



## EMPIRICAL ASSESSMENT OF PENSION SCHEME AND ECONOMIC DEVELOPMENT IN NIGERIA

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### ABSTRACT

Considering that the Pension Commission is an arena that provides some services that strengthen economic growth, the investigation analyzed the causal relationship between the value of the HDI and CPFAs, RRF, and TPF, assessing the role of pensions in Nigeria's economic development. Using the Ordinary Least Square model, the AES and RSA exert weak influence on the economy's gross domestic product, yet there is a strong empirical relationship between HDI and CPFAs, RRF, and TPF. The study recommended that retirement funds should be adequately monitored and deregulated, and the commission should operate without government abuse or interference. Additionally, since the stock of the Pension Commission exists within a macroeconomic environment, it is necessary for the institutional, political, and economic conditions to be conducive for the retirement fund to reach its full potential.

**Keywords:** Contributory pension scheme, Human Development, Approved Existing Scheme, Closed Pension Fund, Active Fund, Retiree Fund

**JEL:** H55, O16, O17, O55

### INTRODUCTION

The idea of a pension scheme is to sustain the upkeep and welfare of retired workers. Over the years, it has gained global recognition and acceptance because of the benefits and comfortable life it provides to workers, whether in the private or public sector, thereby reducing dependency after retirement from active service. Pensions are a form of social security for retirees. However, pensions serve as a supplementary source of income, social, and financial security for retired workers, as their current earning power comes to an end (Modigliani & Murahlidhar, 2004).

From the foregoing, pension connotes a sum of money paid regularly to a person who no longer works because of age, disablement, etc, or to his widow or dependent children, by the state, by his former employers, or from funds to which he and his employers have both contributed (Onifade, 2001). It represents funds recompensed periodically by a corporate firm or government to employees who are ill or too old to actively earn income by working (Longman Dictionary of Contemporary English, 2000).

Despite the long existence of the contributory pension scheme in Nigeria, doubts still arise about

the scheme's ability to efficiently generate long-term funds for investments. Olanrewaju (2011) argued that forced savings in a low-income country like Nigeria, with an inadequate social security system and high poverty levels, may not be desirable. However, studies such as Balogun (2006), Ogumike (2008), and Gunu & Tsado (2012) maintain that the contributory pension scheme has the potential to gather savings for economic development.

In some countries around the world, the pay-as-you-go (PAYG) pension system is gradually being replaced by the contributory pension scheme, also known as the funded pension systems. These changes are driven by the increasing aging population annually (Udoka, Bassey, John & Orok, 2022). However, many believe that a shift from the pay-as-you-go (PAYG) scheme will automatically lead to increased economic growth and a more positive financial landscape, as institutional investors perform financial intermediation activities. This shift could result in a significant replacement of the traditional continental model of relationship banking with a system where capital markets play a larger role in corporate funding (Davis & Steil, 2001).

According to Holzmann (1997) and Davis & Hu (2008), pension capitalization is linked to higher economic growth indicators through developments in the capital market, increased saving rates, and a reduction in labor market distortions. Notably, a high level of pension capitalization means more people are saving through their mandatory pension scheme, which results in greater overall savings and provides more resources for capital market development.

However, it should be noted that as of 2010, the total number of pension contributors was 3.89 million, accounting for 7.62 percent of the estimated 51 million working population in Nigeria. Pension fund assets as a percentage of gross domestic product stood at 7.8 percent in 2010, while pension savings relative to gross domestic product were 1.11 percent in the same year (BGL Report, 2010). Given the disparity between these concepts, it is important to examine the impact of contributory pensions on economic development, particularly in Nigeria.

This study examined the role of pensions in Nigeria's economic development. However, its specific objectives include:

- To determine the relationship between the approved existing scheme and the Human Development Index (HDI) in Nigeria.
- To evaluate the impacts of the closed pension fund and the Human Development Index (HDI) in Nigeria.
- To analyze the relationship between active funds in Retirement Savings Accounts and their impact on the Human Development Index (HDI) in Nigeria.
- To examine the relationship between the retiree fund in the Retirement Savings Account and the Human Development Index (HDI) in Nigeria.
- To ascertain the relationship between the Total Pension Fund and the Human Development Index (HDI) in Nigeria.

