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Effect of Government Expenditure on Human Capital Development in Kaduna State (1990 – 2015): An Application of ARDL Model

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Abstract: *This study investigates the effect of government expenditure on human capital development in Kaduna state from 1990 to 2015. Secondary data were obtained from Kaduna state Ministry of Budget and Planning, Cooperate Affairs Commission, National Youth Service Corps and Kaduna state Ministry of Health on; government expenditure on education and health, creative citizens, number of graduates and life expectancy at birth respectively. Also an index for human capital development was created using three pillars; creative citizens, number of graduates and healthy citizens using principal component analysis (PCA). The Auto Regressive Distributed Lag (ARDL) was adopted for the study. Findings of the work suggests that in the short-run, increase in government spending on education does not stimulate an increase in human capital development which is significant at 5 percent level of significance (t = -4.37, p<0.05; t=-2.44, p<0.05). . However, it was confirmed that in the long-run, there is a positive effect as a 1 percent increase in education expenditure stir up an increase to human capital by 2.79 percent which was found to be significant at 5 percent (t=3.789, p<0.05). Health expenditure was found to had a positive and a statistically significant effect on human capital development in the short-run covering the first year and second year (t =3.88, p< 0.05; t=3.56, p<0.005). However, the long-run evidence has showed that a 1 percent increase in health expenditure does not increase but rather decrease human capital development by -2.9 percent. The study concludes that government expenditure directly affects human capital development. The under study recommends that the state government should increase its spending on education and health in other to rapidly develop human capital since it is crucial to economic prosperity.*

Keywords: *Government Expenditure, Human Capital Development, Kaduna State*

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I Introduction

Human capital has been recognized globally as one major factor that is responsible for the wealth of nations (Oluwatobi and Ogunrinola, 2011). According to Smith (1776) and Folloni and Vittadini (2010), human capital refers to the acquired and useful abilities of all the inhabitants or members of the society. Human capital therefore becomes important because of it role in translating other capital into finished products while causing economic growth.

One of the issue of concern have been the issue of developing human capital, this is because of it role in motivating economic growth. Okojie (2005) posits that human capital development is the process of acquiring and increasing the number of persons who have the skills, education and experience that are critical for economic growth and development of a country's economy. However, Ehimare, Ogaga-Oghene, Obarisiagbon and Okorie (2014) in a recent study noted that the level of human capital development is a reflection of the level of health and education of a nation as it translate into high level of economic activities in that nation. In line with this assertion, it therefore means that expenditure on health and education has the tendency in developing human capital.

Following the enhanced contribution of petroleum to total federally collected revenue in the early 1970s and the increased internal generated revenue, budgetary allocation to education sector and health sector took a rising trend in many states in Nigeria, including Kaduna State. Education sector expenditure in Kaduna State rose by 57 percent between 2001 and 2005 (from N3.6 billion to N5.6 billion), but in real terms, total expenditure on education in Kaduna state fell by 12.8 percent during this period (based on the national Consumer Price Index) (Abubakar and Paul, 2007). A Sparc report shows that in recent time, the intervention of the Department for International Development (DFID) in Kaduna state have caused increased in government

spending on education and health as the Kaduna State budget for 2011 allocates 15% (Naira 19.5 billion) to education and 8% (Naira 10.5 billion) to health; and this increase is expected to build up human capital in the state.

Most of the past studies on Nigeria's human capital development focused on its impact on economic growth and development as they considered human capital development as the transmission mechanism between government expenditure on human capital and economic growth/development. This shows why the measurement of the human capital development by these studies remains narrow. Some of these studies include the works of Mba, Mba, Ogbuabor and Ikpegbu (2013); Eigbirelolen and Anaduaka (2014); and Ishola and Alani (2012) among others. However, in spite of the increased academic interest in the subject under discussion, several issues relating to the human capital development and economic growth relationship remain hitherto unsettled. Chief among these issues relate to the fact that the empirical linkage between government expenditure and human capital development in Nigeria is yet unclear especially in state specific study like Kaduna State. This is because every state in Nigeria allocate what they desired to education and health and hence obtaining different results as touching developing human capital. Therefore, understanding how government expenditure at state level affects human capital development become important to actualize state policies. This study is therefore conducted to assess the effect of government expenditure on human capital development especially in Kaduna State Context.

