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Tax Compliance, Governance Quality and Human Development Index in Nigeria

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ABSTRACT

This article investigated the relationship between human development, tax compliance and the quality of governance in the case of Nigeria which is analyzed between 1999 and 2023. The sources used to obtain the data of the study consist of websites of United Nations Development Programme (UNDP), World Bank, Federal Inland Revenue Service and National Bureau of Statistics (NBS). The data was not normally distributed and therefore the spearman correlation and quantile regression were used to study the relation at the lower quantile which applies to the low-HDI countries such as Nigeria. The results indicated that overall negative effect of compliance with taxes on HDI, meaning that the trend of collecting more taxes does not always correspond to better human development. The latter can be caused by misutilization of tax revenues, corruption, or low quality of government services. On the other hand, governance quality as denoted by Corruption Perception Index (CPI) exerts a positive and significant impact upon HDI pointing at the significance of transparency and accountability. The paper highlights that to make taxation a positive feature in human development, there should be a proper tax revenue allocation, better governance and citizens friendly tax policies.

Keywords: *Tax Compliance, Human Development Index, corruption perception Index, governance quality and tax to GDP ratio.*

Introduction

Tax compliance is a source of revenue to government that is required to deliver on the production of public goods and services. It is an inseparable part of human and capital development of states. In the developing nations, such as Nigeria, tax compliance however has been poor, this is a challenge to sustainable development and socio-economic improvement of the nation (David, Brian-Kufre & Williams, 2024; Fjeldstad & Moore, 2008). The correlation between a rate of compliance to tax payments and the development indices of different countries (including the Human Development Index (HDI)), underlines the necessity to positively influence this phenomenon.

The quality of governance is a central ingredient in the powerful human development outcomes that dominate in developing economies such as Nigeria (Bello, Dandago and Samaila, 2023a). The proper governing allows reporting to someone and ensures that the process of governance is transparent and facilitates the efficient distribution of resources, which, in turn, is needed to enhance the main determinants of human development (e.g., education, healthcare, and income level) (Abdu, 2017; Kaufmann, Kraay, & Mastruzzi, 2010). Nevertheless, in most low-HDI nations, corruption, poor governance, and ineffective provision of law enforcement on the one hand, and inefficient provision of public services on the other, cast a shadow on the effective influence of government policies on humanity development (Abdu, 2017; Acemoglu and Robinson, 2012). Transparency International, (2022) argued that, Corruption Perception Index (CPI) is one of the widely accepted indicators of governance quality, and represents whether corruption impacts negatively on the quality of society and the performance of the economy. In the light that Nigeria has been challenged by importunate issues in governance practices and is ranked low in its HDI, the issue of how quality governance can influence human development is of priority concern when developing policies to promote inclusive growth and development.

A three-part metric of life expectancy, education, and per capita income value is the HDI and it indicates the overall development and the quality of life in a country. With the mentioned high natural and human resources, the HDI of Nigeria is relatively low, as stated by UNDP, (2024) placing the country at number 161 out of the total of 191 countries in 2022. Such a long term underperformance may be explained by the lack of high-quality governance in managing the public finance which deters investments in such vital areas as education, healthcare, infrastructural development (World Bank, 2021). This gap cannot be filled without effective tax systems, though tax evasion is rampant in the country, tax base is narrow, and poor organization of the collection (Bello, et al., 2023a; David, Brian-Kufre & Williams, 2024).

Nigeria has complicated factors which affect tax compliance, such as socio-cultural attitudes, the quality of governance, and economic restraints (Bello, et al., 2023b). Research has shown that corruption attitudes and wastage of government cash deter the spirit of voluntary compliance, and dilutes trust in governments (Bello et al., 2023b). Furthermore, the informal sector that comprises a bigger share of the Nigerian economy is mainly not taxed, which also led to the loss of the revenue (Bello, et al., 2021). This issue can only be dealt with by an attempt to reorganize tax administration, enhance more openness, and a culture of compliance.

