salaries, business profits, interests, dividends, commissions, royalties, rents, etc; capital gains, petroleum profits and value added to products and services.

Taxation is considered a medium through which government administrations all over the world execute their expenditures achieved through imposition of various levies on the citizens and corporate incomes and consumptions. Asides the use of taxation to finance government budgets, taxation is also a means of controlling the social and economic anomalies within the economy. This is done when governments apply tax imposition to encourage certain economic decisions such as low tax rate or tax holiday granted to motivate investors to commit funds towards a particular sector in order to grow or expand such sector. Taxation can also be used to discourage importation of foreign goods thereby shielding substitute home products from stiff competitions. All these will lead to better economic opportunities for the taxing economy. Taxation is also applicable to the achievement of desirable social stance since governments can impose high taxation on some harmful substances to discourage their use or consumption by its citizens.

Tax administration in developing economies

Dom and Miller (2018) opine that tax administrations of colonized states did not follow any specific strategy aimed at bringing about lasting development while putting up an argument which suggests that taxation strategies applied in the colonies especially within the sub-Saharan Africa were merely intended to exploit the locals from the perceived surplus at the time coupled with the pressure of meeting up with social expectations based on what is currently obtained in the colonists of their counterparts. So the above view of the authors may suggest that the foundations of the tax systems obtained in the West African commonwealth countries which form our focal point in this study may not have optimized economic development of the nations then. If this is accurate, it is also expected that efforts will be made by these former colonists to institute and implement tax policies and reforms that will best promote their interests as a people.

But tax administrations of developing countries are generally under-optimized for economic growth especially African countries that tend to depend unduly on non-tax incomes for raising government revenues. These developing countries that rely on crude oil like Nigeria and Angola are recently struggling and making attempts to augment their total government revenues due to decline in crude oil prices (Egbunike, Emudainohwo & Gunardi; 2018).

West African commonwealth countries, even though they are all developing countries had the foundations of their tax systems laid by one colonialist who applied taxation as a primary source of government revenue. Even though some of these countries have mineral resources which attracted the British powers in the first instance, Nigeria particularly was yet to start mining oil in commercial quantities at the time of colonization, so it is evident that Britain had always hold on to taxation even with other sources of income. It is not out of place to assume that these West African Commonwealth countries will tap into the opportunities embedded in taxation and improve on their tax systems to diversify their incomes but this may not be the case. Mansfield (1988) highlights the huge difference between tax laws and actual taxation in developing countries. Developing countries have the tendency of making admirable tax policies which its implementation should lead the economy to emancipation but the tax practice that follows these policies bear no resemblance to such tax laws and policies. This is probably the greatest challenge of taxation in developing countries.

Bird (2018) recognizes low rate of compliance to tax as one of prominent inhibiting factors to successful tax administration in developing countries. He opines that economic approach to implementation of tax laws often fail to take key administrative issues as tax evasion and avoidance into consideration; and these factors which ought to have influenced the way the tax man assesses, collects and enforces the tax laws reduce notable policies to ineffective or suboptimal strategies. Some measures outlined to improve tax administration in developing countries are acknowledgment of the compliance level of the particular country in question, making uncomplicated tax laws and policies, development of good tax reform strategy which include firm control of the withholding tax agents, recognition and treating the taxpayers as clients, introduction of information technology into the tax system and dealing decisively with non-compliance to taxation.

However, while assessing the role of taxation in improving the wealth of developing countries, Bird and Milka (1992) observed that most policy makers tend to overlook the restoration role that taxation play in the macroeconomic balance and improvement of equity. It therefore holds that tax policies in developing countries may tend towards maximizing government revenue especially as other sources of revenues to the governments are declining just like the case of Nigeria. And this may lead to ignoring other macroeconomic roles of taxation thereby distorting their balances; a case that is also detrimental to development.