II Literature Review

Results of studies on government expenditure and human capital development in Nigeria have reported conflicting evidences. For example, in an unpublished state specific evidence, Adamu (2012) analyzed the impact of public expenditure on human capital development in Kano state in the last twenty years. He found out that there was insufficient funding and inappropriate expenditure in education services the result of which is shortage of modern manpower among indigenes of the state.

Okuneye, Maku and Ayinla (2008) using ordinary east square (OLS) examined the impact of public expenditure on education and economic gorowth/development in Nigeria. The paper observes that misplacement of priority, poor budgetary allocation and lack of political will to education has been the reason for the dwindling fortune of the educational sector in Nigeria.

An observation by Johnson (2011) showed that human capital is an important factor used in converting all resources to mankind's use and benefit. The study employed (OLS) to analyze the relationship using gross domestic product (GDP) as proxy for economic growth, total government expenditure on education and health, and the enrolment as pattern of tertiary, secondary and primary schools as proxy for human capital. The analysis showed a positive relationship between human captial development and economic growth. Ohwofasa, Obeh and Atumah (2012) investigate the relationship between government expenditure in the education sector and economic growth in Nigeria using time series data from 1986-2011. The study employed both the Johasen co-intergration technique and parsimonious error correction method. The result showed a long run relationship between the variables. The econometric results further indicated that a one year lag of gross domestic product, current level of recurrent expenditure on education, two year lags of recurrent expenditure on education, current as well as two year lags of gross capital formation exhibit positive impact on economic growth in Nigeria, on the other hand, previous year capital expenditure on education and human capital development has negative and significant impact on economic growth within the period, 1986-2011.

Similarly, Oluwatobi and Ogunrinola (2011) by studying the impact of government expenditures on education and health in Nigeria and their effect on economic growth; employed cointegration test and error correction modelling as a tool of analysis to find out the long run equilibrium convergence and the speed of disequilibrium adjustment respectively. The results revealed a long run positive relationship between government recurrent expenditure on human capital development and the level of real output, while capital expenditure is negatively related to the level of human capital development and real output. Chude and Chude (2013) investigated the effects of public expenditure in education on economic growth in Nigeria over the period 1977-2012. The OLS and error correction model (ECM) indicated that total expenditure on education is highly and statistically signigicant and have positive relationship on economic growth in Nigerial in the long run.

In an attempt to analyze spending on education sector and its contribution to GDP in Nigeria, Lawal and Abdulkadir (2013) using vector Auto Regression (VAR) found that; spending on education impact GDP positively.

Eigbiremolen and Anaduaka (2014) employed the agumented Solow human-capital growth model to investigate the impact of human capital development on national output. The study revealed that human capital development in line with theory, exhibits significant positive impact on output level. This implies that human capital development is indispensible in the achievement of sustainable economic growth, as there is an increase

in economic performance for every increase in human capital development. The results further revealed a relatively inelastic relationship between human capital development and output level.

Torruam and Abur (2014) investigated public expenditure on human capital development as a strategy on economic growth in Nigeria. The Johansen approach of co-integration indicated co-integraing relations between the variables; the Granger-causality suggests that there is bi-directional causality running from total expenditure on education to total expenditure on health in Nigeria.

Agbatogun and Taiwo (2010) examined the significance of the determinates of total government health expediture in Nigeria, using regression analysis the result showed that GDP is the most important determinants of health allocation and literary rate is insignificant to the degree of total government health expenditure in Nigeria. Similarly, Isola and Alani (2012) analized the contribution of different measures of human capital development to economic growth in Nigeria.

Kairo *et al.* (2017) empirically studied the relationship between human capital development and government expenditure. Data were collected over the period 1990-2014. ARDL and impulse response function were adopted for the estimation. The Bound Testwas used todetermine that a long run relationship exists between HDI and GOVEXP. The results demonstrated that both in the long and short run, government spending has remained positive but to a very large extent insignificant to human capital development in Nigeria.

