



# EFFECT OF CONTRIBUTORY PENSION SCHEME ON HUMAN DEVELOPMENT INDEX IN NIGERIA

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**Abstract:** The primary goal of this research was to determine how Nigeria's contributory pension system affected the country's Human Development Index. The National Pension Commission Annual Report and the Central Bank Statistics Bulletin were used to collect the data for this ex-post-facto study's analysis. A model was developed based on empirical and theoretical reviews to accomplish this goal. The dependent variable in the model was the Human Development Index, and the independent variables were private sector pension funds, public sector pension funds, and total pension funds. The Fully Modified Least Squares (FMOLS) model was used in this study to examine the data. The results of this study showed that total pension funds, private sector pension funds, and public sector pension funds all had positive and significant effects on the human development index within the parameters of this study, with p-values of 0.0000, 0.0000, and 0.0031, respectively. The inference result led to the conclusion that Nigeria's economic progress had been positively and significantly impacted by the contributory pension program. Providing timely pension payments to beneficiaries in the public and private sectors will stimulate economic growth by introducing cash into the economy. The researcher concludes from the foregoing that the government should ensure that pension payments are made on time, in accordance with the Pension Reform Act of 2014; if this is accomplished, the human development index would be enhanced through an increase in the citizens' standard of living.

**Keywords:** Contributory Pension Scheme, Pension Reforms, Private Sector Funds, Public Sector Funds, Total Pension Funds, Human Development Index

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## **1. INTRODUCTION**

Every government's success depends on the country's economy expanding. Hence, every government should prioritize establishing a rapid and steady rate of economic growth. Savings play a significant role in economic progress. Money set aside through banks or any other financial organization that offers the option is referred to as savings. Employees and employers in the public and commercial sectors are required to collectively contribute a minimum of 18% of an employee's monthly salary into the employee Retirement Savings Account (RSA), from which employees will receive retirement benefits. Under this program, national savings have increased.

The Contributory Pension Scheme's net asset value of pension assets as of December 2017 was \$7.5 trillion. This is in contrast to the predicted \$2 trillion fiscal pension deficit for the federal government as of June 2004. The Federal Government of Nigeria (FGN) Securities accounted for 70.42% of the N7.5 trillion net assets worth as of 2017, followed by ordinary shares (10.33%), local money market securities (9.08%), state government securities (2.03%), and real estate properties (2.71%). Supranational bonds, mutual funds, and specialty funds were further investments made by the fund (in infrastructure and private equity (Odia & Okoye, 2012).

Pensions are payments made to older workers after they are released from active duty to help them maintain their standard of living. A pension is a tool to guarantee that a worker may continue to live on a steady income after retirement. Traditionally, pensions have been paid through defined benefit (DB) pension plans. For a while, the Defined Benefit (DB) pension was effective around the world, but it eventually lost its viability due to issues including an ageing population and low productivity. Moreover, Lachman (2013) noted that governments and companies switched from the defined benefit (DB) pension system to the contributory pension scheme due to the rising lifespan of humans as well as other economic issues. Similar to this, Meng and Pfau (2010) noted that declining productivity and rising longevity undermined the viability of the previous system.

### **1.1. Statement of the Problem**

In order to address the shortcomings of the previous system, the new Pension Reform Act was created in 2004 and is based on a defined contribution scheme. The 2004 Act has undergone numerous modifications throughout the many years since it was established. These include the Provisions Act of 2012,

which examined the retirement age and benefits of university professors; the Pension Reform Act of 2014; and the Pension Reform Amendment Act of 2011, which exempts the personnel of the military and security agencies from the Contributory Pension Scheme (CPS), as well as the universities (other). This included the Third Alteration Act, which altered the 1999 Constitution by giving the National Industrial Court authority over pension disputes (FGN, 2014). However, a significant question is whether the new pension laws have been successful in addressing the issues related to retirement plans in the past. Some have specifically questioned whether the Contributory Pension Act of 2004 has been able to address the issues of economic development, corruption, poor pension fund administration, embezzlement, insufficient pension fund build-up, poor monitoring and evaluation, and the overall institutional failure that characterized pension schemes in Nigeria. The financial security of workers after retirement faces significant challenges as a result of this circumstance.

