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Taxation and human development index: comparative analysis of the United States of America and Nigeria

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Abstract: *This study compared the influence of taxation on human development outcomes in the United States of America and Nigeria. The specific objective was to investigate the differences in how tax revenue contributed to improvements in human development index over the period 2004 to 2024. The study adopted an ex-post facto research design and relied on secondary data collected from the Federal Inland Revenue Service reports and the World Bank Development Indicators. The population covered all available annual tax and human development data for the two countries, and the entire dataset spanning twenty-one years was used as the sample. The hypothesis was tested using the fully modified least square (FMOLS) regression technique at a 5% level of significance. The finding revealed that taxation had a more positive effect on human development in the United States of America (U.S.A.), while the positive effect was weaker in Nigeria. The study recommended that the Federal Inland Revenue Service (FIRS) implement strategies to improve tax compliance and expand the tax base. This could involve enhancing taxpayer education, simplifying filing procedures, and using technology to reduce leakages and inefficiencies in revenue collection. Also, the U.S. Department of the Treasury continue to maintain and enhance the efficiency of its tax collection and administration systems. By ensuring that tax revenues are effectively mobilized and allocated to key social sectors such as education, healthcare, and social welfare programs, the government can sustain the positive impact of taxation on human development.*

Keywords— Taxation, Human Development Index, United States of America, Nigeria

1. Introduction

The relationship between public finance and human well being has become an important subject of discussion in both advanced and developing societies. As countries confront changing economic structures, shifts in population, and growing demands on public institutions, governments are under pressure to adopt fiscal systems that can sustain long term development (Raza et al., 2025). Oyegun (2025) submitted that taxation stands out as one of the most visible and influential tools available to policymakers because it shapes how resources flow from individuals and businesses to the state. At the same time, the progress of any society is increasingly judged not only by national income but also by indicators that reflect the quality of life enjoyed by its citizens. This is why the human development index has gained acceptance as a measure that captures essential aspects of living standards (Liu et al., 2023). The combination of life expectancy, educational attainment, and income per person makes it possible to evaluate how effectively a country transforms economic activity into improved human welfare. When placed together, taxation and human development create an important field of inquiry because they highlight the connection between the way a government collects revenue and the well being of its people (Nufus, 2025). Examining countries that differ widely in economic capacity and institutional structure provides a rich setting for understanding how public finance arrangements shape social outcomes. The United States and Nigeria offer an especially useful comparison because they represent contrasting economic environments with differing historical experiences, governance systems, and development priorities.

In recent years, taxation and the human development index have become especially relevant in global discussions about economic management and social progress. The business environment in many countries has grown more complex, with enterprises interacting with multiple layers of regulation, shifting consumer behaviour, technological change, and rising expectations around social responsibility. Within such an environment, taxation influences decisions regarding investment, job creation, innovation, and long term planning (Ochuka & Ezenwafor, 2024). Tax rates, tax incentives, and the transparency of tax administration can determine how attractive a country is for domestic and foreign businesses (Ayano, 2022). At the same time, governments rely on tax revenue to maintain the stability of institutions that support economic activity, including legal systems, infrastructure, public safety, and education. The human development index has become an essential reference point because it shows whether economic activity translates into improved living conditions. Countries with strong business environments often invest in education and health care, which in turn creates a skilled and productive workforce that attracts further business activity and fuels economic expansion. When tax systems function well, they support the institutions that raise human development outcomes, while weaknesses in revenue generation or mismanagement can limit a country's ability to make long term social investments (Isaac et al., 2021). Understanding this connection is especially important today when global competition, demographic changes, and rising inequality place pressure on governments to design fiscal systems that both support business growth and improve human welfare.

The influence of taxation on the human development index becomes clearer when comparing countries with different levels of economic advancement, such as the United States of America and Nigeria. The United States has a long established tax system that collects substantial revenue from personal income, corporate income, payroll contributions, and other sources (Kalaš et al., 2017). This revenue base enables consistent spending on public education, health programs, scientific research, infrastructure, and social protection. These investments contribute to relatively high life expectancy, wide access to schooling, and higher income levels, all of which strengthen the country's human development outcomes. Although debates persist about the fairness and efficiency of the tax structure, the overall system supports institutions that help sustain human wellbeing (Ochuka & Ezenwafor, 2024).