From the above, the hypotheses for this study are stated thus;

- $H_{01}$ : There is no relationship between the Approved Existing Scheme and the Human Development Index (HDI) in Nigeria.
- $H_{02}$ : Does not have any effect between Closed Pension Fund Administrators and the Human Development Index (HDI) in Nigeria.

- $H_{03}$ : There is no significant relationship between the active fund in the Retirement Savings Account and its impact on the Human Development Index (HDI) in Nigeria.
- $H_{04}$ : There is no significant relationship between the retiree fund in the Retirement Account and the growth of the Human Development Index (HDI) in Nigeria.
- $H_{05}$ : Total pension fund has no significant relationship with Human Development Index (HDI) in Nigeria.

## LITERATURE REVIEW

### Theoretical framework

#### Positive theory of social security

According to Mulligan and Sala-i-Martin (1999), social security theory consists of efficiency and political theories. The political theory suggests that social security results from a political struggle where citizen groups compete for resources. Therefore, if the elderly population wins this struggle, it essentially becomes a social security theory.

On the other hand, efficiency theories are those that identify market inefficiencies. These theories are based on the idea that markets consistently fail to alleviate poverty among the aging population, which is why the government needs to intervene by establishing a social security program to minimize this issue (John, Takon, Owui, Obim, Nkamere & Ita, 2022). Notably, one characteristic shared by the political theory of social security is that the outcomes of political struggles tend to be economically inefficient, and without political reform, social security reform may not be possible. Conversely, the efficiency social security model claims that social security is the best government policy for addressing certain market malfunctions, and therefore, social security reform rarely enhances welfare (Mulligan & Sala-i-Martin, 1999).

However, it had previously been argued by Sala-i-Martin (1996) that the main idea is that pensions serve as a means to encourage retirement, i.e., to buy the elderly out of the labor force. The reason is that total output (GDP) is higher when the elderly do not work. This occurs through externalities in human capital, as skills decline with age and negatively affect the productivity of younger workers. Due to this social imbalance, the youth tend to oppose the continued active participation of the elderly. This highlights the importance of introducing social security programs, as they promote retirement.

#### Welfare analysis of pension reform theory

Pension reforms are typically analyzed within a neoclassical economic framework, where efficiency gains and utility maximization serve as the main justifications. The core claim of neoclassical theory regarding pension reform is based on the different impacts on savings resulting from pay-as-you-go and fully funded systems. Empirical evidence shows that using a moderately funded system has no long-term effect on capital accumulation. However, if the funded system is expanded further, it can increase capital supply through forced savings, whereas a pay-as-you-go system tends to negatively affect savings, leading to a decline in capital supply (Blanchard & Fischer,

1989). following Solow's (1956) growth model, the capital-labor ratio represents the marginal product of capital and is equivalent to the economic growth rate (the sum of the population growth

rate,  $n$ , and productivity growth rate,  $g$ ), in order to increase present and future consumption per capita ( $k$ ) =  $n + g$ . Moreover, the Diamond (1965) overlapping generations model with capital states that when the population growth rate exceeds the steady state marginal product of capital, the economy is considered dynamically inefficient (Abel, 1986). For a dynamically inefficient economy, the marginal product of capital is always lower than the economic growth rate. Therefore, introducing a pay-as-you-go system enhances consumption per capita in both the short and long term, while a fully funded system is more suitable in a dynamically inefficient economy because it generates more savings (Abel, 1986).

#### Empirical review

The contributory pension scheme and its influence have been debated in the literature. However, Poterba, Venti & Wise (1996, 1998) investigated tax-deferred savings accounts and their effect on the savings rate. Findings revealed that individual retirement accounts, as a tax-deferred savings mechanism, had a positive influence on savings.

Thaler & Benartzi (2004) assessed the effectiveness of pension schemes in increasing employee savings rates. The study found that employees who accepted an automatic yearly 3 percent increase in their contribution rate saw their overall contribution rise from 3.5 percent to 13.5 percent of their annual earnings over four years. Conversely, employees who did not accept the automatic 3 percent increase still experienced a rise in their contribution rate, from 5.3 percent to 7.5 percent during the same period.

Dagauda & Oyadiran (2013) analyzed the impact of the 2004 pension policy on the welfare of Nigerian civil servants, focusing on selected federal ministries. The analysis clearly showed that the funded pension system significantly improved the welfare of civil servants but did not solve issues of corruption and inadequate budget allocations. As a result, it was not effective in addressing retirees' problems in Nigeria. Based on these findings, the study recommended that the government and Pension Commission strengthen the commission's monitoring and supervision units to ensure effective oversight and enforcement, including the implementation of penalties outlined in the Act for non-compliers, regardless of their social status.