It is obvious that the operation of the funded pension program in Nigeria has been hindered, as it faces several difficulties that endanger its prospects due to weak institutions, corruption, social inequality, and insecurity. Despite the change from a defined benefit to a contributory pension system, a number of problems have emerged, such as money misappropriation, which raises questions about whether the program is actually boosting the nation's economy. This question has been addressed by academics. For instance, research conducted by Edogbanya (2013), Fapohunda (2013), Eme and Sam (2011), and Dostal (2010) revealed a positive influence of Nigeria's contributory pension system on economic development. The impact of pension funds on the economy of Nigeria generally produces mixed results. This research is also ready to provide independent proof for this claim using current data and actual evidence.

## **1.2. Objectives of the Study**

This study's main goal is:

1. to find out how Nigeria's contributory pension system affects the country's human development index. Assess the effect of private sector pension funds on the human development index in Nigeria, among other particular goals.
2. Determine how Nigeria's human development index is impacted by public sector pension funds.
3. Assess the effect of Nigeria's total pension fund on the country's human development index.

### **1.3. Hypotheses of the Study**

The following null hypotheses have been developed with a view to achieving the research objectives:

- H<sub>0</sub><sub>1</sub>: There is no significant impact of private sector pension funds on the human development index in Nigeria.
- H<sub>0</sub><sub>2</sub>: Public-sector pension funds have no significant impact on the human development index in Nigeria.
- H<sub>0</sub><sub>3</sub>: There is no significant impact of the total pension fund on the human development index in Nigeria.

## **2. AN OVERVIEW OF PENSION SCHEME IN NIGERIA**

When an employee has worked for a certain amount of time, is deemed too old or ill to work, or has reached the legal retirement age, a government agency or business will pay them a pension (Imhanlahmi & Idolor, 2011). According to Jat and Jugu (2015), a pension is a mechanism whereby an individual contributes a percentage of their wages earned over their working lives to a pension plan.

The assumption that if employees' future requirements are assured and faith in the contributory pension scheme is restored, they will be more driven to positively contribute to the production of the business, has led companies to place a higher emphasis on pension and gratuity. According to Kreem and Kreem (2010), a pension is a one-time payment made to an employee when he leaves active duty. According to the study, pension plans might be single or multiemployer, insured or trusteed, group or individual, with fixed or variable benefits, and contributory or non-contributory. According to Mesika and Ibiwoye (2012), and Njuguna (2010), there are four different types of pensions in Nigeria. This implies that there are retirement benefits that are often given to employees who retire after a predetermined amount of quality service. Hence, a pension can be described as a fixed, recurring sum paid to a person after retirement upon reaching retirement age, upon choosing to leave the workforce before their retirement date, or on the basis of their health (Sule & Ezugwu, 2009). This implies that pensions give retirees the notion that life continues after they leave the military.

### **2.1. Evolution of the Nigerian Pension System**

The idea of a pension might be considered as old as man and the working environment, given the logic of the Nigerian pension system. Scholars have

claimed that even in prehistoric times, men were inclined to save something—in kind or money, but largely in kind—to cover unforeseen expenses. This is supported by historical accounts. According to Nnaanta and Ugwu (2011), old age was also a part of the rainy day. Additionally, in modern times, it is typically understood as the amount of money paid on a regular basis by employers to former workers who retired from their employment, typically after reaching a set age limit in service or for other reasons such as sickness, widowhood, or people with disabilities, or by former employers or financial institutions to retired people like Jat and Jugu (2015). According to Nnaanta and Ugwu (2011), the Nigerian pension system is largely a by product of British colonialism, which was originally implemented in the colony of Lagos in 1861 for the few white colonial lords and laborers. The pension was created at the time to provide a reasonably standard retirement age with considerable provisions for the intended recipients' voluntary early retirement (Lachman, 2013).