Ligomeka (2019) believes that developing African economies are popularly associated with low income taxes because the per capita incomes of the masses are generally poor. Low tax to GDP ratios of developing countries can also be traced to poor income tax administrative competence including corruption on the level of tax collection and remittance to government coffers thus these nations embraced the opportunity provided in value added tax implementation to boost tax revenues. Hence developing countries exhibits high dependence on indirect taxes to generate tax revenues than direct taxes (Ahmad & Stern; 1989).

Highlights of the tax administration in developing countries which also envelopes West African Commonwealth countries is paramount to appreciation of the backgrounds of taxation in these countries but it is noteworthy however, that some of these nations may have comparative advantage over each other in terms of effective administration of taxes, development of strategic tax reforms and maintaining a firm hold on taxation as an important source of government revenue since after independence.

Taxation and human development index

Human development index is a measure of national economic progress which reveals the composite index of life expectancy, education and per capita income as a means of ranking the quality of human life in any country at a given period of time. The index was developed by Dr. Mahbub-ul-haq and is currently published annually by United Nations Development Programme (UNDP) as a measure for ranking nations on the quality of lives led by their citizens within their territorial sovereignty. The nations are ranked in four categories depending on their performance; very high, high, medium and low.

The human development index measures the ability of masses to be and to do basic activities of life based on accessibility such as feeding, being sheltered, healthy, working, and being educated, voting and partaking in community life. One of the core objectives of sourcing tax revenue is to raise government finance and thus facilitate its ability to provide public and essential goods. So the need to relate taxation to human development index is important for developing countries because it provides an insight to the administrative efficiency of the government and its accountability to the funds available to it.

Several empirical studies have assessed the relevance of fiscal policies of the government to the improvement of quality of life as measured by human development index of different nations (Gupta, Clements & Tiongson; 1998, Gomanee, Morrissey, Mosle & Verschoo; 2005, Suescun; 2007, Davies; 2009, Ali, Raza & Yousuf; 2012). Government fiscal policies at different times were found to exert significant effects on the human development index of the several countries across different levels of development. It therefore suggests that government policies on spending and revenue accumulation can improve or worsen the quality of life led by its citizens within its national boundaries.

With respect to taxation specifically, government revenue accumulation through the channel of taxation may exert an influence on the human development index of developing countries (Nwakanma & Nnamdi; 2013). It is therefore pertinent that governments should implement tax laws which promote the cultural and social inclinations of the masses and take the quality of human lives into proper consideration. It is also important to learn from countries that have successfully achieved welfare programmes, income redistribution through tax policies and also generated significant tax revenues without undermining economic development (Kizilkaya, Kocak & Sofuoglu; 2015).

Sherwani, Kamal and Abbas (2017) believe that human development index is the most appropriate measure of economic progress because of its composite nature. Having studied the correlates of human development across 188 countries and cutting across levels of progress which include very high, high, medium and low; they opined that both direct and indirect taxes can attract responses to changes occurring to human development index of various countries. Thus, it is important for policy makers of developing nations to understand that the role of taxation does not end at the point of revenue sourcing. But they should also be careful to proffer accountability of taxpayers' funds as well as channel the funds to equitably improve the quality of lives of the masses so as to attract the confidence of the masses and also elicit voluntary compliance to taxation to a great extent.

Theoretical Framework

2.2.1 Altruistic behaviour theory of taxation

The bane of economic development in developing economies is often blamed on inadequate government funds of which taxation is a veritable source. Low rate of voluntary compliance to taxation is a major discredit to tax systems of developing economies (Ahmed, Chetty, Mobarak, Rahman & Singhal; 2012) thus highlighting the importance of eliciting maximum level of tax compliance through propagating adequate fiscal psychology by maintaining fiscal accountability on the part of government administrations. This is where the altruistic behaviour theory of taxation comes to bear.