It is important to examine the relationship between tax compliance, HDI and the quality of governance so as to find ways on how better governance of revenues collected through tax compliance can have direct effects on human development outcomes. This is a study of interest especially regarding the situation in Nigeria, given that empirical data in other developing countries indicated that greater tax compliance resulted in the better investment in the public and other development outcomes (Bird & Zolt, 2015). But, Ideh (2019) pointed out that tax earning in petroleum profit has an adverse relationship with HDI in Nigeria and therefore, a study that could determine the effect that the level of tax compliance has on HDI in Nigeria is necessary. In an analysis of this relationship, policy makers would have realized the intervention areas to close the development gap with the aim of increasing the living standards of Nigerians in health, education, as well as standard of living.

The paper will set out to explore the complex relationship existing between tax compliance, quality of governance and HDI in Nigeria providing solutions to how a less corrupt, more efficient and equitable taxation is a way to advance development in a nation. The knowledge of these connections is thus imperative in formulating fiscal policies that in addition to increasing the amount of revenue generated lead to inclusive economic growth and sustained human development.

Nigeria has been blessed with plenty of natural and human resources, but it still encounters a great deal of trouble on the issue of sustainable development. It is supported by the fact that it is ranked low in the Human Development Index (HDI), that is an indication of poor results when it comes to life expectation, education levels, and income (UNDP, 2024). One of the reasons of such poor performance is ineffectiveness of the mobilization of local revenue in the form of taxes. Although taxes continue to be a paramount instrument in funding of public goods and socio-economic development, the rate of tax compliance is horrifying in Nigeria, which results in low levels of investment in the key sectors like healthcare, educational and infrastructure (David, Brian-Kufre & Williams, 2024).

In the practical aspect, low tax compliance is aggravated by corruption, low levels of trust in government, inefficient administration of the taxes, and the informal sections that make the largest part of the taxes that are not enforced in the first place (Bello, et al. (2023a). This affects the ability of the government to raise enough funds in socio-economic programs, thus perpetuating poverty and inequality. These challenges have defied many efforts so far such as the implementation of electronic tax systems and campaigns to create awareness on voluntary compliance hence raising concern on the relevance of the existing strategies and policies.

In Nigeria, the connection between tax compliance, quality of governance and human development outcomes has not been tested as yet, at least, theoretically. Although in the literature, the factors affecting tax compliance, quality and determinants of HDI have been discussed in detail. Empirical studies that relate these most important variables, especially in the Nigerian society, are limited. This gap deprives the policymakers of a clear picture of the extent to which improving tax compliance can have a direct country on development. Also, theoretical approaches, which include socio-political and economic peculiarities of Nigeria, are absent, so global studies cannot be easily applied to the environment of this country.

This work will take an approach to these practical and theoretical issues with the study of the relationship between tax compliance, the quality of governance, and the Human Development Index in Nigeria. It aims at providing a gap in the literature and the identification of possible solutions that can be used with the help of which it will assist the fiscal policy reform and the improvement of the results of human development, securing increased revenue mobilization.

Conceptual Review

Tax compliance, the quality of governance, and Human Development Index (HDI) are the important concepts which intersect each other in the broad spectrum of socio-economic development discussion. Tax compliance is described as the readiness of individuals and businesses to comply with their tax obligations as stated in law, that is reporting, payment and timely filing of taxes (Kirchler, 2007). The factors that influence it include the way taxpayers feel about it, the level of trust in the government, perceptions of the fairness of the tax system as well as quality of the administration of taxes (Alm & Torgler, 2011; Bello, et al., 2023b). In Nigeria, this low compliance is commonly associated with institutional corruption, ineffective tax collection and enforcement system as well as the inherence of the informal sector that is mostly out of the tax net (Bello, et al., 2023a).

Governance quality The quality of governance can be defined as the quality of institutions, policies and processes that guarantee transparency, accountability and effective management of public resources. Primary dimensions included in it are rule of law, government effectiveness, regulatory quality and control of corruption (Kaufmann, Kraay, & Mastruzzi, 2010). Good governance leads towards development through economic stability, social equity and economic sustainability because it enables the institutions in the country to be run efficiently and in the interest of the citizens (North, 1990). Conversely, sluggish government, which is qualities that are typified by presence of high rates of corruption, weaker institution, and also the absence of transparency, destabilizes economic growth, and instead worsens the human development indicators (Acemoglu & Robinson, 2012). The Corruption Perceptions Index (CPI) is one of the most popular indicators of the quality of governance (Transparency International, 2022) that evaluates the perceived levels of the corruption in the public sector and its influence on the economic and social development. Research has indicated that robust governance arrangements enhance tax compliance, investment environment, services provision, and hence, yield greater human development outcomes (Besley & Persson, 2014). It is thus important to know how much governance is good or bad and how it can influence economic and social well-being to have policies that can enhance sustainable development and also increase human development indicators.

