

Human Capital Investment and Labour Force Participation in Nigeria



Cynthia C. F. Dikeogu-Okoroigwe¹, Akunya L. Ifeanyichukwu², Nwizu Esther Amarachi³

^{1,2}Department of Economics, Alvan Ikoku Federal College of Education Owerri, Imo State, Nigeria

³ 1001 Fanshawe College Blvd London, Ontario

ABSTRACT: The study investigated the effect of human capital investment on labour force participation in Nigeria from 1990 to 2021. The study used Government Expenditure on Education, Government Expenditure on Health and Government Expenditure on Research and Development to proxy human capital investment as the independent variables while labour force participation rate was used as the dependent variable. Descriptive statistics, unit root test, vector error correction model test were employed to analyze the data. The study reveals that Government Expenditure on Education (XEDU) had a negative and significant impact on Labour force participation (LBFP) in Nigeria; Government Expenditure on health (XHLT) has a positive, but statistically insignificant impact on Labour force participation (LBFP) in Nigeria. The study thus concluded that human capital investment did not promote labour force participation in Nigeria. The study recommends that there is the need for the government in Nigeria to comply with the bench mark of 26% specified by UNESCO. There is the need to improve on the pay package of the health workers and teachers at all levels of education. The government should adopt efficient planning and monitoring.

KEYWORDS: Human Capital Investment, Labour Force Participation, Government Expenditure on Education, Government Expenditure on Health,

1. INTRODUCTION

Human capital refers to the abilities and skills of human resources while human capital development refers to the process of acquiring and increasing the number of persons who have the skills, education and experience which are crucial for economic growth of a country (Harbison, 1962). Human Capital Investment has to do with investing in people through nutrition, health care, quality education, jobs and skills helps develop human capital, and this is key to ending extreme poverty and creating more inclusive societies. It is a theoretical fact that the impact of this human capital investment in an economy especially growth labour force participation is positive. However, it may not apply or equally be true in all empirical situations as this depends on a lot of factors such as; the quality and quantity of education, government policy on education, structure of the economy, among others. Hence, the examination of the relationship between human capital investment and labour force participation in Nigeria is an outstanding empirical verification exercise whose need cannot be disputed.

Nigeria as a country is immensely endowed both in natural and human resources. Nigeria used to depend on physical capital for her growth and development without putting in to consideration the role played by human capital in the development process. In recent years, human capital has been recognized as an agent of national development in all countries of the world (Isola & Alani, 2012). As the global economy shift towards more knowledge- based sectors (such as the manufacturing sector like the manufacturing of ICT devices, pharmaceuticals, and telecommunication) and skills, human capital investment and development becomes a central issue for policy makers and practitioners engaged in economic development both at the national and regional level (Adelakun, 2011). This has the tendencies of revamping the Nigerian economy.

Studies by Schultz (1961), Denison (1962) and a host of others confirmed that, an economy depends on education to foster growth. Burnet, Marble and Patrinos (1995) said investment on education raises per capital Gross National Product (GNP) reduces poverty and supports the expansion of knowledge and increase labour force participation thereby reducing inequality. According to them, investment on education and training influences man's productivity. Thus, education is a crucial component of human capital development such that, a country cannot afford to leave it to the whims and caprices of individual choice. Similarly, health is fundamental to economic growth and development and is one of the key determinants of economic performance both at the micro and macro levels. This is derived from the fact that, health is both a direct component of human wellbeing and is a form of human capital that increases an individual's capabilities (Bloom & Canning, 2003). Grossman and Eihannah (1989) have equally

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demonstrated that, health is a form of human capital. Schultz (1959) also argued that, population quality (that is, a healthy population) is the decisive factor of production and emphasized the merits of investing in education and health. Barro (1991) and Grossman and Eihannah (1989) also commented on health as a capital productive asset and an engine of economic growth and that healthy individual is more efficient at assimilating knowledge leading to higher productivity levels. In the similar vein, Ogujiuba (2013) argued that, there can be no significant economic growth in any country without adequate human capital investment and development.

Human capital investment and development has therefore become very imperative in the determination of the level of economic growth of an economy. Despite the importance of educational institutions and the relevance of human capital investment and development generally, Nigeria spends insignificant proportion of her financial resources on education and health which is often below the recommendations by the United Nations and World Health Organisation (WHO) respectively. In Nigeria, education expenditure as a proportion of Gross Domestic Product (GDP) averaged 5.64 percent between 1986 and 1990 compared to 5.84 percent between 2005 and 2008. Records have also shown that the federal government recurrent expenditure in education and health averaged 85.92 billion and 49.69 billion in 1981 and 2020 respectively (CBN, 2020). The education expenditure performance generally is much lower than the 26 percent of national budget, as recommended by the United Nations (CBN, 2009). More so, it is also apparent from frequent references to the WHO recommendation that countries should spend 5 percent of GDP on health, a recommendation which was never formally approved and which has little basis in fact (Savedoff, 2003).

