

Nexus Between Foreign Direct Investment And Human Capital Development: Evidence From Nigerian Economy (1970-2015)

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ABSTRACT

Although, there are evidences in the literature which suggest that human capital plays an important part in the growth and development of less developed countries yet there is a disagreement in the empirical findings as to the exact relationship between foreign direct investment and human capital. The study therefore examined the nexus between Foreign Direct Investment (FDI) and Human Capital Development (HCD) in Nigeria and for the period of forty six years (1970 - 2015). The study adopted an autoregressive Distributed Lagged model as a technique for the analysis. The choice of the model follows the result of the unit root which was found out to be a mixture of first difference and levels as a stationarity test. The study found out that exchange rate has a significant and a positive relationship with human capital development in Nigeria. The study also found out that the real gross domestic product growth has a positive and a significant relationship with human capital in Nigeria. Institution was established by the study having a negative but significant relationship with human capital development in Nigeria. The study also found out that foreign direct investment which is also the main variable of the independent variable has a positive and a significant relationship with human capital development in Nigeria. It was also found out in the study that there is a positive and a significant impact of the economic growth on the human capital development in Nigeria. The study also found out that inflation has a negative and statistically significant impact on the human capital development in Nigeria.

Key words: Foreign Direct Investment, Human capital Development, Nigeria

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1. INTRODUCTION

Countries generally find themselves trapped in poverty entrenched by inability to fully harness their endowed human and material resources; so they regard the inflow of foreign direct investment (FDI) as important means of achieving economic development. Also the drying-up of loans to developing economies in the 1980s made many of them eased restrictions using different economic policy change on FDI to aggressively attract foreign capital (Aitken and Harrison, 1999; World Bank, 1997).

Foreign direct investment is seen to have the capacity to augment the domestic available supplies of human and financial resource needed to achieve growth and development targets (Okonkwo et al 2015), increasing and better utilization of both human and maternal resources (Egbo 2012), reduces unemployment (Ozughalu and Ogwumike 2013), an important element for economic growth and development strategy (Ayanwale 2007) and provides needed capital for investment, enhances job creation and managerial skills as well as transfer of technology. Apart from being the pillars for launching the New Partnership for Africa's Development (NEPAD), it has led many countries to improve their business climate to attract more foreign investment (Funke and Nsouli, 2003)

On the hand, Human capital development (HCD) or simply put human capital is a continuum and one of the most important requirements, for sustainability and improvement of an economy at both micro or macro levels; a must for any society that wishes to survive in our complex and dynamic world. It has been recognized globally as one major factor that is responsible for the wealth of nations as Smith (1776) and Folloni and Vittadini (2010), refers human capital to the acquired and useful abilities of all the inhabitants or members of the society.

Human capital does not only improve the social welfare of people, but plays a leading role in the process of economic growth and development (Berkeley 1953). Theoretically and practically, human capital is more important when compared with other factors of production as revealed by Rashid (2000) that resources are generally explained by the human knowledge for the reason that the central and primary source of all wealth is human labour.

Human capital also facilitates lateral movement and redeployment of a country's labour force. For example through relevant training and associated experience, an accountant in the private sector can be redeploying to a public sector equally as an accountant or as director of finance with higher responsibilities. To Berg (2001), the ability of a country to create new ideas and adapt old ones depends greatly on the country's human capital, education system among others while the cross-country work of Benhabib and Spiegel (1994) shows that human capital enters statistically and insignificantly in expounding per capita growth rates.

In essence, the implication of the above by different researchers shows that to survive in the modern time, nations must devote a high proportion of its resources to developing its human resources in terms of number, quality and mix for the optimum overall economic and social development (Yesufu, 2000). Nonetheless, it is noteworthy, in the spirit of this research work that the effect of foreign direct investment on economic growth, economic development and its other usefulness, depends greatly on human capital development that allows resident nation to exploit the foreign investment spillovers (Carkovic and Levine, 2002).

2. LITERATURE REVIEW

What is Foreign Direct Investment (FDI)?