Nigeria operates within a very different context. Despite its large population and significant natural resources, the country has faced long standing challenges in tax collection, administrative efficiency, and equitable distribution of revenue (Lawal et al., 2024). Heavy reliance on oil income has historically limited the development of a broad and efficient tax base. As a result, funding for education, health care, and social programs has often been inconsistent. These gaps affect life expectancy, school enrollment, and income levels, which in turn influence the country's human development index. Comparing both countries shows how the design and management of taxation can either expand or restrict a nation's ability to improve the quality of life of its citizens.

A well functioning tax system should provide a stable source of public revenue that allows a government to finance education, health care, infrastructure, and social services in a consistent and dependable manner (Monday et al., 2022). When revenue collection is broad, fair, and efficiently administered, a country is better placed to offer schools that produce skilled citizens, health facilities that prevent avoidable deaths, and social programs that protect vulnerable groups. Such a system strengthens human welfare and creates an enabling environment where people can live longer, learn more, and earn a decent income. In countries where taxation contributes meaningfully to public spending, improvements in life expectancy, literacy, and income distribution tend to follow. This type of environment makes it possible for human development to grow steadily over time.

However, Nigeria still struggles to build and sustain this kind of tax system. In Nigeria, revenue mobilization is weakened by narrow tax bases, administrative inefficiencies, widespread non compliance, and overdependence on volatile sources of income (Kontagora & Dozie, 2025). Public funds may not be collected in sufficient amounts, and in some cases the funds that are collected are not always used effectively to improve the living conditions of citizens. Large differences can be found between countries with long established tax structures and those working to strengthen their fiscal capacity. These differences affect the quantity and quality of public services available to the population. While United States provides strong educational systems, reliable health services, and adequate social support that justifies its tax revenue (Olaluwoye, 2024), Nigeria encounters persistent gaps that limit improvements in welfare across generations (Okoh & Ofor, 2024).

The consequences of these gaps are far reaching. When taxation does not provide enough revenue to support key public services, progress in human development slows and sometimes declines. Poor funding for schools leads to lower levels of literacy and limited skill development, which restricts opportunities for young people and weakens the workforce. Insufficient investment in health care increases preventable illness and reduces life expectancy. When incomes remain low and social protection is inconsistent, communities face growing inequality and limited upward mobility. These problems create a cycle where weak public services hinder economic productivity, which in turn further reduces government revenue. Over time, the inability of the tax system to support human development undermines social stability, discourages investment, and prolongs poverty (Oyegun, 2025). Hence, the main objective of the study is to compare the influence of taxation on human development outcomes in the United States of America and Nigeria.

Although numerous studies have examined the relationship between taxation and human development within individual countries, a clear gap exists in comparative analyses between nations at different levels of economic development. Research in Nigeria by Oyegun (2025), Ochuka and Ezenwafor (2024), Ayano (2022), Monday et al. (2022), Ibadin and Oluwatuyi (2021), Isaac et al. (2021), and Etim et al. (2020) has focused on how various tax components influence the Human Development Index, often reporting mixed effects depending on the type of tax. In the United States, studies by Olaluwoye (2024), Kalaš et al. (2017), and Claveria (2025) have examined how taxation impacts economic growth or broader development outcomes, highlighting generally positive effects of certain tax types. However, none of these studies have directly compared the influence of taxation on human development between a developed economy like the United States of America (U.S.A.) and a developing economy such as Nigeria over the same period. This absence of cross-country comparison limits understanding of how differences in fiscal policies, institutional effectiveness, and revenue utilization affect the translation of tax revenue into improvements in human development. By comparing both countries from 2004 to 2024, this study addresses this gap and provides hints into the relative magnitude and efficiency of taxation's effect on human development in distinct economic contexts.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Taxation

Taxation refers to the process through which a government collects compulsory payments from individuals, businesses, and other entities in order to finance public activities (Oyegun, 2025). It represents a long established arrangement

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in which members of a society contribute a portion of their income or wealth so that the state can provide services that benefit everyone. It also serves as a tool through which governments influence economic behavior, guide national priorities, and maintain stable public institutions (Ochuka & Ezenwafor, 2024). In many societies, taxation forms the backbone of public finance because it creates a steady flow of resources that supports national development. A fuller understanding of taxation recognizes it as more than the collection of money. It reflects an ongoing relationship between the state and its people. When the system functions well, citizens accept these payments because they see the value of public services such as roads, schools, hospitals, and security. Taxation also shapes the way resources are shared across regions and social groups. A well organized system can reduce inequality by channeling revenue toward communities that need additional support (Dianov et al., 2022). At the same time, businesses rely on predictable tax arrangements to plan their activities and make long term investments.