Up until 1960, when Nigeria won its independence and the pension law started to alter, the previous pension system was in place. The Pension Ordinance of 1951, which took effect in Nigeria as of January 1946, was the country's first significant piece of law (Njuguna, 2010 ). The statute gave the Governor-General the authority to award pensions and gratuities with the consent of the British government's secretary of state for colonial affairs. The fixed vesting time was 10 years of service. As was already established, since the first pension ordinance, the pension plan in the public sector has gone through several stages of development. For instance, the basic pension decree 102 of 1979 established the civil service pension plan, the military fiat in 1977 established the local government pension plan, and the armed forces pension plan was established by decree 103 of 1979 with retroactive effect to April 1974. Judges' pension rights were likewise covered by Decree No. 5 of 1958, as amended by Decree No. 5 of 1988. Another important milestone in the history of the Nigerian pension system was Decree No. 75 of 1993, which retroactively applied to the police and other agencies pension programs (Lachman, 2013).

## **2.2. Contributory Pension Scheme of 2004**

The 2004 Pension Reform Act represents a paradigm shift from the 1979 Pension Act. Employers and employees must each contribute 7.5% of each employee's monthly compensation, which includes their base salary, housing allowance, and transportation allowance. Nonetheless, the Federal Government will contribute 12.5% of the employees' monthly salaries, while military members

must contribute 2.5%. (Pension Reform Act, 2004). The private sector with five or more employees is included in the program. The only exceptions were public employees who were retiring within three years of the Pension Act's passage, which was June 30, 2004. (National Pension Commission, 2004). In accordance with the 2004 Pension Act, the employer may choose to contribute the whole amount of the pension by devoting at least 15% of the employee's monthly salary.

### **3. THEORETICAL FRAMEWORK AND LITERATURE REVIEW**

#### **3.1. The Life-cycle Theory**

Franco Modigliani, Alberto Ando, and Brumberg created the life-cycle theory of the consumption function in 1954. The life cycle model's starting point, according to Modigliani, is the hypothesis that households' decisions regarding consumption and saving at each point in time more or less reflect a conscious effort to achieve the preferred distribution of consumption over the course of the life cycle, subject to the constraints imposed by the resources that will accrue to the household over the course of its lifetime. The consumption levels of an individual or household depend more on predicted future earnings than on current income alone. It is considered that people plan their consumer spending habits based on their lifetime earnings expectations. We look at a simplified example first to observe how this theory affects the shape of the consumption function. Take into account a person of a certain age who is employed, has a life expectancy of  $T$  years, and intends to do so for  $N$  years. For instance, if our representative customer is 30 years old, has a life expectancy of 50 (plus) years, and plans to retire in 40 years, then their projected number of years in retirement will be equal to  $(T - N)$ , or 10. The following are our presumptions regarding the person's plans: It is anticipated that the person will want to consume things continuously throughout their lives. Furthermore, we assume that this person has no plans to leave any bequests and intends to spend their whole lifetime earnings plus current assets. Lastly, we make the supposition that there is no interest paid on assets and that current saving leads to dollar-for-dollar consumption in the future. These presumptions are later relaxed and are only there to keep the example straightforward. These presumptions suggest that consumption will always equal  $1/T$  of the resources expected to last a lifetime. The person intends to spend their lifetime income in ten equal instalments.

Using the life cycle theory, it was found that the start-up, growth, and maturity stages may be used to describe the development of a pension fund.

The life cycle theory explains the three stages of the evolution of pension fund managers and their unique funding requirements of a pension fund. The life cycle theory explains the three stages of the evolution of pension fund managers and their unique funding requirements. According to the life-cycle hypothesis, the sources of funding for pension fund administrators are related to their individual stages of development and, consequently, economic expansion (Kareem & Kareem, 2010).

### **3.2. Empirical Review**

The literature is replete with research that offers empirical proof of funded pension schemes' contributions. For instance, Baridoo and Micah (2019) investigated the connection between Nigeria's economic growth and the contribution pension fund. From 2014 to 2016, secondary data was gathered for donations from the public and private sectors from the PenCom data bank. The results showed that there is a positive and significant relationship between public sector PenCom contribution and real GDP and per capita income but a negative and insignificant relationship between private sector PenCom contribution and real GDP and per capita income. Four hypotheses were tested using multiple regression analyses with the aid of ordinary least squares. The real GDP and per capita income growth that follows an increase in public sector pension contribution therefore accelerates. It is advised that PenCom maintain proper adherence to the Pension Reform Act 2014, as amended, particularly in the private sector, to prevent economic leakages.