The exponential increase in population growth coupled with the absence of effective policies has militated against investment in human capital development in Nigeria (Allege & Ogujiuba, 2005). Consequently, the cost of human resource development has skyrocketed, thus, requiring government intention to make-up for the lacuna that has been created. To say that the government lacks the required resources to investment in human capital will be untrue given the fat budgetary allocations made to the legislative arms of government in terms of humongous salaries and allowances. If the aforementioned is the case, it then means that the dearth of investment in human capital is not a result of only the increase in population but the lack of the political will and systematic planning to initiate the process.

The lack of political will and negligence in the part of the Nigerian government to invest in human capital can be seen in the trajectory of the country's annual budget. It is worth mentioning that Nigeria's annual budget allocation to education falls short of the recommended 16 – 25 percent of its annual allocation to education as stipulated by the United Nations Educational Scientific and Cultural Organization (UNESCO). The above scenario is a pointer to the level of negligence in human capital investment in the country and its impact on labour force participation.

Despite the low investment in human capital investment in the country, more tertiary institutions are still been openly almost on a yearly basis. The aftermath effect of the aforementioned is the persistent strike actions by academic and non-academic staffs of these institutions demanding for better work conditions. Dearth of adequate learning infrastructure, below par salary of lecturers, and poor learning environment for students are some of the consequences of government's negligence. Obviously, the poor working conditions in these institutions will likely hamper the level of labour force participation in the educational sector.

2. REVIEW OF LITERATURE

2.1 Theoretical Framework

2.1.1 Human Capital Theory

The concept of Human Capital was propounded by Theodore Schultz in 1961 and further developed and propagated by Gray Becker. Human capital theory refers to the process of increasing the level of productivity or capacity of people or employees through the transfer of appropriate knowledge and skills. It is believed that by subjecting them to trainings their attitude and approach towards work will change (Becker, 1994). Obviously, embarking on such trainings will entail some cost on the part of the employer or government. However, the multiplier effects of such trainings on productivity cannot be overemphasized. Thus, investment in human capital is something every organization should consider both in the short and long-run (Becker, 1994). Human capital investment results to an increase in the number of skilled personnel in an organization which leads to the overall growth of the organization (Eigbiremolen and Anaduaka, 2014).

Ejere (2011) stated that human's are a critical factor of production among the four identified in economic theory. According to him, they have the ability to learn and unlearn, and to use their mental faculties to create. Thus, the theory of human capital is key to unlocking the productive potentials of workers and increasing the productive capacity of the firm.

2.3 EMPIRICAL LITERATURE

Farid, et al (2012) examined human capital related factors which determine employment in Pakistan. The study is based on purely primary source of data, which is collected by the authors by employing multistage cluster sampling techniques. Binomial Logit regression technique is used to estimate the parameters of labor force participation model. The study concludes that the completed years of education, experience, various level of education, health status of workers significantly influenced the labor force participation and employment. In addition, it is observed that some socio-economic factors like house holds' assets, spouse

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participation in economic activities and number of dependents also significantly affect the employment. Therefore, it is suggested that the government should provide education and health facilities without any discrimination for all.

Jaiyeoba (2015) carried out an empirical investigation on the relationship between investment in education, health and economic growth in Nigeria, using time series data from 1982 to 2011. This paper employs trend analysis, the Johansen cointegration and ordinary least square technique. Empirical findings however indicate that there is a long-run relationship between government expenditure on education, health and economic growth. The variables: health and education expenditure, secondary and tertiary enrolment rate and gross fixed capital formation appear with the expected positive signs and are statistically significant (except government expenditure on education and primary enrolment rate). The findings of this work have strong implications on education and health policies and considering the fact that they are at this time of great debate in the country. Therefore, this study recommends that in order to accelerate growth and liberate Nigerians from the vicious cycle of poverty, the government should put in place policies geared towards massive investment in the education and health sector in terms of infrastructure and manpower.

Idenyi et al. (2016) examined the effect of human capital development on the growth of Nigeria economy. Using co integration techniques to investigate the effect of human capital development and economic growth in Nigeria, we obtained the following results. (i) there is significant long-run relationship between human capital development and economic growth in Nigeria. This is confirmed by the Johansen co-integration. (ii) It was estimated from the VECM, 1% increase in the government expenditure on education (TEDU), on the average led to 23.8% increase in GDP while. 1% increase in the government expenditure on health (THEA) caused 37.6% decrease in GDP. (iii) The two variables as human capital development factor were found to have significant effect on economic growth. However, government expenditure on education has positive relationship with GDP. This implies any increase in expenditure on education contributes positively to the growth of the economy.