Altruistic behaviour theory of taxation stems from fiscal psychology tax models which propose the improvement of taxpayers' attitude and systems of taxation through proper accountability of taxpayers' funds. It presupposes an attitude of sacrificing private economic benefits by citizens in pursuit of general economic welfare through fiscal responsibility. Walpole and Tran-Nam (2012) observed that the fiscal psychology model by Schmolders (1959) was followed by altruistic theory explained by Becker (1974). He opined that altruistic behaviour theory of taxation can be regarded as another approach to fiscal psychology since it also emphasizes on the attitude of the taxpayers in boosting tax compliance and by extension, tax revenue collected. According to Becker (1974), the citizens are capable of responding rationally when they are convinced that maintaining personal fiscal responsibility will lead to the achievement of a better economic welfare of the state. Thus, as both economic and social agents, they are capable of sacrificing parts of their individual economic benefits to contribute towards enabling the state to provide for the development and welfare of all the people. Though Walpole and Tran-Nam (2012) observed that not all business taxpayers should or can be treated like individuals, however they also observed that this approach is capable of boosting tax revenue by promoting taxpayers' positive attitudes towards taxation through adequate compliance to taxation.

The implication of this theory to government administrators of taxation borders on accountability and efficiency. It is expedient for the government who collects taxes to ensure that the taxpayers' funds are properly accounted for, and further channelled towards providing those basic goods and infrastructures in order to sustain the altruistic feelings and behaviours of the citizens.

So, this study aligns with altruistic behaviour theory of taxation because first, it views adequate citizens' compliance to taxation, government accountability and efficiency in managing tax funds, as imperatives to boosting tax revenue. Secondly, it also views sustained growth and efficient fiscal wealth as capable of improving the economic welfare of the people if the altruistic behaviour of the citizens will be maintained. And these views are the basics of altruistic behaviour theory of taxation.

Review of empirical literature

Literatures abound on the subject of taxation's interrelation with various economic performance indicators and human development index specifically. The following paragraphs reviewed some of these related literatures prior to the establishment of some gaps which form the focus of the work. Myles (2000) considered the endogenous growth theory as proposing the interrelations between taxation and economic growth of nations while studying to reconcile this theoretical stance with empirical results in the United Kingdom. He concluded that theoretical models have shown that the association of taxation with economic growth can be substantial although empirical evidences tend to remain unresolved. The results on the influence of tax revenue on the macroeconomic indicators of nations have continued to vary among nations and regional groupings and even in time thus making its conclusion a difficult one.

The above conclusion brings to light the reality of the changing nature of the taxation's influence on economic performance over time and also the necessity of frequent reviews to maintain control of tax influence on economic growth by manipulating it for the welfare promotion of the country. Some studies have studied the relationship between taxation and economic performance using gross domestic product as a measure of economic progress; Nmesirionye, Ebieri and Onuche (2019), Hosen (2019), Arabi and Elbeely (2019), Owino (2018), Ahmad, Sial and Ahmad (2018), Ali, Ali and Dalmar (2018), Arowoshegbe, Uniamikogbo and Aigienohuwa (2017) and Popoola, Jimoh and Oladipo (2017).

Egbulonu and Amadi (2016) measured economic performance by studying the responsiveness of unemployment rate to tax revenue and found that increase in tax rate will decrease the rate of employment in Nigeria but Ironkwe and Agu (2019) found a positive association to flow from tax revenue to unemployment in Nigeria thus the study argued that government administrators ought to distribute state wealth towards combating unemployment in the nation. The contradiction in the two studies is a good example of the changing nature of the influence of taxation on economic performance over time.

Adukonu and Ofori-Abebrese (2016) applied per capita income in the measurement of economic performance and found that direct tax in the Ghanaian economy is positively related the wealth of individuals; thus it decreases the poverty level of individuals whereas indirect taxes worsen the poverty level of the people by increasing it. On the other hand, Okeke, Mbonu and Ndubuisi (2018) used gross fixed capital formation to measure economic development and their findings underscored the relevance of tax revenue to the growth of fixed capital formation in Nigeria. This is because the study found that and tax revenue has a significant effect on gross fixed capital formation, infant mortality and labour force of Nigeria.