Fashagba (2018) conducted research to see how the new program would affect Nigeria's economic expansion. Due to data availability, the study uses secondary data on the gross domestic product and pension funds from the public and private sectors for a period of 10 years. Ordinary least squares is the data analysis technique employed in the study. The introduction of the new pension fund has a major favourable impact on Nigeria's economic growth, according to empirical evidence found in the study. In order to boost the nation's economic growth, the report suggests consolidating the contributory pension system.

Eke and Onafaleyo (2018) looked into the connections between the management of Nigeria's public pension funds and investments in housing infrastructure and the safety-equity factor. Ex-post facto research methodology was used in the study, and secondary data from legislative acts and gazettes and the national bureau of statistics were utilised. The findings of this study

demonstrated that, among other crucial components required to expand and preserve public pension contracts, public pension funds have strong correlations with safety of funds and equity return factors.

Agba (2018) investigated ways that efficient management could lessen the prevalence of fraud in the pension system and improve its administration in Nigeria. The study used a survey methodology; a sample of 435 informed participants was used to administer a 5-point Likert scale questionnaire to collect primary data on pension-related topics. Several regression analysis models were used to test the given data and assumptions. The results demonstrate that, despite the Act's (the Pension Reform Act, or PRA) provisions, attempts to perpetrate pension fraud have not significantly decreased. The report made several recommendations, including amending the Pension Reform Act to deter pension fraud by imposing harsh penalties on offenders and instilling moral norms among Nigerian public officials.

The effect of Nigeria's contributory pension system on economic growth was examined by Ameh, Isiwu, and Duhu (2017). World Bank Development Indicators and several PenCom Annual Report issues served as the study's data sources (database). Using the Statistical Package for Social Sciences, the data were calculated. It was discovered that the assets of pension funds and the pension savings and contributions that have been used over the years had a slight but positive impact on economic growth. The study suggested that in order to increase the country's gross domestic product (GDP), greater attention should be paid to the management of pension assets on the capital market as well as government bonds, real estate, and investment trusts (Nigeria).

In Nigeria, the relationship between the management of pension funds and the financing of infrastructure was examined by Christian and Wobiareri (2016). Four research topics were addressed, and four hypotheses were tested in the study. The investigation was conducted using a correlation research design. Every Nigerian pension fund administrator with a license made up the study's population. For the study, 108 participants were chosen by straightforward random sampling. After the reliability and validity tests, the respondents were polled using primary data and a questionnaire. Descriptive statistics were used to analyze the data, and Pearson products moment correlation at a 95% level of confidence was used to evaluate the hypotheses. According to the study's findings, there is a considerable correlation between the return on investment in social and economic infrastructure and the retirement pension account.



## **4. METHODOLOGY**

### **4.1. Research Design**

The ex-post facto research design is used in this study. For already-existing secondary data, this design is appropriate. Using already-existing data, ex post facto research offers a solution to research issues. Most significantly, the analysis' final results can offer significant insight into future results (a forecast). Ex-post-facto study design involves events that have already happened, as Eme and Johnson (2012) correctly note.

#### ***4.1.1. Population and Sample of the Study***

The research is relevant to Nigeria. The research focuses on pension issues as they relate to pensioners in the Nigerian economy's public and private sectors.

#### ***4.1.2. Sources of Data Collection***

Data for this study were collected from a variety of sources, including the annual report of the National Pension Commission (PENCOM) and the Statistical Bulletin of the Central Bank of Nigeria. The study's time frame is from 2004 to 2020.

### **4.2. Method of Data Analysis**

This study used several estimation techniques, including fully modified least squares, multiple regression, the unit root test of the Augmented Dickey-Fuller (ADF), and descriptive statistics like mean and standard deviation (FMOLS). The capacity of ordinary least squares (OLS) to account for dynamic relationships between variables has led to a rise in its application in literature throughout time. The assumption that the underlying data process is mixed in integration order underlies the majority of the estimate of Nigeria's human development index. By performing the unit root test and cointegration analysis on the time series variables, this assumption is proven to be true. The statistical application E-Views 9.0 was used for the analysis.

### **4.3. Model Specification**

The econometric model previously employed by Fashagba (2018), who empirically examined the impact of the new scheme on economic growth in Nigeria, was applied in this study.