Foreign Direct investment (FDI) is a category of cross-border or direct investment equity flows associated with a resident in one economy having control or a significant degree (at least 10%) of influence on the management of an enterprise that is resident in another economy. (World Bank, 2016) According to World Trade Organization New (WTON, 2001) foreign direct investment occurs when an investor based in one country, home country, acquire an asset in another country the host country with the intent to manage the asset. Lipsey and Chrystal (2003) noted that FDI is always undertaken by domestic firms which have accumulated some benefits such as patents and know-how in the local market and want to enter into foreign markets.

The United Nations defined FDI as investment in enterprise located in one country but effectively control by residents of another country. This definition not only looks at FDI from an investment point of view, but also from corporate control. It an investment made to acquire a lasting interest (usually at voting stock) and acquiring at least 10% of equity share in an enterprise operating in a country other than the home country of investors (Mwilima 2003). It is an investment in real or physical assets and not foreign portfolio investment such as government bonds among others (Ayanwale 2007).

What is Human Capital Development (HCD)?

The shift in the global economy towards more knowledge based sectors makes human capital development becomes a central issue for policy makers and practitioners engaged in economic development, (OECD, 1996). Babalola, 2003 concluded the rationale behind investment in human capital is based three facts: first, that the new generation must be given appropriate part of knowledge which has already been accumulated by previous generation, second, that the new generation should be taught how existing knowledge which has already been accumulated by previous generation, and thirdly, that the new generation should be taught how existing knowledge should be used to develop new product to introduce new process and production methods and social services.

The international organization, Human Capital Development watch (2007) defines human capital as the know-how, education, work-related competencies and psychometric assessments of employees; the sum of all individual competencies in organisations or a combination of genetic inheritance, education, experience and attitudes about life and business. Essentially, human capital corresponds to any stock of knowledge or characteristics the worker has that contributes to his or her “productivity”. Therefore, Human Capital Development encompasses a wide range of subjects such as health care, nutrition, population control, education and training as they are more directly related to the mandate of employers' organizations.

It then means that human capital is ‘labour skills, managerial skills, and entrepreneurial and innovative abilities-plus such physical attributes as health and strength’ i.e. his ability and education. (Nakamura, 1981; Newland and San, 1996). To the Human capital theorist they suggested that human capital development requires education or training to increase productivity of workers by imparting useful knowledge and skills, hence raising workers future income by increasing their lifetime earnings (Becker, 1994)

2.1 Nexus between FDI and HCD

Using the demand and supply framework (Slaughter, 2002; Te Velde 2003); on the demand side, there are three channels by which FDI may positively affect the accumulation of human capital. These are technology transfer, spillovers and physical capital investment (Slaughter, 2002). While on the supply side, FDI affects HCD via its effect on general education both official and informal on-the-job training.

As for Onyeagu and Okeiyika (2013) they empirically examine the relationship between FDI, HCD and Economic growth in Nigeria and to ascertain the long run sustainability of FDI- induced growth process. Their result using OLS technique shows that FDI in Nigeria has a negatively significant to growth in the long run, meaning that the contributions of FDI in to Nigeria are small in the long run. The negative significant effects of human capital in Nigeria, with overall growth in the long run, suggest that there is shortage of skilled labour in the country.

Slaughter (2002) argues that the transfer of technology from Multinational Companies (MNEs) to host country affiliates both the leads to demand for more skilled labour (HCD indicator) within the host enterprise; this will on the long run lead to increase in the wages of skilled or highly skilled labour. Observation shows from literatures that increase inflow of FDI stimulates economic growth and prosperity of nation's which Obadan and Oduola (2000) affirms that it leads to growth of employment, high degree of competitiveness, improvements in export performance and on the long run increase growth of output. Ozughdu and Ogwumike (2013) also added that FDI is expected to provide the requisite capital, technology and investment that positively affect nations economic grow and employment.

Bartel and Sicherman (1999) finds out that there is an education premium has direct relationship with technological change which inturn lead to demand for more educated workers; hence the capability of human capital of a nation is put to test. And going by the result of findings of Bartel and Lichtenberg (1987) individuals respond positively to changes in the incentives to invest in human capital. Borenszein et al. (1998) additionally concluded that FDI is a vehicle for the adoption of new technology that requires manpower training to work with new technologies; this suggests that there exist a positive effect of FDI on human capital development.