Taxation also carries a social dimension because it signals the responsibility individuals and organizations share in maintaining the collective well being of their society (Olaluwoye, 2024). In this sense, it supports the idea that public goods should be funded by contributions from those who benefit from them. Over time, stable tax policies help build trust, strengthen institutions, and support an environment where both economic and social progress can flourish (Oyegun, 2025). Although tax systems differ widely across countries, they all serve the essential purpose of supplying governments with the resources required to govern, provide services, and pursue national development goals (Etim et al., 2020). Through this role, taxation remains central to the stability and advancement of any modern state.

2.1.2 Human Development Index

The human development index is a widely used yardstick created to assess how well a country supports the overall well being of its population (Oyegun, 2025). It brings together important aspects of life such as longevity, knowledge, and the capacity to earn a decent income (Obianuju & Nworie, 2024). These areas reflect the idea that progress cannot be captured solely by economic activity, but must also consider the quality of life experienced by people. By combining these indicators into a single measure, it becomes possible to compare countries and observe changes over time. The human development index grew from the understanding that people's lives should be shaped by opportunity and freedom rather than only by the output of their economy (Ibadin & Oluwatuyi, 2021). A country may generate considerable wealth, yet its people may still face poor health conditions, restricted access to learning, or limited earning prospects. This index highlights such differences by offering a more complete picture of national progress. It calls attention to whether citizens enjoy long life spans, whether learning is accessible, and whether incomes allow for a dignified standard of living (Isaac et al., 2021).

In practice, the human development index helps governments, researchers, and international bodies judge how well public policies are improving everyday life. It offers a way to monitor shifts in living conditions and to identify areas where additional effort may be needed. For countries working to expand opportunities for their populations, this measure serves as a reminder that economic growth alone is not enough. Improvements in schooling, health care, and income security are also essential to long term national progress. The index has gained global acceptance because it emphasizes people rather than the size of national economies. It presents a view of development that places human welfare at the center of public debate (Oyegun, 2025). Through this approach, it encourages countries to focus on creating conditions that allow individuals to live long lives, acquire knowledge, and pursue livelihoods that sustain them.

2.2 Theoretical Framework and Development of Research Hypothesis

Welfare Economics Theory emerged as a branch of economics in the late 19th and early 20th centuries, gaining significant development through the works of economists such as Arthur Cecil Pigou in the 1920s (Edenhofer et al., 2021). Pigou focused on the relationship between economic activity and social welfare, emphasizing that government intervention could correct market failures and promote societal well-being. Over time, the theory evolved to examine how resources could be allocated in ways that improve the overall welfare of a population, rather than simply maximizing output or profit. It became a foundation for understanding public policy, taxation, and social programs in the context of promoting equitable outcomes for citizens.

The central postulations of Welfare Economics Theory focus on the idea that economic decisions should be judged by their impact on collective welfare (Aguenane, 2019). It holds that markets do not always allocate resources efficiently or fairly, and that government action is sometimes necessary to achieve optimal social outcomes. The theory emphasizes the distribution of wealth and the provision of public goods as essential mechanisms for enhancing societal welfare. It also distinguishes between efficiency, which concerns the optimal use of resources, and equity, which addresses the fairness of outcomes among members of society (Aldrich, 2023). These postulates provide a framework for analyzing how fiscal policies, particularly taxation, can influence the living standards and well being of citizens.

The theory is particularly relevant to a study comparing taxation and human development between the United States and Nigeria because it provides a lens through which the effects of tax policies on societal welfare can be examined. By assessing how governments collect and use tax revenue to fund education, health, and other public services, the theory helps explain the variations in human development outcomes between countries. It suggests that differences in taxation systems and public spending priorities can directly impact the quality of life of citizens. In this context, Welfare Economics Theory supports an analysis of how fiscal mechanisms

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contribute to improving or limiting human development, allowing for a comparative understanding of the role of taxation in shaping social progress in different national environments. The study hypothesises the following:

$\mathbf{H_0}$**:** There is no difference in the influence of taxation on the human development index between the United States and Nigeria.