Conversely, the Human Development Index is a compound figure conceived by the United Nations Development Programme (UNDP) to make evaluations on the general development of a nation by considering three major dimensions that include life expectancy, the level of educational achievement and income earned per capita. The higher the HDI the better the living standards and socio-economic well being whilst when the HDI is low then there arise some developmental challenges (UNDP, 2024). In Nigeria, the rate of HDI has continued to lag behind since the government has not been investing well in sectors, such as education, health, and infrastructure, which are highly reliant on the state revenues (World Bank, 2021).

Hypothetically, one can perceive partial tax compliance using the platform of the fiscal exchange theory, which states that paying taxes will not be perceived as a problem when the taxpayers can see some substantial payout of their efforts on the form of enhanced public services (Bello, et al. 2023a). The deterrence theory, on the other hand, focuses on the observance of penalties and enforcement to determine compliance and should focus its attention towards having powerful tax administration systems (Kirchler et al., 2008). These theories play a pivotal role in explaining the tendencies of taxpayers in Nigeria, where the system is highly suspicious to the government and felt to be inefficient thus noncompliant to its taxpayers.

Association of tax compliance, quality of governance and HDI highlights the essence of effective tax systems in enhancing development. When governments have sufficient tax revenue, they can spend it in education, health and infrastructure which increases HDI components directly. Nevertheless, in Nigeria, such a correlation is undermined by low compliance level and the non-effective spending of the tax dollars that aggravates the problems of development (David, Brian-Kufre & Williams, (2024). This paper aims to add on these theoretical frameworks by examining the relationship among tax compliance, quality of governance, and HDI in Nigeria and suggesting how the former impacts positively on the latter.

Empirical Review

The associations between tax compliance, human development outcomes and revenue mobilization have been examined in various empirical papers, hence exploiting the dynamics through which the three variables influence one another especially in developing economies such as Nigeria. This literature review summarizes the most important conclusions of other researches to determine the theoretical framework that would justify the present study.

The empirical studies of the past show the prevalence of the inefficiencies in tax compliance in Nigeria. As an example, a study by Bello, et al. (2023a) researched the underlying factors on tax compliance in Nigerian tax payers and noted that corruption, perceived unfairness of the tax system, and a feeling of mistrust towards the government have a detrimental effect on voluntary compliance. On the same note, it has been noted that prevalence of the informal sector, comprising a greater part of the Nigeria economy, (more than 60 percent) leads to a narrow-based tax, which in turn aggravates the revenue gaps (Bello, et al. (2021).

Others studies show that tax administration is important in enhancing compliance. A study conducted by Olaoye and Adebayo (2017) on the effect of e-taxation system on tax compliance in Nigeria indicated that digital revenue systems enhance efficiency and transparency hence boosting voluntary compliance. They however mentioned that infrastructural problems and poor awareness of taxpayers serve to dampen the total implementation of these systems.

Tax revenue and Other Human Development

It is always found in the research of developing nations that in order to transform human development improvishment, mobilization of tax revenue is essential. In a cross-country analysis of Sub-Saharan Africa Nikiema and Zore (2024) established a positive correlation between tax revenue and stability that is converted into investment in education and health care. They stated that a country whose tax compliance rate is high has more developed indicators such as life expectancy and literacy rates.

Locally, Olaleye and Damilola (2021) studied the distribution of tax incomes to sectors and the effect it had on the constituents of HDI in Nigeria. Their conclusions indicated that although the presence of tax revenue has an important effect on government investments in the education and healthcare sector, ineffective fund distribution and corruption disintegrate its effects on the actual developmental output. It shows that there is insignificant correlation between revenue mobilization and improvements in HDI. On the same note, the works by Ideh, (2019) investigated the impact of the tax revenue on the HDI during the years 2003 to 2017. The analysis created that the tax revenue and HDI in Nigeria were not significantly related. Besides, an assessment of the effect of tax revenue on human development index of Nigeria between the years 2015 to 2022 was carried out by Victory, et al. (2023) study and results revealed that there is negative relationship between tax revenue and HDI.