Ayegba (2013) conducted an evaluation of pension administration and management in Nigeria. The study's findings highlighted the need for public education and awareness regarding the benefits of the contributory pension scheme and its capacity to enable Nigerians in the Diaspora who wish to contribute to the retirement savings scheme. However, the study summarized that economic development could also be achieved through a well-organized system that ensures timely payment to retirees and pensioners by the Nigerian government.

Farayibi (2015) examined how pension funds serve as a housing finance tool in Nigeria. The study showed that pension funds are a significant source of mortgage financing because of their long-term nature and their positive impact on economic growth.

#### METHODOLOGY

The design used in this study is a descriptive and analytical research method. It aims to determine whether, and to what extent, pension influences Nigeria's economic development and the relationship between them. The descriptive research method focuses on interpreting data and

identifying functioning relationships among variables. The analytical research method emphasizes data collection, processing, and analysis using basic analytical tools, with minimal changes to the collected data. Since this study centers on the Nigerian economy, all data and variables collected will relate to Nigeria.

The study uses secondary data collected from the Nigerian Pension Commission (PENCOM), Federal Bureau of Statistics (FBS), Central Bank of Nigeria (CBN) Statistical Bulletins, and journals. Additionally, both oral interviews and discussions related to the study will be conducted. Reliability is ensured through accurate handling of research data. The study employs multiple regression techniques, which are used to test the relationship between the dependent and independent variables in the hypothesis.

#### Model specification

In line with the above, the model can be specified or expressed mathematically, thus;

$$\text{HDI} = f(\text{AES}, \text{CPFAs}, \text{RSA}, \text{RRF}, \text{TPF}, \text{R}) \dots \dots (1)$$

Where;

HDI = Human Development Index  
AES = Approved Existing Scheme  
CPFAs = Closed Pension Fund Administrators  
RSA = Active Fund in Retirement Savings Account  
RRF = Retiree Fund in Retirement Savings Account  
TPF = Total Pension Fund  
R = Error term

The estimated multi-correlational regression equation is given thus as;

$$Y = a_0 + a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_5X_5 + R \dots \dots (2)$$

Where;

Y = the dependent variable  
a<sub>0</sub> = the regression constant  
a<sub>1</sub>-a<sub>5</sub> = the coefficient of the regression parameters  
X<sub>1</sub>- X<sub>5</sub> = the independent variables  
R = error term

Therefore;

$$\text{HDI} = a_0 + a_1\text{LAES} + a_2\text{LCPFAs} + a_3\text{LRSA} + a_4\text{LRRF} + a_5\text{LTPF} + R \dots \dots (3)$$

Where;

LHDI = Human Development Index  
LAES = Log of Approved Existing Scheme  
LCPFAs = Log of Closed Pension Fund Administrators

LRSA = Log of Active Fund in Retirement Savings Account  
LRRF = Log of Retiree Fund in Retirement Savings Account  
TPF = Log of Total Pension Fund

R = Error term

The economic apriori expectation of the sign and parameter are expected to be;  $a_1-a_5>0$

## DATA ANALYSIS, RESULTS AND DISCUSSIONS

### Data Analysis

Table 1: Result of Correlation among variables

	<i>HDI</i>	<i>AES</i>	<i>CPFAs</i>	<i>RAF</i>	<i>RRF</i>	<i>TPF</i>
HDI	0.002275					
AES	0.022988	0.880654				
CPFAs	0.019271	0.681401	0.656343			
RAF	0.022148	0.345977	0.301564	0.610628		
RRF	0.035336	0.604006	0.420729	0.625865	1.064962	
TPF	0.02506	0.679062	0.624991	0.463938	0.596022	0.757234