Ogundari and Awokuse (2018) analyzed the impact of human capital on economic growth in Sub-Saharan Africa (SSA). They considered human capital and health as a measure of human capital. The results of system GMM indicated positive impact of both health and education on economic growth, and the impact of health was relatively larger than education.

Kenny (2019) examined the Effects of human capital investment on unemployment Volatility in Nigeria from 1981-2015 with a primary focal objective on the composition of human capital investment in Nigeria. We show that investments in match-specific human capital reduces the outside option of workers, implying less incentive to separate and thus longer job spells. The theoretical model generates unemployment dynamics that are consistent with the observed patterns for unemployment, separation and job finding rates across education groups. While the Error correction result revealed that Government current investment in human capital in terms of spending on education needs to increase in quantum for its significance to be meaningful. Hence, the government needs to put more effort in human capital investment in order to reduce unemployment rate in Nigeria.

Keji (2021) examined the nexus between human capital and economic growth in Nigeria between 1981 and 2017. This is predated by poor policy impact across the key sectors of the economy, such as education and health that would have transformed productivity to economic in Nigeria. The results disclosed that the estimated coefficients of human capital have long-run significant impact on economic growth in Nigeria. Also, the diagnostic tests were used to check the validity of the techniques adopted in the study. Interestingly, results from normality test, VEC residual serial correlation LM tests and VEC residual heteroskedasticity tests confirm the justification and validity of the estimated results obtained in this research. Drawing way forward, this study therefore recommends the need to sustain economic in Nigeria through increase budgetary allocation to education and health sector to boost human capital skills needed to drive knowledge-based economy.

Sari (2021) examined the effect of human capital development on employee performance. Human capital development is influenced by several factors, such as training and development, level of education and knowledge. The collection of primary data obtained through a questionnaire that was allocated to the 40 employees Sharia Rural Bank HIK Parahyangan as respondents. The method used was Partial Least Square (PLS). Finding of this study revealed human capital has a significant positive effect on employee performance with a total contribution of 19.32%, while the remaining 80.68% is influenced by other factors that are not observed in this study.

Bachama, et al. (2021) examined the role of human capital on economic growth in Nigeria using time series data covering the period from 1970-2019. The data are sourced from Central Bank of Nigeria (CBN) statistical bulletin and World Development Indicators of the World Bank. The data are analyzed using Autoregressive Distributed Lag model (ARDL). The study reveals that expenditure on health and education are found to be positively and significantly related with economic growth both in the short-run and long-run. However, labor negatively impact on economic growth and it was found to be significant. Again, trade openness and inflation are insignificant in explaining economic growth. Thus, the paper recommends that, Nigerian government should focus on improving the educational and health sector.

Khan and Ahmed (2022) investigates the dynamic effects of income on a new cohort of labor force by using real demography in order to increase investment on human capital. The study constructed three scenarios such as baseline, typical, and optimistic. In the baseline scenarios, the rate of human capital investment, which is observed in 2020 remains constant in 2060, whereas, typical and optimistic scenarios, the rate of human capital increased for each country to median and 75th percentile.

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2.4 SUMMARY OF LITERATURE REVIEWED

From the literature reviewed it was observed that there is the dearth of literature on the relationship between human capital investment and labour force participation of countries. Most of the works reviewed such as Jaiyeoba (2015), Idenyi et al. (2016), Siddiqui and Rehman (2017), Ogundari and Awokuse (2018), Akaakohol and Ijirshar (2018), Keji (2021), Bachama, et al. (2021) examined the role of human capital on economic growth; Amodu, et al. (2017), Oluwabunmi (2018), Kenny (2019) and Khan and Chaudhry (2019) studied the impact of human capital development in employment generation. Specifically, Farid et al., (2012) studied how human capital formation affect labour force participation in Pakistan while Khan and Ahmed (2022) studied the effect of human capital investment on economic growth and productivity.

The present deviates from these scholars by examining the effect of human capital investment on labour force participation in Nigeria by disaggregating human capital investment into government expenditure on education, government expenditure on health and government expenditure on research and development as the independent variables while percentage of labour force to total population was used as the dependent variable from 1990 to 2021. This is the gap the study filed in literature.