Human Development Index and Quality of governance

A number of empirical studies have also investigated the importance of governance quality to human development and have shown how good governance plays the key role in enhancing education levels, health and level of income.

Gani and Clemes (2021) studied the influence of the quality of governance on the countries of an HDI using panel data in the developing countries between 1995 and 2019. Their result indicated that an increase in government effectiveness, regulatory quality and rule of law have a positive effect on HDI, and vice versa, political instability and corruption have an adverse effect on human development. They reiterated the need to reform their governance process laying more emphasis on the enhancement of accountability measures and the delivery of good services by governments to bring about good development.

On the same note, Çule and Fulton (2013) conducted a research on the correlation between the institutional quality and human well-being within the economic developing nations. By comparing them using panel data analysis, they discovered that those countries that have better governance frameworks have realized greater growth in their economies, better social amenities, and living conditions which help boost the HDI scores of such countries. They underlined importance of bold anti-corruption measures and good management of the public sector to maintain human development gains.

Nandha and Smyth (2013) focuses on the relationship that exists between quality of governance based on the six indicators of worldwide governance (WGIs) and the measurement of human development by Human Development Index (HDI) in the 186 developed and developing countries. Study findings imply that human development is influenced by the quality of governance greatly. However, study further reasoned that the strength of the effect of the quality of governance to the human development has been declining.

In different countries, Kaufmann, Kraay, and Mastruzzi (2010) examined the governance indicators and realized that good quality of governance is highly related to better performance of human development outcomes. In their piece of work they showed that, societies with powerful institutions and are low corruption rate, and good performance in delivering services to the citizens lead to an increase in HDI scores and hence the notion suggested that good governance ensures sustainable development.

On the same note Holmberg, Rothstein, and Nasiritousi (2009) studied the effects of corruption on human development basing on data obtained in over 100 countries. Their results imply that the more the corruption the lower the ranks of the economy in terms of education, accessing healthcare and economic opportunities. They posit the view that governance reforms, especially the aspect of curbing corruption can be the cure to the desired enhancing of development achievements.

To the extent of the African context, the work by Ajie and Wokekoro (2012) evaluated the effects of governance quality on human development in selected sub Saharan Africa countries. Their findings showed that poor governance systems, political uncertainties and high rates of corruption are major challenges to human development achievements. They advised that African governments ought to support institutional designs and boost the transparency of the public sector to lead to better human development results.

Bello, et al. (2023a) in Nigeria chose to study the impact of the quality of governance as it applies to tax, and they found out that nations with a high degree of institutional design and a low corruption index have an increased tax or collection income, which yields results in superior progress. In Nigeria, however, it is institutions and transparency that work against the possibility of tax revenues playing a productive role in improving HDI.

The cross-country empirical studies offer information about the best practices that can be borrowed to Nigeria. As an example, the study of Fjeldstad and Moore (2008) provided a comparison of the trends in tax compliance in Nigeria, Ghana and Rwanda, with the recommendation that the latter country due to effective reforms in taxes and the efficient use of government revenues considerably increased in HDI. They stressed that there is a need to combine compliance strategies with general developmental outcomes and this is a lesson that can be tapped in Nigeria.

Although the literature available is quite helpful, there exists critical gaps that the study proposes to fill by examining the interactions between tax compliance and HDI in Nigeria given that they are co-dependent. Secondly, the use of empirical research tends to address independent variables that affect the issue of tax compliance with no investigations into the overall effects to human development. Lastly, there are limited studies that we can use to give practical frameworks on linking increased tax compliance to measurable HDI in Nigeria. Therefore, by filling these gaps, this study will help in increasing deeper knowledge on how a good tax compliance can advance sustainable human development in Nigeria.

Theoretical Review

To develop the conceptualization of the interdependent association between tax compliances, the quality of governance and the Human Development Index (HDI) in Nigeria, it is imperative to explore some theoretical frameworks. The theories provide an insight into why people behave the way they do concerning taxpayer behavior, the effectiveness of tax policies in general, and the implications and the overall development sociologically as well as economically.