$\mathbf{H_1}$**:** There is a difference in the influence of taxation on the human development index between the United States and Nigeria.

2.3 Empirical Review

Oyegun (2025) studied the impact of taxation on the Human Development Index (HDI) in Nigeria between 1990 and 2024. Using the error correction model, the research assessed both short-run and long-run effects of different tax components on human development. The study found that Company Income Tax and Petroleum Profit Tax had negative and significant effects on the HDI in the short run, while Value Added Tax showed a positive and significant influence. Customs and Excise Duties had a negative but insignificant effect. In the long run, Petroleum Profit Tax and Customs and Excise Duties continued to negatively affect HDI, while Value Added Tax remained positively and significantly linked to human development. Company Income Tax showed a negative but insignificant long-run effect.

Claveria (2025) investigated the connection between fiscal redistribution and human development in twelve Latin American countries from 2000 to 2021. Using quantile regression, the study explored how redistribution affected different levels of development. Results indicated that higher redistribution generally increased development, though its effect weakened in the upper half of the distribution. The study also examined taxes and government transfers across health, education, and economic dimensions, finding significant relationships at both low and high levels of development. When controlling for socio-economic factors, the positive link between redistribution and development was reduced.

Ochuka and Ezenwafor (2024) examined the effect of taxation on sustainable development in Nigeria, focusing on Petroleum Profit Tax, Company Income Tax, Value Added Tax, and Customs and Excise Duties as measures of taxation. Using time series data from 2000 to 2023 sourced from FIRS, CBN bulletins, World Bank reports, and the National Bureau of Statistics, they applied an ex-post facto research design and tested hypotheses with ordinary least square regression at 5%. The results showed that all tax components jointly influenced the Human Development Index significantly. Specifically, Petroleum Profit Tax and Customs and Excise Duties had negative effects, while Company Income Tax and Value Added Tax positively and significantly affected human development.

Olaluwoye (2024) analyzed taxation and economic growth in the **United States of America** from 2004 to 2023. Using a multiple regression model, gross domestic product was the dependent variable, while different tax sources such as business income, individual income, employment, estate, gift, and excise taxes were independent variables. Findings revealed that individual income, employment, and estate taxes significantly affected economic growth, whereas business income, gift, and excise taxes showed no significant effect over the study period.

Ayano (2022) examined the impact of Company Income Tax, Education Tax, and Petroleum Profit Tax on health, education, and standard of living in Nigeria between 2000 and 2020. Using Augmented Dickey-Fuller tests, Bound Co-integration tests, and ARDL models, the study found mixed results. Petroleum Profit Tax had a positive effect on life expectancy and school enrollment, while Company Income Tax had a negative effect on life expectancy but positively influenced tertiary enrollment. Education Tax negatively affected school enrollment but positively influenced per capita income.

Monday et al. (2022) studied whether direct taxes in Nigeria were buoyant and their relationship with human capital development from 1980 to 2017. Using ex-post facto research design and time series data from FIRS and NBS, they found that petroleum profit and company income taxes were generally inefficient. Petroleum Profit Tax showed a positive but insignificant link to human development, while Company Income Tax had a positive and significant effect.

Ibadin and Oluwatuyi (2021) analyzed the effect of Company Income Tax, Petroleum Profit Tax, Value Added Tax, and Customs and Excise Duties on economic growth and the Human Development Index in Nigeria from 1994 to 2017. Using ADF unit root tests, Johansen co-integration, and ECM, they found that tax revenue had a positive and significant effect on HDI, though the impact was smaller than on real GDP.

Isaac et al. (2021) investigated how taxation affected GDP and the Human Development Index in Nigeria using secondary data from the Central Bank, World Bank, and FIRS. Using ex-post facto research design and econometric tests, the study found that tax revenue influenced both GDP and HDI, highlighting the importance of improving personal income tax collection to enhance government revenue.

Etim et al. (2020) explored whether taxation drives human development in Nigeria between 1985 and 2018, using data from CBN, FIRS, and UNDP. Results showed that Company Income Tax negatively and significantly affected HDI, Value Added Tax had a positive and significant effect, while Petroleum Profit Tax and Personal Income Tax had a positive but insignificant relationship. The study concluded that broadening the tax base and closing administrative loopholes could enhance human development outcomes.