The econometric model of this study, which had earlier been reviewed in the preceding section, is specified below:

$$\text{HDI} = f(\text{PubSPF}, \text{PrivSPF}, \text{TCPF}) \quad (3.1)$$

Where:

HDI = Human Development Index

PubSPF = Public Sector Pension Funds

PrivSPF = Private Sector Pension Funds

TCPF = Total Contributory Pension Funds

From the above function, they derived the statistical models as follows:

$$\text{HDI} = \beta_0 + \beta_1 \text{PubSPF} + \beta_2 \text{PrivSPF} + \beta_3 \text{TCPF} + \mu \quad (3.2)$$

## 5. RESULTS AND DISCUSSION

### 5.1. Inferential Result

Table 1: presents the co-integration regression results.

**Table 1: Co-integration Regression Results (HDI)**

Dependent Variable: HDI  
 Method: Fully Modified Least Squares (FMOLS)  
 Date: 29/01/22 Time: 00:47  
 Sample (adjusted): 2007 2020  
 Included observations: 14 after adjustments  
 Cointegrating equation deterministics: C  
 Long-run covariance estimate (Bohman kernel, Andrews bandwidth = 27.4943)

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
HDI(-1)	0.490240	0.007110	68.95443	0.0000
PrivSPF	0.000277	8.27E-06	33.56482	0.0000
PubSPF	0.000156	7.35E-06	21.18625	0.0000
TCPF(-2)	1.01E-05	1.59E-06	6.359512	0.0031
C	0.515042	0.002934	175.5327	0.0000
R-squared	0.926500	Mean dependent var		0.509643
Adjusted R-squared	0.761124	S.D. dependent var		0.017895
S.E. of regression	0.008746	Sum squared resid		0.000306
Long-run variance	4.46E-08			

Source: Researcher's Field Data (2022)

All of the explanatory factors appear to have a favourable effect on the explained variable, according to the Fully Modified Least Squares (FMOLS) result displayed in the table above. In other words, the model's independent variables had a favorable effect on the dependent variable. The study's findings also showed that, whereas a unit increase in public-sector pension funds would result in a 0.000156-unit increase in the human development index, a unit increase in private-sector pension funds would result in a 0.000277-unit increase. Moreover, a 1.01-unit gain in the Human Development Index would result from a two-period lag unit increase in Total Contributory Pension Funds.

Following the results closely revealed that the R-squared and Adjusted R-squared values were roughly 0.93 and 0.76, respectively. This indicates that approximately 93% of the fluctuations in the explained variable were explained by the explanatory factors. To put it another way, the independent factors accounted for around 93% of the variation in the Human Development Index, with variables not included in the model perhaps accounting for the remaining 7%. (stochastic variables).

## 5.2. Hypotheses Testing

Three earlier-stated null hypotheses were put to the test by the researcher. This section's goal is to make inferences based on the outcomes of data analysis and hypothesis testing.

**Decision Rule:** To accept or reject null hypotheses, the researcher relied on critical values like the p-value. The variable was deemed significant when the crucial p-value was less than the 5% level of significance, hence it was rejected.

### 5.2.1. Test of hypothesis one

$H_{01}$ : There is no significant impact of Private sector pension contribution on human development index in Nigeria.

<i>Variables</i>	<i>Coefficient</i>	<i>t-Statistic</i>	<i>P-value</i>
PrivSPF	0.000277	33.56482	0.0000

Source: Extracted from Table 1

The result of the hypothesis test ( $H_{01}$ ) showed that the probability value for PrivSPF is 0.0000, and the p-value is less than the 0.05 significance threshold. In light of this, the researcher rejects the null hypothesis. This finding

demonstrates the enormous impact that private sector pension contributions have on Nigeria's human development index.

### 5.2.2. Test of Hypothesis Two

H<sub>02</sub>: Public sector pension contribution has no significant impact on human development index in Nigeria.

Variables	Coefficient	t-Statistic	P-value
PubSPF	0.000156	21.18625	0.0000

Source: Extracted from Table 1

According to the hypothesis test (H<sub>02</sub>), PubSPF's p-value is less than 0.05 at the significance level, with a probability value of 0.0000. In light of this, the researcher rejects the null hypothesis. According to this finding, public sector pension contributions significantly improve Nigeria's human development index.