The study of Elumah and Peter (2017) employs the descriptive statistics to assessed the contributions of government expenditure on education, government expenditure on health, tertiary school enrolment, secondary school enrollment, primary school enrolment on gross domestic product. Also, Unit Root Test is conducted on the series to ascertain if they are stationary while co-integration test follows suit, to also ascertain the long run relationship between expenditure on education and human capital development on economic growth. The Johansen Cointegration test and Error Correction Mechanism estimated model found that that there is no significant effect of expenditure on education and human capital development on economic growth in Nigeria.

III Theoretical Framework And Model Specification

The neoclassical theory developed by Solow and Swan (1956) could be seen as the pioneer in this direction. The work has served as a basis to the rise of numerous studies on economic growth and argument on the capital production relationship and economic equilibrum. However, the neoclassical model does not explicitly incorporate human capital in their work. Mankiw, Romer, and Weil (1992), posits that technology determines economic growth endogenously and it depends in economic factors and capital- labour relationship. In addition, government expenditure has been widely accepted as a major determinant for human capital development with overall outcomes of economic growth and development.

Re-writing and linearizimg the model as specified by Mankiw, Romer, and Weil (1992) and expanded by Oluwatobi and Ogunrinola (2011); the specification thus become:

$$\log Y = \alpha_0 + \alpha \log K + \beta \log HL + \varepsilon \quad \text{-- -- -- -- -- --} \quad (1)$$

Where α_0 = logA, 1-α = β and ε = logU

The model is therefore modified to show the effect of government expenditure on human capital development in Kaduna State. This was achieved by re-arranged equation (1) following Nahum (2016). Human capital development (logHL) is therefore made the dependent variable, while capital stock (logK) is the explanatory variables and was decomposed, while Y (GDP) is held constant as extraneous variable. Thus, from equation (1), equation (2) emerges:

$$\log HL = -\alpha_0 - \alpha_1 \log(EDUCATIONEXP) - \alpha_2 \log(HEALTHEXP) + \beta \log(\overline{GDP}) + \varepsilon$$

-- -- -- -- -- -- -- -- -- -- --- (2)

Where: HL is human capital development; EDUCATIONEXP is government Expenditure on Education in Kaduna state, while HEALTHEXP is Government Expenditure on Health in Kaduna state. On Apriori expectation, it is expected that all variables exert positive effect on Human capital development (HL) i.e EDUCATIONEXP, HEALTHEXP > 0.

IV Data, Sources Of Data And Methods Of Estimation

Annual Secondary data was considered for this study. Data such as Human Capital Development Index was developed using a multi-dimensional approach from Number of Kaduna State graduate (GRD) which was sourced from National Youth Service Corp (NYSC) head office, Creative Citizen which was proxy by New Jobs (NJ) created and was sourced from Corporate Affairs Commission, while Healthy Citizens proxy by life expectancy in Kaduna state was source from Kaduna State ministry of health. Other data includes: Government recurrent and capital expenditure on education which was sourced from Kaduna State Ministry of Education; Government recurrent and capital expenditure on health which will be source from Kaduna State Ministry of Health.

The study used econometric tools of analysis. First and foremost was normality test and unit root testing. The normality test of the variables was done by looking at the mean, median, maximum, minimum value, Skewness, Kurtosis, and Jaque-Bera statistics of each variable to ensure normality of the variables. Secondly, unit root testing of the variables was carried out using both the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests to ascertain whether the data are stationary or otherwise. Since some variable were found to be integrated of order one I(1) while others are of order zero I(0), the Autoregressive Difference Lag (ARDL) model was thus employed as a tool for analysis. This model becomes important because it accommodates variables which are integration of order one or zero (i.e I(1) and I(0)). However, it is vital that none of the variables is I(2). Furthermore, the ARDL approach integrates the short run dynamics with the long-run equilibrium without losing long-run information. The ARDL model is specified thus;

$$\Delta \log HL_t = -\alpha_0 - \sum_{i=1}^{p} \beta_i \Delta \log(HL)_{t-i} - \sum_{j=1}^{p} \alpha_1 \Delta \log(EDUCATIONEXP)_{t-j} - \sum_{k=1}^{p} \alpha_2 \Delta \log(HEALTHEXP)_{t-k}$$
$$+ \theta_0 \log(HL)_{t-1} + \theta_1 \log(EDUCATIONEXP)_{t-1} + \theta_2 \log(HEALTHEXP)_{t-1} + \varepsilon_t$$

-- -- -- -- -- -- -- -- -- -- (3)

Where, Δ represent the first difference operator, θ_i are the long-run multipliers, β_i and $\alpha_{1 \text{ to } 2}$ are short-run dynamic coefficients, ε_t represent white noise errors, α is the drift term, and ρ is the lag length which will be chosen optimally for each of the variable using Schwarz information criterion.