3. THEORETICAL FRAMEWORK

The main focal points of this work are to assess the trend of foreign direct investment in Nigeria within the period of forty years (1970-2015). Second is to assess the determinants of foreign direct investment in Nigeria and third is to examine nexus between Foreign Direct Investment and Human Capital Development using human capital development index (HDI) as a yard-stick.

Model specification

To assess the nexus between FDI and HCD, the model is specified as:

$$HCD = f(\text{REXR}, \text{INF}, \text{GRWT}, \text{INST}, \text{FDI})$$

Where

REXR = Real Exchange Rate

INF = Inflation rate

GRWT = Growth rate

INST = Institution

FDI = Foreign Direct Investment

HCD = Human Capital Development

The explicit form of the models is:

$$HDC_i = b_0 + b_1 \text{REXR}_i + b_2 \text{INF}_i + b_3 \text{GRWT}_i + b_4 \text{INST}_i + b_5 \ln \text{FDI}_i + u$$

Where, \ln = natural log to base e

$b_1 - b_5$ = coefficients of the explanatory variables that is to be estimated

u = stochastic error term

Table 1: Descriptive statistics of the data

	PI	EXR	INF	GDP	INST	FDI
Mean	255547.9	55.68088	18.76200	28750.97	89.71848	2146.021
Median	247876.9	21.88443	12.67439	20611.56	86.77632	1051.326
Maximum	383023.4	192.4405	72.83550	69780.69	155.8544	8841.113
Minimum	172402.7	0.546781	3.457650	15242.63	28.49249	189.1648
Std. Dev.	63667.39	65.34807	16.40240	16176.76	33.81686	2525.575
Skewness	0.454119	0.633253	1.781919	1.344189	0.168515	1.433841
Kurtosis	1.964545	1.667757	5.251375	3.358145	2.304277	3.756039

Source: Author's computation

Above table shows the descriptions of the data employed in this study in terms of the mean, median, minimum, maximum, the standard deviation etc. as shown in the table it is important that the mean and the median of each variable falls within the minimum and the maximum values of each variable. This shows the data are consistent and good for estimation. Meeting the above criteria of the means and the medians falling between the maximum and the minimum values of the data shows our data is good for the analysis as this also reduces the tendency of achieving a spurious results.

Unit Root Tests Result

Table 2: The results of Augmented Dickey-Fuller (ADF) and Phillips Perron (PP)

Variable	Augmented Dickey-Fuller (ADF)		Philips-Perron (PP)		Remark
	Level	1 st difference	Level	1 st difference	
PI	-0.3489	-2.3370***	3.2203	-2.7627***	I(1)
EXR	-2.9972*	-2.9336	-2.9798*	-4.68070	I(0)
INF	3.3668	-8.7753*	0.11921	-11.4332*	I(1)
GDP	-2.7343	-2.0392*	-2.3308	-5.0289*	I(1)
INST	0.5074	-3.8879***	-3.1312	-4.3853***	I(1)
FDI	1.4699	-3.0123**	-1.3489	-3.7149**	I(1)

Source: Computed by the Author, 2017

Note; (*, **, ***) represents significance levels of the unit root test at 10%, 5% and at 1%. Decision rule, the null hypothesis is rejected if the tabulated value is greater than the critical value at a chosen level of significance which is 10% for the purpose of this study.

The unit root test shows exchange rate was significant at levels while other variables are stationary at first difference. They are said to be stationary because as both the ADF and the PP calculated statistics are all less than the critical values of the ADF and Phillips-Perron. The stationarity of the data connotes they are good to and fit for estimation.