Kalaš et al. (2017) examined taxes and economic growth in the **United States of America** from 1996 to 2016. Using regression models and diagnostic tests, the study found that corporate income tax and tax revenue growth were positively correlated with GDP growth. Social security contributions had a significant effect, while personal income tax and corporate income tax had weaker or insignificant effects on economic growth.

3.0 METHODOLOGY

This study adopted an ex-post facto research design, which was appropriate for analyzing existing data to examine the relationship between taxation and human development outcomes. The design allowed for the investigation of the effects of tax policies on the human development index over a period of time without manipulating any variables. By relying on historical data, the study explored patterns, trends, and relationships as they naturally occurred in both the United States (U.S.) and Nigeria, providing a basis for comparative analysis.

The study relied exclusively on secondary data obtained from reputable sources. For Nigeria, data on tax revenue were collected from reports published by the Federal Inland Revenue Service, while for both countries, human development indicators were sourced from the World Bank’s Development Indicators database. The study focused on a twenty-year period, covering 2004 to 2024, to capture long-term trends and provide a robust basis for analysis. Using official reports and standardized international data ensured reliability, consistency, and comparability across the two countries.

The relationship between taxation and human development was examined using a simple regression model expressed as:

$$HDI = \alpha + \beta(TR) + \mu \qquad \text{eqi}$$

Where;

HDI represented the human development index,

TR represented total tax revenue, α was the intercept,

β was the coefficient measuring the effect of taxation on HDI,

μ was the error term capturing unexplained variation.

Hypotheses were tested using the fully modified least square (FMOLS) regression technique at a 5% level of significance. FMOLS was particularly suitable for dealing with potential issues of endogeneity and serial correlation in time series data, ensuring unbiased and consistent estimates of the long-term relationship between taxation and human development. This approach allowed for a rigorous comparative analysis of how taxation influenced human development outcomes in the United States of America and Nigeria over the selected period.

4.0 DATA ANALYSIS

4.1 DESCRIPTIVE ANALYSIS

Table 4.1 Descriptive Statistics

	HDI_NIG	HDI_USA	TAX_NIG (₦' Billion)	TAX_USA ($' Billion)
Mean	0.512524	0.923286	4544.713	2033.512
Median	0.510000	0.925000	3082.400	1919.243
Maximum	0.560000	0.938000	21702.74	4620.400
Minimum	0.460000	0.905000	565.7000	1144.277
Std. Dev.	0.028941	0.009768	4947.373	816.6242
Skewness	-0.076307	-0.211323	2.282397	1.665393
Kurtosis	1.876864	2.106373	8.101443	5.905705
Jarque-Bera	1.124135	0.855049	41.00431	17.09510
Probability	0.570029	0.652121	0.000000	0.000194
Sum	10.76300	19.38900	95438.98	42703.75
Sum Sq. Dev.	0.016751	0.001908	4.90E+08	13337502
Observations	21	21	21	21

Source: Eviews 10 Output (2025)

The human development index for Nigeria (HDI_NIG) in Table 4.1 shows a mean value of 0.513, indicating that on average, human development in Nigeria over the study period was slightly above the midpoint of the HDI scale. The maximum value recorded was 0.560, while the minimum was 0.460, suggesting that there was moderate variation in human development levels across the years. The standard deviation of 0.029 confirms this limited dispersion around the mean. The skewness of -0.076 implies that the distribution of HDI in Nigeria was nearly symmetrical, with a slight tilt toward lower values. The kurtosis value of 1.877 indicates a flatter distribution compared to a normal distribution, showing relatively fewer extreme values. The probability of the Jarque-Bera statistic at 0.570 suggests that HDI_NIG is normally distributed, meaning that its variations are relatively stable and consistent over time.

For the human development index in the United States (HDI_USA), Table 4.1 indicates a mean of 0.923, reflecting consistently high levels of human development throughout the observed period. The maximum and minimum values are 0.938 and 0.905, respectively, showing very little variation over time. This is further supported by the standard deviation of 0.0098, which points to a highly stable HDI in the United States. The negative skewness of -0.211 suggests a slight concentration of values toward the higher end of the scale. Kurtosis of 2.106 indicates that the distribution is close to normal, with no extreme outliers. The Jarque-Bera probability of 0.652 confirms that HDI_USA follows a normal distribution, highlighting the consistent human development performance in the country.