Chigbu and Njoku (2015) studied the influence of disaggregated taxes on three measures of macroeconomic indicators of Nigeria which include gross domestic product, inflation and unemployment for the period 1994-2012. Co-integration analysis was to estimate long run relationship among the variables while ordinary least square regression technique was adopted to test the direction and magnitude of association between the dependent and independent variables in the study and results obtained showed that both direct and indirect taxes jointly have positive and significant effect on the selected macroeconomic indices but individually did not show significant influence on the variables. So the researchers concluded that tax revenues have not contributed significantly in combating high rate of unemployment in Nigeria and recommended the restructuring of Nigerian tax system and proper accountability of funds raised from taxation so that basic amenities are provided to encourage taxable persons to comply voluntarily with their fiscal obligations.

Economic performance has also been studied from the standpoint of infrastructural development. Onyekachi, Nwankwo and Oteh (2018) found that tax revenue has significant positive influence on the infrastructural development of Nigeria. The study measured infrastructural development by considering the World Bank's data on access to portable water, electricity and internet facilities. The paper calls for continued reinvestment of tax revenue in the economy to achieve voluntary compliance from the masses. Onyekachi, Ihendinihu and Nmesirionye (2018) submit that tax revenue has significant and positive influence on the infrastructural development of African countries with specific reference to Nigeria and South Africa. The study established the importance of tax revenue to the development of infrastructure in African countries however, there is need to explore the relevance of these infrastructures to quality human lives in terms of health, income and education which are components of human development index.

Some empirical studies on the influence of taxation on economic performance have also attempted to capture economic progress using the human development index. Ofoegbu, Akwu and Oliver (2016) found that tax revenue has significant influence on the human development index. The researchers also tried to ascertain possible difference in measuring economic performance of Nigeria using human development index and gross domestic product. They concluded based on the comparison of the regression results obtained for effect of tax revenue on human development index on one hand, and tax revenue on gross domestic product on another hand; that gross domestic product yields a painted picture of the association between tax and economic performance since the relationship obtained for tax and human development index appears to be smaller than that of gross domestic product. They submitted that human development index is a better measure of economic performance than gross domestic product. This submission agrees with the position of Ramirez, Ranis and Stewart (1997) who highlighted that human development is a superior and quality economic performance indicator than growth. This is also supported by Abraham and Ahmed (2011) who state that gross domestic product and human development index has no significant relationship as measures of economic growth and development respectively. These studies favoured the measurement of economic performance using human development index rather than gross domestic product.

Ibanichuka, Akani and Ikebujo (2016) applied multiple regression analytical technique in studying the influence of tax revenues on economic development of Nigeria. The study submitted that tax revenues that are federally collected which include companies' income tax, value added tax and customs and excise duties all have positive effects on the human development index. The study favours human development index as a better measure of economic growth and development than gross domestic product which was adopted by the empirical literature reviewed in the work.

Dang (2016) also recognises the use of human development index as a suitable indicator to capture economic development as the study measured the influence of budget deficit as a component of fiscal policy on economic development of Nigeria. The study argued that only few studies have been done in the aspect of human development index as a measure of economic development especially in relation to budget deficit. This brings to limelight the need to explore economic progress from the standpoint of human development index.

Imide and Imoughele (2019) researched on the impact of fiscal policy on the human development index of Nigeria using unit root analysis, co-integration and error correction model as their analytical techniques. Their findings suggest that fiscal policy tool is very relevant to economic performance and development. This is due to the fact that the study found that tax revenue and domestic debt have direct and significant effects on human development index of Nigeria. The study therefore recommended for greater emphasis on the principles of effective taxation.

Nwakanma & Nnamdi (2013) also found tax revenue to be an effective tool to the improvement of human development index in Nigeria as their study showed that tax revenue affects human development index significantly.

Dronca (2016) studied the effect if tax evasion on the economic development of twenty-eight member states with the European Union from 1999-2010. The study which applied ordinary least square panel regression, revealed that tax evasion affects human development index of the states negatively which is also the case for fiscal freedom and government effectiveness as other measure of economic development. The findings of this study further underscore the interrelatedness of tax revenue towards the economic development in any country.