### 5.2.3. Test of Hypothesis Three

H<sub>03</sub>: There is no significant impact of total pension fund on human development index in Nigeria.

Variables	Coefficient	t-Statistic	P-value
TCPF(-2)	1.01E-05	6.359512	0.0031

Source: Extracted from Table 1

The test of hypothesis (H<sub>03</sub>) showed that the probability value of the TCPF for two period lags is 0.0031 and the p-value is less than the 0.05 significance threshold. The null hypothesis, according to which the total contributing pension fund in Nigeria has no discernible effect on the human development index, is disproved.

## 6. SUMMARY OF FINDINGS, CONCLUSION, CONTRIBUTION, RECOMMENDATION AND FUTURE RESEARCH

### 6.1. Summary

Following is a summary of the study's key findings based on the outcome of the hypothesis test:

- (i) During the study period, private sector pension contribution funds statistically and significantly influenced the Human Development Index.
- (ii) During the study period, public sector pension contribution funds statistically and significantly influenced the Human Development Index.
- (iii) It was found that during the study period, the effect of total contributory pension funds was statistically significant for the human development index.

## **6.2. Conclusion**

This study looked into how Nigeria's contributory pension system affected the country's Human Development Index. In contrast to the unsustainable pay-as-you-go defined benefits system, the contributory pension scheme (CPS) has expanded dramatically over the past 17 years and is offering ease of access to retirement income to members of the scheme. This has a significant positive impact on the wellbeing of the scheme's retired members. According to the 2014 Pension Reform Act, the CPS was created to pay retirement benefits to employees to whom the plan applies. As a funded scheme, the program has amassed a sizable pool of long-term investable funds that are currently being invested, fostering the growth of the country's economy.

Despite the CPS's impressive accomplishments, there are still some problems with it, including low coverage and a lack of political will, particularly on the part of state governments. According to the empirical findings, the increase in contributing pension funds had a beneficial effect on the human development index. The outcome showed that every variable in the model of economic development during the reference era was significant. Overall, contributory pension funds had a significant impact on the human development index of the aforementioned nation. Based on the tested hypotheses from the regression result, H01, H02, and H03 were all rejected.

## **6.3. Recommendations**

The government and policymakers in Nigeria should take into consideration the following recommendations to improve contributory pension fund administration in order to result in effective economic development, based on the findings, summary of findings, and conclusions discussed in the preceding paragraphs.

- (i) The federal and state governments must ensure that the welfare of retirees in the private sector is taken into consideration by fully ensuring that the private sector complies with the provisions of the Pension Reform Act 2014; if this is accomplished, economic development will be attained through the improvement in the standard of living of the citizens.
- (ii) Based on the analysis' findings, it was found that public sector pension contribution funds significantly aided Nigeria's Human Development Index. This clearly demonstrates the crucial role that these funds, when appropriately pooled, play in supplying investible money to the economy and creating cash for retirees' spending and wellbeing. Therefore, it is crucial for all levels of government to ensure the contributory pension scheme's implementation in order to guarantee Nigeria's continued economic growth.
- (iii) Given that total contributory pension funds have had a positive and significant impact on Nigeria's Human Development Index, it is crucial for the federal and state governments to fully implement the Pension Reform Act 2014's provisions, improve the quality of service provided by pension operators, and raise public awareness of the scheme. This will increase the pool of pension funds available for investment and raise the standard of living for the population.

#### **6.4. Contributions to Knowledge**

In the following two ways, this study work contributed to the body of knowledge:

- (i) Geographically, research on contributory pension funds' effects on economic growth was done in Nigeria. This stands apart from related research that include different study areas than Nigeria.
- (ii) Adoption and modification of an existing previous empirical model: This study used Fashagba's earlier empirical works as a starting point and made changes to them (2018). The study also modified its own dependent variable and used human development index.

#### **6.5. Suggestions for Further Research**

Additional research is suggested in the following area: the impact of Nigerian organizations' contributing pension schemes on worker productivity.

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### *Conflict of Interest*

There is no conflict of interest involved in the publication of this paper.

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