The tax revenue of Nigeria (TAX_NIG) in Table 4.1 presents a mean value of ₦45.447 trillion, indicating the average annual revenue collected during the period. The maximum of ₦217.0274 trillion and the minimum of ₦5.657 trillion show a wide range, pointing to substantial variability in tax collection over the years. This is reflected in the high standard deviation of ₦49.47373 trillion, indicating that tax revenue fluctuated significantly. The skewness of 2.282 indicates a highly right-skewed distribution, meaning that there were occasional years with exceptionally high revenue relative to the mean. The kurtosis of 8.101 shows a peaked distribution with heavy tails, reflecting extreme values in revenue collection. The Jarque-Bera probability of 0.000 confirms non-normality, suggesting that tax revenue in Nigeria was irregular and prone to outliers.

The tax revenue of the United States (TAX_USA) has a mean of $20.335 trillion as shown in Table 4.1, indicating the average annual revenue over the observed period. The maximum value of $46.204 trillion and minimum of $11.44277 trillion suggest moderate variation in revenue levels. The standard deviation of $8.166 trillion points to some fluctuations around the mean, though less extreme than Nigeria's. A skewness of 1.665 indicates a right-skewed distribution, suggesting occasional higher revenue years above the mean. The kurtosis of 5.906 reflects a leptokurtic distribution with heavier tails, highlighting some extreme revenue observations. The Jarque-Bera probability of 0.000194 confirms that TAX_USA is not normally distributed, showing that while generally stable, U.S. tax revenue experienced occasional spikes.

4.2 Test of Hypothesis

H_0: There is no difference in the influence of taxation on the human development index between the United States and Nigeria.

H_1: There is a difference in the influence of taxation on the human development index between the United States and Nigeria.

Table 4.2 Regression Analysis - Nigeria

Dependent Variable: HDI_NIG
Method: Fully Modified Least Squares (FMOLS)
Date: 11/17/25 Time: 02:05
Sample (adjusted): 2005 2024
Included observations: 20 after adjustments
Cointegrating equation deterministics: C
Long-run covariance estimate (Bartlett kernel, Newey-West fixed bandwidth
= 3.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TAX_NIG	0.00000412	0.00000127	3.249055	0.0045
C	0.495225	0.008608	57.52978	0.0000
R-squared	0.442494	Mean dependent var		0.515150
Adjusted R-squared	0.411521	S.D. dependent var		0.027003
S.E. of regression	0.020715	Sum squared resid		0.007724
Long-run variance	0.000759			

Source: Eviews 10 Output (2025)

Table 4.2 Regression Analysis – United States of America

Dependent Variable: HDI_USA
Method: Fully Modified Least Squares (FMOLS)
Date: 11/17/25 Time: 02:06
Sample (adjusted): 2005 2024
Included observations: 20 after adjustments
Cointegrating equation deterministics: C
Long-run covariance estimate (Bartlett kernel, Newey-West fixed bandwidth
= 3.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TAX_USA	0.00000940	0.00000257	3.657328	0.0018
C	0.905037	0.005715	158.3564	0.0000
R-squared	0.463184	Mean dependent var		0.924200
Adjusted R-squared	0.433361	S.D. dependent var		0.009053
S.E. of regression	0.006815	Sum squared resid		0.000836
Long-run variance	8.29E-05			

Source: Eviews 10 Output (2025)

The regression results in Table 4.2 show that taxation has a positive and significant effect on human development in both Nigeria and the United States of America. For Nigeria, the coefficient of TAX_NIG is 0.00000412 with a probability value of 0.0045, indicating that tax revenue positively contributes to the Human Development Index and that the effect is statistically significant at the 5% level. The constant term of 0.495225 suggests a baseline HDI even in the absence of tax influence, and the R-squared of 0.442 indicates that about 44% of the variation in Nigeria's HDI can be explained by taxation alone. While taxation positively influences human development, the relatively small coefficient reflects a weaker effect, suggesting that other factors may play a larger role in shaping HDI in Nigeria.