Gap in literature

This study contributes to the body of literature in accounting research by investigating the influence of tax revenue disaggregated into direct and indirect tax revenue on human development index of West African commonwealth countries as a regional group. The purpose is to explore the relevance of taxation as one of the sources of governments' income towards improving the quality of human lives within this group.

Methodology

This study adopted *ex-post facto* research design which is necessary for examination of variables in retrospect and without any intentional manipulation and control**.** The work also covered the four West African countries previously colonized by the Britain Nigeria which are Ghana, Nigeria, Sierra Leone and The Gambia. Secondary data were sourced electronically from the official websites of World Bank, Federal Inland Revenue Services of Nigeria and International Monetary Fund through International Center for Tax and Development. The method of analysis employed in this work is the ordinary least square panel regression. The model is specified in line with the position of the altruistic behaviour theory of taxation which connotes the assumption that citizens pay their taxes in rational expectation of overall better economic conditions in their various countries;

HDIit = a + b1DTit + b2IDTit + eit

Where:

HDI	Human Development Index
DT	Direct Taxes
IDT	Indirect Taxes
e	Error term
i	individual countries
t	time

Results and Discussions

Testing for the effect of direct tax revenue on human development index of West African Commonwealth countries.

Hypothesis I

Direct tax revenue has no significant effect on human development indices of West African Commonwealth Nations

Prior to testing of the hypothesis as restated above, the Hausman test is conducted to facilitate the basis for selecting between fixed and random effects panel regression. Table 1 presents the results of the Hausman test in an abridged format, the full table is attached to this paper as appendix I.

Table 1: Hausman test for fixed and random effects regression models

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	16.609292	2	0.0002

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LOGDT	0.134772	0.119440	0.000018	0.0003
LOGIDT(-1)	-0.068349	-0.054959	0.000012	0.0001

Source: Researcher's Eviews output 2020

The Hausman test has a pair of hypothesis from which the choice of the appropriate regression estimate is to be selected depending on the value of the Chi-square probability. The pair of hypothesis is stated as:

Ho: Random effect regression is more appropriate

H1: Fixed effect regression is more appropriate

The abridged Hausman test result on table 1 shows a chi-square value of 16.609 approximately with a probability value of 0.0002. This outcome implies that the fixed effect regression model is more appropriate since we will reject the null hypothesis which posits the acceptance of random effect regression.

Table 2: Direct and indirect tax revenues and human development index estimation

Dependent Variable: HDI
Method: Panel Least Squares
Date: 01/15/20 Time: 09:57

Sample (adjusted): 1982 2018
Periods included: 37
Cross-sections included: 4
Total panel (balanced) observations: 148

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.130441	0.062303	-2.093658	0.0381
LOGDT	0.134772	0.016712	8.064208	0.0000
LOGIDT(-1)	-0.068349	0.019686	-3.471989	0.0007

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.805268	Mean dependent var	0.405284
Adjusted R-squared	0.798411	S.D. dependent var	0.090629
S.E. of regression	0.040691	Akaike info criterion	-3.525919
Sum squared resid	0.235119	Schwarz criterion	-3.404411
Log likelihood	266.9180	Hannan-Quinn criter.	-3.476551
F-statistic	117.4413	Durbin-Watson stat	0.281377
Prob(F-statistic)	0.000000		

Source: Researcher's Eviews output 2020

The fixed effect multiple regression estimate is shown on table 2. The outcome of the regression indicates that direct tax revenue of West African Commonwealth nations is positively and significantly associated with their human development index. This conclusion is based on the beta coefficient of 0.135 and t-statistics of 8.064 approximately which are all significant at 1%. The implication of the above outcome is that human development index of West African Commonwealth nations respond in the same direction with the changes in their direct tax revenue. This underscores the possible relevance of tax revenues to the overall development of the group and region since human development index encompasses income level, health and education as contributory factors to the index.