Source: Researchers' computation using E-Views 12

Table 2: Regression Results

Dependent Variable: DHI

	coefficient	Standard Error	t-statistic	Probability
C	0.324371	0.102759	3.15662	0.016004
LAES	-0.01389	0.034221	-0.40596	0.696893
LCPFAs	0.015909	0.045892	0.34665	0.739039
LRSA	-0.00298	0.022882	-0.10344	0.920517
LRRF	0.031027	0.022513	1.37822	0.210574
LTPF	0.009826	0.03947	0.24895	-0.08351
R-squared	= 0.555415			
SER	= 0.043345			
Adjusted R-squared	= 0.237855			
F-statistics	= 1.749007			

$$\text{HDI} = 0.324371 + (-0.01389)\text{AES} + (0.015909)\text{CPFAs} + (0.00298)\text{RAF} + 0.0310027\text{RRF} + 0.009826\text{TPF}$$

The correlation results from Table 2 shows that the study's apriori analysis revealed an R-squared (adjusted) of 24%. This indicates that 76% of the variance in the HDI was explained by factors such as the Human Development Index, Approved Existing Scheme, Closed Pension Fund Administrators, Active Fund in Retirement Savings Account, Retiree Fund in Retirement Savings Account, and Total Pension Fund. This suggests that the model fits the data well, reflecting a low level of error. However, the F-statistic value of 1.749007 confirms a high level of predictability of the model.



### Test of hypotheses

To test the hypotheses already stated, we will specify the following decision rules;

RULE 1: Accept the null hypothesis if the t-critical is  $>$  t-calculated

RULE 2: Accept the alternative hypothesis if the t-calculated is  $>$  t-critical

### Hypothesis 1

t-calculated for AES = -0.40596; t-critical, 0.05 at 12 df = 0.029

Based on these results and the upheld decision rule, there is no significant relationship between AES and HDI.

### Hypothesis 2

t-calculated for CPFAs = 0.346652; t-critical, 0.05 at 12 df = 0.029

Following these results, there is no significant relationship between CPFAs and the HDI.

### Hypothesis 3

t-calculated for RSA = -0.10344; t-critical, 0.05 at 12 df = 0.029

From the result, there is no significant relationship between RSA and HDI.

### Hypothesis 4

t-calculated for RRF = 1.378722; t-critical, 0.05 at 12 df = 0.029

These results show that there is a significant relationship between RRF and HDI.

### Hypothesis 5

t-calculated for TPF = 0.248948; t-critical, 0.05 at 12 df = 0.029

These results show that there is a significant relationship between TPF and HDI.

### Discussion of findings

From the analysis of the assessment of the role of pension in the economic development of Nigeria, the researcher has examined the subject at hand, and below are the findings discussed:

The AES and RSA have a limited impact on the economy's gross domestic product. The regression results summarized above show a strong empirical relationship between HDI, CPFAs, RRF, and TPF.

The R-squared value of the result is 0.555415, which indicates that about 55% of the variation in HDI was explained by the model. The adjusted R-squared of about 24% suggests that the model is a good fit. The F-statistic of 1.749007 is greater than the critical F-statistic at the 0.05 significance level. This implies that the overall model is statistically significant at that level.

Considering that the Pension Commission is an arena that provides services that support economic growth, the analysis examines the causal relationship between the value of the HDI and CPFAs, RRF, and TPF, assessing the role of pensions in Nigeria's economic development.

### CONCLUSION AND RECOMMENDATIONS

The role of pensions in promoting economic development in Nigeria is well established, as they

act as a mechanism for efficiently mobilizing and allocating savings. Analyzing the period between 2004 and 2016, notable pension indicators and their relationships with economic growth were found to be positive. Therefore, this calls for proactive measures to further enhance development within the Nigerian Pension Commission (PENCOM).

The Nigerian Pension Commission (PENCOM) has great potential, especially with various policy directives like the repeal of laws that hinder efficient and effective operations. Furthermore, internalization and improvements in the commission's infrastructure will enhance the prospects of the pension commission. The enactment related to the Nigerian Pension Commission has, over the years, and with the literature review of this study, fulfilled its objectives as a pension (retirement fund) institution in the Nigerian economy.

### Recommendations

The following recommendations are stated;

1. The determination of the retirement fund should be properly monitored and deregulated, and the commission should be allowed to operate free from government abuse and interference.
2. Given that the stock Pension Commission operates within a macro-economic environment, it is therefore necessary that the institutional, political, and economic environment be conducive for the retirement fund to realize its full potential.
3. Considering the benefits of nationalizing operations by the Nigerian Pension Commission, the nationalization policy should be continuously pursued.
4. Laws regarding retirement fund allocation should be shared with the commission to ensure timely information and accurate performance of duties.

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