For the United States, Table 4.2 shows that the coefficient of TAX_USA is 0.00000940 with a probability of 0.0018, indicating a stronger positive effect on human development compared to Nigeria and statistical significance at the 5% level. The constant of 0.905037 reflects a high baseline HDI, even without considering taxation, while the R-squared of 0.463 shows that taxation explains about 46% of the variation in HDI. Comparing both countries, it is clear that taxation has a more substantial and consistent impact on human development in the United States of America than in Nigeria. This supports the rejection of the null hypothesis, as there is a clear difference in the influence of taxation on HDI between the two countries, highlighting how differences in tax systems, collection efficiency, and fiscal management can affect human development outcomes. The study therefore revealed that taxation had a more positive effect on human development in the United States, while the positive effect was weaker in Nigeria.

4.3 Discussion of Finding

The finding that taxation had a more positive effect on human development in the United States can be attributed to the efficiency and structure of the U.S. tax system, which allows the government to mobilize resources effectively for social investments. The FMOLS results show a coefficient of 0.00000940 with high significance, indicating that increases in tax revenue reliably translate into improvements in human development outcomes. This result aligns with Olaluwoye (2024), who found that individual income, employment, and estate taxes significantly contributed to economic growth in the United States, suggesting that tax revenues were efficiently utilized to support public welfare. Similarly, Kalaš et al. (2017) reported that U.S. tax revenue growth, particularly through social security contributions, positively influenced GDP, which indirectly supports human development through higher public spending capacity. Claveria (2025) also emphasized that well-structured fiscal redistribution, including taxes and government transfers, strengthens human development outcomes, demonstrating that the **U.S.** system's ability to translate taxation into social welfare aligns with these findings. The strong and consistent positive effect in the **U.S.** can thus be linked to the combination of a broad tax base, efficient collection mechanisms, and robust public institutions that ensure revenue supports education, health, and income-enhancing services.

In contrast, the weaker positive effect of taxation on human development in Nigeria reflects structural inefficiencies, limited tax compliance, and revenue management challenges. The FMOLS coefficient of 0.00000412, while positive and significant, is much smaller than that of the United States, highlighting that tax revenue contributes less effectively to HDI improvements. This finding is consistent with Oyegun (2025), who reported that some Nigerian taxes, such as Company Income Tax and Petroleum Profit Tax, had negative effects on human development in the short run, while only Value Added Tax had a consistent positive effect. Ochuka and Ezenwafor (2024) similarly found mixed impacts of different tax types on Nigeria's HDI, suggesting uneven utilization of tax resources. Etim et al. (2020) also noted that broadening the tax base and improving administration could enhance taxation's effect on human development, implying that current weaknesses in tax collection and policy design reduce the impact. These studies collectively indicate that while taxation in Nigeria does positively influence human development, structural and institutional constraints limit its overall effectiveness compared to the more efficient system in the United States of America (U.S.A.).

5.0 Conclusion and Recommendation

5.1 Conclusion

The observed differences in the effect of taxation on human development between the United States of America and Nigeria carry significant consequences for understanding the role of fiscal policy in shaping societal well-being. In contexts where taxation translates more efficiently into improvements in education, health, and income, as in the United States, it highlights the importance of effective revenue mobilization and the strategic allocation of public resources in enhancing human capacity and overall quality of life. The varying magnitude of impact suggests that structural factors, including administrative efficiency, compliance levels, and institutional capacity, can influence how tax revenue contributes to social progress. This also points to the interplay between government revenue systems and the broader socioeconomic environment, highlighting how well-designed fiscal policies can reinforce development outcomes by creating a sustainable framework for public investment. Therefore, **America** should strongly sustain and perfect its relevant institutions for continuous Sound HDI not dropping the ball at any point.

Conversely, where the effect is weaker, as observed in Nigeria, the results signal potential gaps in the capacity of taxation to fully support social and economic development, which may manifest in slower improvements in education, health, and living standards. The differential outcomes between countries reveal that the same fiscal instrument can generate markedly different outcomes depending on the institutional and governance context. Moreover, the relationship between taxation and human development emphasizes the need to consider not just the amount of revenue collected, but also the mechanisms through which resources are deployed to promote human welfare. Over time, these dynamics affect not only the trajectory of human development indicators but also the broader socioeconomic stability, reflecting how taxation intersects with development goals, public trust, and societal resilience. The findings also illustrate the potential for taxation to either reinforce existing disparities or serve as a tool for advancing equitable growth, demonstrating that revenue generation alone is insufficient without a functional system that effectively channels funds into areas that directly enhance human capabilities and quality of life.