Engel Granger Causality Test

Table 3: Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
EXR does not Granger Cause LPI LPI does not Granger Cause EXR	44	4.61072 0.49619	0.0159 0.6126
INF does not Granger Cause LPI LPI does not Granger Cause INF	44	0.49703 1.52449	0.6121 0.2304
LGDP does not Granger Cause LPI LPI does not Granger Cause LGDP	44	1.90225 1.11623	0.1628 0.3377
INST does not Granger Cause LPI LPI does not Granger Cause INST	43	1.70764 0.93317	0.1949 0.4021
LFDI does not Granger Cause LPI LPI does not Granger Cause LFDI	44	2.47496 2.10892	0.0973 0.1350
INF does not Granger Cause EXR EXR does not Granger Cause INF	44	0.71999 0.89601	0.4931 0.4164
LGDP does not Granger Cause EXR EXR does not Granger Cause LGDP	44	0.30770 7.37560	0.7369 0.0019
INST does not Granger Cause EXR EXR does not Granger Cause INST	43	0.60177 4.30416	0.5530 0.0207
LFDI does not Granger Cause EXR EXR does not Granger Cause LFDI	44	0.79174 2.02309	0.4602 0.1459
LGDP does not Granger Cause INF INF does not Granger Cause LGDP	44	0.87493 0.77440	0.4249 0.4679
INST does not Granger Cause INF INF does not Granger Cause INST	43	0.22892 1.05598	0.7965 0.3578

Source: Computed by the Author

Table above shows the causality among the variables of the model. The first column shows that exchange rate granger cause the per capita income in Nigeria. On the other hand per capita income does not granger cause the exchange rate in Nigeria. This shows the relationship is unidirectional. The causality test on the main variable of the model which is foreign direct investment shows, foreign direct investment inflow granger cause the human capital development in Nigeria. Human capital on the other round does not granger cause the foreign direct investment inflow. This therefore implies that an increase in foreign direct investment inflow has a positive impact on the level of human capital. This further supports our findings in the main analysis.

Table 4: Autoregressive Distributed Lag (ARDL)
Dependent Variable: LPI
Method: ARDL

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LPI(-1)	1.639705	0.033692	48.66678	0.0000
LPI(-2)	-0.819573	0.031764	-25.80229	0.0000
EXR	-0.000157	0.000162	-0.965457	0.3432
EXR(-1)	0.000177	0.000189	0.934792	0.3585
EXR(-2)	0.000546	0.000156	3.503187	0.0017
INF	-0.000160	0.000075	-2.126689	0.0431
INF(-1)	-0.000075	0.0000702	-0.00000107	0.2924
LGDP	1.000470	0.000660	1516.733	0.0000
LGDP(-1)	-1.639895	0.033593	-48.81650	0.0000
LGDP(-2)	0.820058	0.031827	25.76607	0.0000
LINST	-0.000815	0.000281	-2.902131	0.0075
LINST(-1)	-0.000365	0.000307	-1.185992	0.2464
LINST(-2)	-0.000704	0.000305	-2.304565	0.0294
LFDI	0.000180	0.000085	2.077197	0.0478
C	0.517572	0.042106	12.29216	0.0000
R-squared	1.000000	Mean dependent var		12.41730
Adjusted R-squared	0.999999	S.D. dependent var		0.249911
S.E. of regression	0.000201	Akaike info criterion		-13.89509
Sum squared resid	0.000001	Schwarz criterion		-13.19880
Log likelihood	315.7445	Hannan-Quinn criter.		-13.63832
F-statistic	4042385.	Durbin-Watson stat		1.156716
Prob(F-statistic)	0.000000			

Source: Author's computation

The result above shows that lag one of human capital proxied with per capital income has a statistically significant relationship with the current per capital income. The relationship is also positive. This shows that a 1% increase in the previous year per capita income will lead to a 1% increase in the present per capital income. The result also shows that exchange rate has no statistically significant impact on the human capital development in Nigeria. The relationship is however negative as this complies with the a priori expectation. The result on inflation shows a negative but a statistically significant relationship with human capital. This implies that an increase in inflation by 1% will lead to a decrease in the level of human capital. The result on the GDP has shown a positive and a significant relationship with the level of human capital in Nigeria. This is evident in the fact that there is a need for funds to offer training and good education to the people. When the economic performs, it trickles down to the people as the education sector and other training centres are likely to get more allocation. The result on institutions has been shown to have a statistically significant relationship with the level of human capital but the relationship is however negative. This implies that the institutions such as governance has not been contributing to the level of human capital.