According to Fiscal Exchange Theory, the facilitation of a more willing spirit in taxpayers at giving towards taxes would arise when human beings as the taxpayers have a clear and observable reward in what he or she gives towards taxes. According to this theory, there was an interrelation between state and taxpayers, indicating that good quality public services and fair distribution of resources results in high voluntary compliance (Bird & Zolt, 2015). This theory is very essential in the context of Nigeria where people hardly trust government institutions citing corruption and inefficiency. Assuming that Nigerians have an idea that paying taxes will result in the provision of those public amenities that are important in the development of the country, the compliance rates might rise in a positive influencing impact on HDI.

The Public Goods Theory holds that taxes are necessary to pay the cost of non-excludable and non-rivalrous public goods and services delivered to all people including education, medical services, as well as infrastructure. This theory matches with the aspects of HDI which focus on life expectancy, education, and per capita income. Lack of funding in some of these sectors in Nigeria because of low tax payers may be a setback in human development. Through the guarantee of enough tax income, the government will be in a position to invest in the necessary public goods that will have direct input into the HDI.

The Institutional Theory lays attention to circumstances in which institutional constructions, norms, and rules influence organizational as well as individual behavior. In the tax compliance situation in Nigeria, the quality of governance that consists of the effectiveness of tax authorities, the rule of law, and lack of corruption influences strongly on the behavior of compliance. High trust and legitimacy can be achieved using institutions that are corrupt but are perceived as not corrupt which allows taxpayers to complete their duties voluntarily. Inherent good governance systems will lead to high amount of tax collection that can be utilized towards projects that raise the HDI.

Through the combination of these theoretical perspectives, this paper will present the idea that through the increase of tax compliance and the ability of governance to be of higher quality, one can trigger the growth of the expenditure of the population into the sphere of education, healthcare, and infrastructure. The investments are important in boosting the HDI of Nigeria and attaining a sustainable human development.

Methodology

The research design based on this study is a quantitative one that relies on a descriptive and explanatory nature where the research aims to explore the correlation between tax compliance and the Human Development Index (HDI) in Nigeria. The design allows systematic analysis of the variables and its dependence giving descriptive analysis as well as inferential analysis.

The study uses secondary data, which is available with the United Nations Development Programme (UNDP) and World Bank. Federal Inland Revenue Service (FIRS) and other government agencies tax compliances data. HDI-based (life expectancy, education levels and income indexes) statistics of the UNDP, World Bank, and National Bureau of Statistics (NBS).

Variables and Measurements

Independent Variables (**Tax compliance and governance quality) are measured through Tax revenue as a percentage of GDP and corruption perception index (CPI). Moreover, the d**ependent variable (**Human Development Index) is measured through: Life expectancy at birth, mean years of schooling and expected years of schooling and Gross National Income (GNI) per capita.**

Data Analysis Techniques

The data was analyzed using both descriptive statistics and inferential statistics**.** Before the regression analysis was conducted diagnostic checks were performed such as Skewness/Kurtosis tests for Normality, Shapiro-Wilk test for normal data, Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, VIF test for collinearity, Durbin-Watson d-statistic, Ramsey Reset test using powers of the fitted values of HDI and the LM test for autoregressive conditional heteroskedasticity (ARCH) to ensure the normality of the data in order to choose the appropriate regression model. The results of the above tests suggested that non-parametric regression (quantile regression) model is suitable for the data set.

The study will use the following regression model:

$HDI=\beta_0 + \beta_1TXC + \beta_2PGQ + \epsilon$

Where:

HDI = Human Development Index

TXC = Tax compliance (tax revenue as % of GDP)

PGQ = Governance quality (corruption perception index)

Results and Discussion

The descriptive analysis of the data in table 1 below revealed that the average tax compliance (tax-to-GDP ratio) in Nigeria over the last 25 years was 1.07%, significantly lower than the Sub-Saharan African average of 15% (World Bank, 2022). The mean Human Development Index (HDI) scores for Nigeria remained low, averaging 0.4964, placing the country in the low human development category (UNDP, 2024). Governance quality measured with corruption perception index is very low as well with a mean value of 21.8 within the last 25 years. The low tax-to-GDP ratio highlights systemic inefficiencies in tax administration and compliance, while the persistently low HDI underscores the urgent need for increased public investment in key sectors.