5.2 Recommendations

Based on the finding that taxation had a more positive effect on human development in the United States of America, it is recommended that the U.S. Department of the Treasury continue to maintain and enhance the efficiency of its tax collection and administration systems. By ensuring that tax revenues are effectively mobilized and allocated to key social sectors such as education, healthcare, and social welfare programs, the government can sustain the positive impact of taxation on human development. Strengthening mechanisms that link revenue collection directly to public investment programs will further reinforce the country's capacity to support high standards of living and overall human development outcomes.

Regarding the weaker positive effect of taxation on human development in Nigeria, it is recommended that the Federal Inland Revenue Service (FIRS) implement strategies to improve tax compliance and expand the tax base. This could involve enhancing taxpayer education, simplifying filing procedures, and using technology to reduce leakages and inefficiencies in revenue collection. By improving the effectiveness of tax administration and ensuring that collected revenue is channeled efficiently into education, healthcare, and social development programs, the FIRS can increase the contribution of taxation to human development, helping to bridge the gap with more developed economies and support sustainable improvements in citizens' well-being.

5.3 Contribution to Knowledge

This study contributes to the literature by directly comparing the influence of taxation on human development between a developed economy, the United States, and a developing economy, Nigeria, over the period 2004 to 2024. While previous research in Nigeria by Oyegun (2025), Ochuka and Ezenwafor (2024), Ayano (2022), Monday et al. (2022), Ibadin and Oluwatuyi (2021), Isaac et al. (2021), and Etim et al. (2020) focused on the effects of specific tax components on the Human Development Index, and studies in the United States by Olaluwoye (2024), Kalaš et al. (2017), and Claveria (2025) explored taxation's impact on economic growth or development more broadly, none examined the relative impact of taxation across countries with different economic and institutional contexts. By providing a comparative analysis, this study offers a clearer understanding of how fiscal policies, revenue mobilization, and institutional efficiency influence the extent to which tax revenue translates into improvements in human development, highlighting differences in magnitude and effectiveness between a developed and a developing economy.

5.4 Limitations of the Study and Suggestion for Further Studies

The study was limited by its reliance on secondary data, which may have inconsistencies or gaps that could affect the accuracy of the results. Some data from the Federal Inland Revenue Service and the World Bank Development Indicators were not always complete for every year, and differences in how data were collected in the United States of America and Nigeria could influence comparisons. The study also focused only on taxation and did not account for other factors that might affect human development, such as foreign aid, inflation, or government policies in other sectors. These limitations may have affected the precision of the findings.

Future studies could expand on this research by including other factors that influence human development, such as government spendings, foreign aid, or economic shocks. Researchers could also consider using primary data, such as surveys or interviews, to get more detailed information on how taxation affects citizens directly. Studies could focus on more countries to provide a broader comparison or examine specific types of taxes, such as corporate or value-added taxes, to see which has the strongest impact. This would give a more complete picture of the relationship between taxation and human development.

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APPENDIX A DATA PRESENTATION

Years	HDI_USA	HDI_Nig	TAX_Nig **(₦' Billion)**	TAX_USA **($' Billion)**
2004	.91	.46	565.70	1165.21
2005	.91	.47	785.10	1392.81
2006	.91	.48	677.50	1562.61
2007	.91	.48	1264.60	1634.13
2008	.91	.49	1336.00	1517.78
2009	.92	.49	1652.70	1144.28
2010	.92	.50	1907.60	1288.68
2011	.92	.51	2237.90	1488.05
2012	.92	.51	2628.80	1587.02
2013	.93	.52	2950.60	1765.76
2014	.93	.53	3275.00	1919.24
2015	.93	.53	3082.40	2045.90
2016	.93	.52	3307.46	2041.18
2017	.93	.50	4027.95	2256.15
2018	.93	.49	5320.89	2051.10
2019	.94	.54	5261.92	2129.18
2020	.93	.54	4616.60	2168.17
2021	.92	.55	6320.50	2698.39
2022	.93	.56	10179.35	3276.58
2023	.94	.55	12337.67	2951.12
2024	.94	.55	21702.74	4620.40

Source: CBN, FIRS, NBS Bulletins, 2001-2024