The main variable of the model which is the foreign direct investment shows there is a statistically significant and positive impact of foreign direct investment on human capital development in Nigeria. It implies that a 1% increase in the net inflow of investment will lead to a development of human capital in Nigeria by 0.00018% growth. The result is in conformity with the a priori expectation. The result on the adjusted R-Squared shows that 99% of the behavior of the independent variable is explained by the independent variables. The result on the F-statistic also shows it is significant as it implies that the independent variables jointly influence the dependent variable. It is also important that the adjusted R squared is less than Durbin Watson, this further confirms that the model of this study is a long run model.

4. DISCUSSION OF RESULTS

The result on inflation shows a negative but a statistically significant relationship with human capital. An increase in inflation will lead to increases in the prices of goods and services which will in turn lead a decrease in the aggregate demand for goods and services. The cost of living will be high as people will be cautious on the money spent in acquiring qualitative education or the training needed for development. A case of low aggregate demand normally leads to a situation of retrenchment of workers popularly known as downsizing or right sizing. Due to an increase in the cost of inputs, firms will have to lay off some workers and force some to receive a pay cut. In a situation like this it will be a difficult for people to offset their ward school fees as the low in the aggregate demand might have taken a toll on them. The level of human capital formation due to training and education will definitely drop.

The result on the GDP has shown a positive and a significant relationship with the level of human capital in Nigeria. The performance of the economy is a necessary condition for carrying out activities such as education funding, training of the citizens such as that of the Npower Programme where people are being paid by the federal government a sum of N30,000 a month in addition to the training they are being subjected to. When the GDP increase, it shows there is fund to disburse to the key sectors of the economy such as health and education. Also, an increase in the level of the economic growth shows an increase in the level of investment. The investment might have cut across investment in education and in health which promotes human capital formation.

The result on institutions has been shown to have a statistically significant relationship with the level of human capital, the relationship is however negative. Since our institution has been tagged with corruption. This means that the institutions have not been doing enough when it comes to contributing their own quota to the development of human capital in Nigeria. This is evident in the fact that the allocations for education and health are being embezzled by some top politicians and top civil servants. The result on the foreign direct investment shows there is a statistically significant and positive impact of foreign direct investment on human capital development in Nigeria. There more the inflow of foreign direct investment from other countries, the better for the human capital and hence the better for the formation of human capital development in Nigeria. As investors from other countries commit their resources to the Nigerian economy, there are lots of positive externalities that arise as a result.

For instance, quite a number of multinational companies in Nigeria such as Shell petroleum company, MTN among others, have sponsored education programmes in one way or the other, e.g. by giving out scholarship scholarships and by constructing class rooms or buildings.

5. CONCLUSION

The study concludes that inflation has a negative impact on the economy when is higher than the moderate level. When the prices of goods become spiral, it is usually accomplished by low level of demand for goods and services. In a case where the goods involved has an elastic demand, it is difficult to increase the price for the good. The firms will have to bear the burden of increase in the cost of factor inputs. Firms may have to lay off some workers in order to reduce the cost of factor inputs. This in turn worsens unemployment rate following low aggregate demand for goods and services.

The study also concludes that there is a need for an improvement on the performances of the economy as measured by the real GDP in order for the country to improve on the important sectors that are capable of contributing to the development of the human capital. Education sectors and health sectors need funding for acquiring the right equipment for a better service. Finally is that institutions have not contributed to human capital development. The government institutions have failed Nigeria as corruption is being perpetrated and that foreign direct investment has been plying vital role in the development of human capital in Nigeria.

6. RECOMMENDATIONS

In the light of the findings of this study, the following are recommended:

Exchange rate should be allowed to move up as it is only an indicators of the extent at which a country relies on imported goods. It should be seen as a wake-up call for the need to promote locally made goods. There is a need for an enabling business environment with a view to attracting foreign direct investment in to the Nigerian economy. Security should be ensured, infrastructural facilities should be provided coupled with political stability.

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