3. STUDY METHOD

3.1 Data Collection & Sources

The data used for this study were secondary data sourced from Central Bank of Nigeria and World Bank. Specifically, time seria data covering the period 1982 -2021 on government expenditure on health, government expenditure on education and labour force participation were used for the study.

3.2 Research Design and Data Analysis Technique

The ex-post factor research design was adopted for this study. The ex-post factor design refers to the collection and use of data relating on variables that already exists and as such cannot be manipulated by the researcher. (Nwankwo, 2011). The above research design is deemed to be appropriate for this study because the associated data required for analysis are **in situ** i.e. the data already exist.

This study adopts the parsimonious vector error correction model in estimating the relationships among the dataset. Also, the Augmented Dickey-Fuller (ADF) test for stationarity was performed to ascertain the stationarity of all the variables

3.3 Model Specification

The model used for this study was originated from Jaiyeoba (2015), however, it was modified to suite the trajectory of our investigation. The current study deviates from these scholars by examining the effect of human capital investment on labour force participation in Nigeria by using percentage of labour force participation to total population to proxy labour force participation as dependent variable, while the independent variables are Government Expenditure on Education (XEDU), and Government Expenditure on Health (XHLT) .

Accordingly, the model were specified thus:

$$LBFP = f(XEDU, XHLT) \tag{3.1}$$

The mathematical form of equation (3.1) is written thus:

$$LBFP = \beta_0 + \beta_1 XEDU + \beta_2 XHLT \tag{3.2}$$

The econometric form of equation (3.2) is specified as follows:

$$LBFP_t = \beta_0 + \beta_1 XEDU_t + \beta_2 XHLT_t + \mu_t \tag{3.3}$$

Where; LBFP = Labour force Participatio rate, XEDU = Government Expenditure on Education, and XHLT = Government Expenditure on Health and . β_0 is the constant, while β_1 - β_2 are the parameters to be estimated, μ_t is the stocastic term.

4. RESULTS AND DISCUSSION

The results of the various statistical tests carried out on the data is presented and discussed in details in this section.

4.1 Descriptive Statistics

The result of the descriptive statistics is presented in Table 4.1 below.

Table 4.1: Descriptive Statistics Results

	LBFP	XEDU	XHLT
Mean	58.73375	189.7056	114.9369
Median	60.28000	100.9100	58.97500
Maximum	60.67000	646.7500	423.3300
Minimum	53.44000	0.290000	0.150000
Std. Dev.	2.584282	200.9562	129.6805
Skewness	-0.957469	0.917140	1.007918
Kurtosis	2.080442	2.624056	2.829313
Jarque-Bera	6.016760	4.674553	5.456970

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Probability	0.049372	0.096590	0.065318
Sum	1879.480	6070.580	3677.980
Sum Sq. Dev.	207.0340	1251885.	521327.8
Observations	31	31	31

Source: Author's Computation (2023)

The result of the descriptive statistics in Table 4.1 shows that LBFP has a mean value of 58.73375 with a standard deviation of 2.584282. The skewness value of LBFP is negative (-0.957469), meaning that LBFP has a long-left tail while the kurtosis value of PVT is 2.080442 (i. e. less than 3), meaning that it is platykurtic. That is, it has a flat distribution, meaning that the series has a less value lower than the mean sample.

XEDU has a mean value of 189.7056 with a standard deviation of 200.9562. The skewness value of XEDU is positive (0.917140), meaning that XEDU has a long-right tail while the kurtosis value of XEDU is 2.624056 (i. e. less than 3), meaning that it is platykurtic. That is, it has a flat distribution, meaning that the series has a less value lower than the mean sample.

XHLT has a mean value of 114.9369 with a standard deviation of 129.6805. The skewness value of XHLT is positive (1.007918), meaning that XHLT has a long-right tail while the kurtosis value of XHLT is 2.829313 (i. e. less than 3), meaning that it is platykurtic. That is, it has a flat distribution, meaning that the series has a less value lower than the mean sample.

Based on these observations, it is therefore necessary to test for the stationarity of the variables and the long run relationship since using the variables at level might give a spurious result. The unit root test is conducted so as to make the variables stationary. The study adopts the Augmented Dickey Fuller (ADF) unit root test procedure.

4.2 Unit Root Test

The Augmented Dickey Fuller unit root test was used to ascertain whether or not the individual data are stationary or not. The output of the ADF test is shown in table 4.2 below.