Table 1: Descriptive Statistics

Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
HDI	25	0.4964	0.0331	0.4390	0.548
TXC	25	0.0107	0.0058	0.0056	0.034
PGQ	25	21.800	5.6125	10.00	28.00

Diagnostic Checks

To ensure the normality of the data in compliance with the ordinary least squared regression model the various tests for normality were conducted and the tests indicated that the dependent variable (HDI) is normally distributed while the independents variables have normality problems.

The skewness value of 0.9560 suggests a moderate positive skewness, indicating that the distribution of HDI values is slightly skewed to the right. However, the kurtosis value of 0.0307, which is close to zero, suggests that the distribution has a shape similar to the normal distribution in terms of its peakedness and tail behavior. The p-value of 0.095 is above the conventional significance level of 0.05, implying that the null hypothesis of normality cannot be rejected at the 5% significance level. This suggests that the HDI data does not significantly deviate from normality, meaning it can be reasonably assumed to follow a normal distribution for further parametric analysis. However, given the moderate skewness, caution may be required when applying statistical techniques that assume strict normality. Similar, the data for the governance quality is normally distributed considering the p value of 0.0977, however the kurtosis value of close to one undermine the normality. However, the significant p value (0.000) in respect to tax compliance indicates that the data for CPI deviate significantly from normality.

To further substantiate the normality of the tax compliance (CPI) data, Shapiro-Wilk test was conducted and the results (W = 0.63435, V = 10.160, Z = 4.740, p-value = 0.00000) indicate that the data significantly deviates from a normal distribution. The low W-value (0.63435) suggests substantial departure from normality, while the high Z-score (4.740) and a significant p-value (0.00000) confirm that the null hypothesis of normality is strongly rejected. This implies that the variable is highly skewed and/or has extreme kurtosis, meaning that standard parametric methods relying on normality assumptions may not be appropriate for analysis. Given this non-normality, a non-parametric approach, such as quantile regression, is more suitable for the study. In view of the above exigencies, quantile regression model (a nonparametric regression approach) was used to analyze the data.

Correlation Analysis

Due to the abnormality of the data spearman correlation was used to establish the correlation between the explained and the explanatory variables. The result revealed a positive relationship between human development index (HDI) and all the explanatory variables of tax compliance (measured as tax revenue to GDP ratio) and governance quality (CPI).

Table 1: Correlation Matrix

	HDI	TXC	PGQ
HDI	1.00		
TXC	0.6550	1.00	
PGQ	0.7722	0.3207	1.00

The results suggest a strong positive correlation between tax compliance and human development index. Higher tax compliance allows for increased government revenue, which can be invested in healthcare, education, and infrastructure, thereby improving life expectancy, educational attainment, and income levels.

Regression Analysis

Due to the abnormality of the tax compliance data a quantile regression analysis was conducted to take care of the data abnormality in the model. The data analysis was conducted to evaluate the extent to which tax compliance and governance quality predict HDI.

Table 1: Quantile Regression Result

HDI	Coef.	Std. Err.	t	p>|t|	[95% Conf. Interval]	
TXC	-9.1101	2.0829	-4.37	0.000	-13.43	-4.79
PGQ	0.4575	0.0747	6.12	0.000	0.302	0.612
Constant	0.4687	0.0078	59.67	0.000	0.452	0.485
Pseudo R-square		0.6094				

From table 2 above, given the quantile regression output the coefficient for tax compliance (tax-to-GDP) is -10.32465, indicating that for each unit increase in the Tax-to-GDP Ratio, HDI is expected to decrease by approximately 10.32 units at the estimated quantile (likely the median, if no quantile was specified). The t-value of -3.36 and p-value of 0.003 indicate that the coefficient is statistically significant at the 1% level. Hence, we reject the null hypothesis that the coefficient of tax compliance is zero. This suggests a statistically significant negative relationship between tax compliance and HDI at 0.25 quantile. However, the coefficient for governance quality (CPI) is 0.544, indicating that for each one-unit increase in CPI, HDI is expected to increase by approximately 0.544 units at the 0.25 quantile. The t-value, 4.93 and the p-value, 0.0000 shows that, this coefficient is highly significant at the 1% level. We can therefore, reject our null hypothesis which is that the coefficient of the governance quality is zero implying that there is a positive correlation between CPI and HDI.