Having found that the probability level of the interrelation of direct tax revenue and human development index is significant, we therefore reject the null hypothesis and accept its alternative which supports the existence of significant linear relation between direct tax revenue and human development indices of West African Commonwealth Nations.

Testing for the effect of indirect tax revenue on human development index of West African Commonwealth countries.

Hypothesis II

There is no significant linear relation between indirect tax revenues and human development indices of West African Commonwealth Nations

The outcome of the regression estimate on table 2 also shows that indirect tax revenue has an inverse effect on the human development index of West African Commonwealth countries at a significant level. The above conclusion is based on the beta coefficient of -0.07 and a t-statistics of -3.472 approximately. The beta coefficient is also significant at 1%. The residual statistics also show that direct and indirect tax revenues have joint significant impact on the human development index of West African Commonwealth nations. This submission is based on the outcome of the r-squared which is 0.805 approximately implying that direct and indirect tax revenues can jointly predict changes in the human development index. The above finding is further supported by the f-statistics probability which is significant at 1% and implies that regression model has a goodness of fit.

On the basis of findings made in this subsection, we reject the null hypothesis and accept the alternation which posits that indirect tax revenue has significant effect on the human development index of West African Commonwealth nations. It therefore follows that indirect tax revenue of West African Commonwealth nations may not be growing in the same direction and magnitude with the development of the region. But it is important to note that the significance level of the association between these variables calls for critical consideration of economic implications of fiscal policies before and after implementation of such policies. The result aligns with the findings obtained in the Granger causality tests for indirect tax and human development index. The conclusions made by Ofoegbu, Akwu and Oliver (2016) on the importance of tax revenues to the improvements in the human development index of Nigeria also support the results of this study and shows that optimization of indirect tax revenue is critically relevant to the development of the group.

Conclusion and Recommendations

The study concludes that tax revenue provides significant opportunity for improving the human development index of West African Commonwealth countries. The study also concludes that indirect tax revenue of West African Commonwealth countries has not been adequately harnessed to improve quality of human lives in the area because the study found that direct tax revenue has shown a positive influence on the changes in human development index whereas indirect tax revenue appears to associate negatively with human development index of the group.

Therefore, it is important for the West African Commonwealth nations and developing economies at large to tap into the opportunity available within the ambits of fiscal policy and specifically in taxation to improve the quality of human lives within its territory. Tax policies of West African Commonwealth countries should explore and concentrate more in raising tax revenue through indirect taxation because it provides equitable bases than direct taxes given the large informal economies in this region. The study also calls for government administrations in the countries that have recently reinvigorated their indirect tax policies such as Nigeria, to ensure proper accountability so that the possible changes obtained as a result of this policy implementation can be well captured and weighed against the status *ante*.

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Appendix I

Hausman Test Result for Analysis of the Effect of Direct and Indirect Tax Revenues on Human Development Index of West African Commonwealth Countries

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	16.609292	2	0.0002

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LOGDT	0.134772	0.119440	0.000018	0.0003
LOGIDT(-1)	-0.068349	-0.054959	0.000012	0.0001

Cross-section random effects test equation:
Dependent Variable: HDI
Method: Panel Least Squares
Date: 01/15/20 Time: 10:00
Sample (adjusted): 1982 2018
Periods included: 37
Cross-sections included: 4
Total panel (balanced) observations: 148

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.130441	0.062303	-2.093658	0.0381
LOGDT	0.134772	0.016712	8.064208	0.0000
LOGIDT(-1)	-0.068349	0.019686	-3.471989	0.0007

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.805268	Mean dependent var	0.405284
Adjusted R-squared	0.798411	S.D. dependent var	0.090629
S.E. of regression	0.040691	Akaike info criterion	-3.525919
Sum squared resid	0.235119	Schwarz criterion	-3.404411
Log likelihood	266.9180	Hannan-Quinn criter.	-3.476551
F-statistic	117.4413	Durbin-Watson stat	0.281377
Prob(F-statistic)	0.000000		