Table 4.2: Unit Root Test Results

VARIABLES	LEVELS		1 st DIFFERENCE			Order of Integration
	ADF Test Statistics	Test Value @ 5%	ADF Test Statistics	Test Value @ 5%	Test Value @ 5%	
LBFP	1.95291	0.515493	2.258462	** -1.954414	I(1)	
XEDU	0.598667	1.952066	2.149859	** 1.955681	I(1)	
XHLT	2.399753	3.612199	6.009429	** 3.595026	I(1)	

Source: Author's Computation (2023)

A test of stationarity was conducted on the dataset. It is customary to see a trend or unit root in time series data. The implication of running regression using dataset that are non-stationary is that your result or outcome will be spurious. As seen in table 4.2 all the data were stationary at first difference. Hence, the justification for running a co-integration test to verify the number of co-integrated equations in the model.

4.3 Co-integration Test Result

The test to ascertain the number of co-integrated equations in the specified model was carried out using the Johansen co-integration test. The result of the Johansen Co-integration test is presented in Table 4.3.

Table 4.3: Johansen Co-integration Test Result

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.432183	35.25101	29.79707	0.0107
At most 1 *	0.387590	18.27231	15.49471	0.0186
At most 2	0.111947	3.561712	3.841466	0.0591

Source: Author's Computation (2023)

The result of the Johansen Co-integration test shown in table 4.3 above indicated that there is long-run relationship between the variables in the model. Put differently, the trace statistics shows that there are two (2) co-integrating equation in the model. Thus, the justification to conduct a parsimonious error correction analysis.

4.4 Vector Error Model

The result of the vector error correction estimation of the model is presented in table 4.4.

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Table 4.4: Vector Error Correction Result

VARIABLES	COEFFICIENTS	T-STATISTICS
ECM	-0.062396	2.66422
D(LBFP(-1))	-0.409895	2.37032
D(XEDU(-1))	-0.101278	2.78389
D(XHLT(-1))	0.824152	1.75635
C	2.14457	0.57889

Source: Author's Computation (2023)

From table 4.4 above, the ECM is rightly signed and statistically significant. Specifically, the ECM coefficient of (-0.062) shows that all the deviations from equilibrium in previous period will be corrected at the speed of 6%. Government expenditure on education (XEDU) has negative and statistically significant relationship with labour force participation rate. This implies that one percent increase in XEDU decreases labour force participation (LBFP) about 0.101278 percent. The coefficient of government expenditure on education (XEDU) is statistically significant at 5 percent level. The negative effect of government expenditure on education (XEDU) implies that government expenditure on education (XEDU) does not enhance labour force participation (LBFP).

The results also indicate that in the short run the coefficients of government expenditure on health (XHLT) is positive, that is, 0.824152. This implies that one percent increase in government expenditure on health (XHLT) increases labour force participation (LBFP) by about 0.824152 percent. The coefficient of government expenditure on health (XHLT) is not statistically significant at 5 percent level. The insignificant effect of government expenditure on health (XHLT) on labour force participation (LBFP), implies that government expenditure on health (XHLT) has not enhance labour force participation (LBFP).

5. CONCLUSION AND POLICY RECOMMENDATION

The study undertook an empirical examination of the effect of human capital investment on labour force participation in Nigeria from 1990 to 2021. The study used percentage of labour force participation to total population to proxy labour force participation as the dependent variables while Government Expenditure on Education (XEDU), and Government Expenditure on Health (XHLT) were used as the explanatory variables. Data for the variables were sourced from the CBN Statistical Bulletin (2021) and World Bank's World Development Indicators (2021) and the empirical methodological procedure of vector error correction analyses were applied.

Thus, the findings are summarized as follows:

- i.) The unit root pre-diagnostics results showed that Government Expenditure on Education (XEDU), Government Expenditure on Health (XHLT) and Labour force participation (LBFP) were all integrated at first difference (see table 4.2 above).
- ii.) The Augmented Dickey Fuller Unit test result necessitated the use of Johansen co-integration test to ascertain the long-run association of the dataset. It was discovered that there were two co-integrating equations in the model.
- iii.) The Vector Error Correction model was run and the following outcome were observed;
 - The result shows that Government Expenditure on Education (XEDU) has a positive and statistically insignificant impact on Labour force participation (LBFP) in Nigeria.
 - Government expenditure on health has positive, but statistically insignificant relationship with labour force participation rate.

In view of the findings from the study, the following recommendations are put forward for consideration:

1. There is the need for the government in Nigeria to comply with the bench mark of 26% specified by UNESCO.
2. There is the need to improve on the pay package of the health workers and teachers at all levels of education.
3. The government should adopt efficient planning and monitoring.
4. The Government should also allocate more to capital expenditures on education and health; provide facilities such as libraries, laboratory equipment, computers and modern learning equipment.
5. The government should create an enabling environment in order to encourage private sector investment in the education and health sector.

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