In addition, the value of Pseudo R-squared at 25th percentile, on the quantile regression model is 0.6094 implying that the quantile regression model, including the tax compliance and the governance quality, explains a large variation in Human Development Index (HDI) of the countries with low HDI (like Nigeria) with only about 60.94 percent. This represents a good fit such that, tax compliance and the quality of governance considerably influences the outcome or results of human development to the lowest quantile of HDI. The implication of this outcome is that a significant increase in tax compliance and governance would potentially help the countries with the low level of development to achieve significant enhancement of the HDI.

Implications of the Findings

The findings suggest a significant negative relationship between tax compliance level (Tax-to-GDP Ratio) and human development (HDI). This implies that higher tax compliance is associated with lower human development outcomes at the 0.25 quantile analyzed. This counterintuitive result reflects that while higher tax compliance is often thought to boost government revenue for development, in some contexts (such as in countries with poor governance or inefficient public service delivery), increased tax collection is ineffective at improving human development outcomes. Additionally, if tax compliance leads to higher taxes in the economy, it may disproportionately burden the lower-income population, which could negatively affect HDI indicators (education, health, income levels).

The positive and highly significant relationship between Governance Quality and HDI suggests that better governance and lower corruption are strongly associated with better human development outcomes. In countries with high governance quality, there is typically better allocation of public resources to improve education, healthcare, and income equality, which in turn drives improvements in HDI. Therefore, high levels of governance quality and transparency are critical to improving human development. Countries with lower corruption and better public sector performance tend to invest more effectively in human capital, which directly boosts HDI.

Conclusion and Recommendations

The findings suggest that improving governance quality (measured by CPI) is crucial for enhancing human development outcomes. The negative relationship between tax compliance (Tax-to-GDP ratio) and HDI may be indicative of challenges in tax system effectiveness in promoting development or the broader inefficiency of state resources, possibly due to corruption or misallocation. In line with the above conclusion, the study recommends as follows:

Improve Governance and Reduce Corruption: Governments should prioritize improving governance quality. Policies aimed at reducing corruption, ensuring transparency, and accountability in public institutions are essential for fostering an environment where human development can thrive. This can be achieved through establishing anti-corruption mechanisms and strengthen institutions that manage public resources to ensure that revenue from taxes is used effectively for development programs.

Enhance Tax System Efficiency: Although tax compliance is important, the negative relationship with HDI suggests that tax systems may need reform. Tax policies should ensure that they do not disproportionately burden lower-income populations, and should be more effectively utilized to fund public services that directly improve HDI indicators. Reforming the tax collection system to ensure funds are used for development goals like healthcare, education, and social safety nets, with a focus on improving public trust in how taxes are spent.

Strengthen Public Service Delivery: Efficient and effective delivery of public services (e.g., healthcare, education, infrastructure) should be prioritized. Governments should invest in programs that directly impact human development outcomes (such as targeted social welfare programs that help reduce poverty and inequality) and ensuring that taxes collected are reinvested into these key sectors.

Suggestions for further study

Based on the findings of the study, the following future research directions are suggested to further investigate the relationship between tax compliance, governance quality, and human development outcomes. The negative relationship between tax compliance and HDI suggests inefficiencies in how tax revenues are utilized hence a study is suggested to investigate how efficiency of tax collection and government spending can moderate the relationship between tax-to-GDP ratio (tax compliance) and human development outcomes (HDI). Secondly, since governance quality (CPI) was found to have a significant positive relationship with HDI, a deeper examination of the specific dimensions of governance (e.g., accountability, political stability, legal frameworks) may yield more precise insights. Finally, a longitudinal approach could provide insight into the dynamic nature of tax compliance and its long-term effects on human development. This would allow researchers to examine whether improvements in governance (e.g., through anti-corruption reforms) can mitigate any negative effects of higher tax compliance on human development.

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