V Discussion Of Results, Conclusion And Recommendations

Bound Test for Cointegration (Long-Run) Analysis:

The Wald statistic (See Appendix 3) was used in testing for the long-run relationship between Human capital development, Government education expenditure and government health expenditure in Kaduna State. The null hypothesis signifying that Human Capital Development (HL) is equal to Government Education Expenditure (lnEDUCATIONEXP), Government Health Expenditure (lnHEALTHEXP) and equal to zero (HL= lnEDUCATIONEXP = lnHEALTHEXP = 0) was rejected. This was because the F-statistics of 7.172239 is in between the upper bound critical values and lower bound at 1% level of significant at the Peseran Table. This implies that there is a long-run relationship between education expenditure, health expenditure and human capital development in Kaduna State. This shows that tampering with government spending on education and health in Kaduna state has a longrun impact on human capital development.

Short-Run and Long-Run Effect

The Parsimonious ARDL model was applied in analyzing the short run and long run effect of education spending and health spending on human capital development in Kaduna State (see Apendix 4). it was confirmed that in the short-run, Government Expenditure on Education had a negative effect on human capital development in the first and second period which is significant at 5 percent level of significance (t = -4.37, $p<0.05$; t=-2.44, $p<0.05$). In other word, a 1 percent increase in education expenditure causes human capital development to decline by -2.79 percent in the first period of the implementation of the expenditure and -1.5 percent in the second year. This suggests that in the short-run, increase in government spending on education does not stimulate an increase in human capital development. This is because as money from the government coffer reduces in the short run, no evidence of new business and graduates are seen from such investment. However, it was confirmed that in the long-run, there is a positive effect as a 1 percent increase in education expenditure stir up an increase to human capital development i.e increase in graduates and new businesses by 2.79 percent. The result was found to be significant at 5 percent (t=3.789, $p<0.05$).

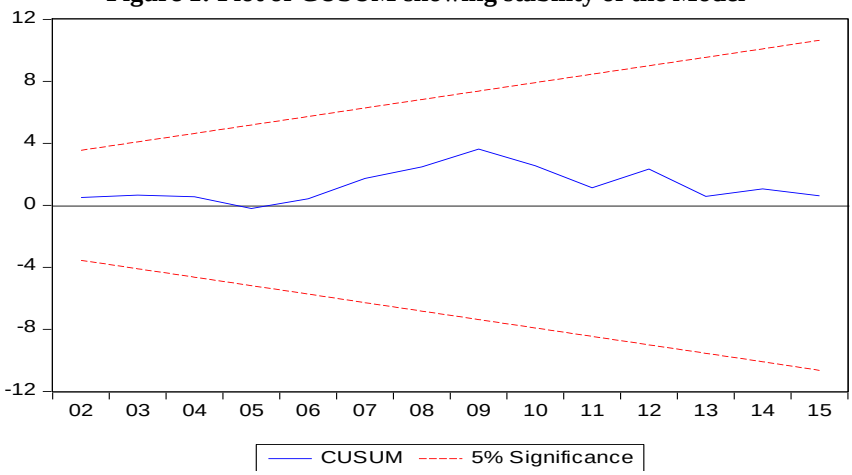
Health expenditure was found to had a positive and a statistically significant effect on human capital development in the short-run covering the first year and second year (t =3.88, $p< 0.05$; t=3.56, $p<0.005$) as indicated in Table 5.8. The coefficient of 1.5 percent and 0.47 percent implies that human capital development in the area of life expectancy increases by that same percent in the first and second period respectively as a result of 1percent increase government spending on health in Kaduna State. However, the long-run evidence has showed that a 1 percent increase in health expenditure does not increase but rather decrease human capital development by -2.9 percent. This is because current spending on health can only be relevant to life now but irrelevant to the future as long-run access to good life also required long-run spending.

The Error Correction Term (ECT_{t-1}) (see appendix 5) which assesses the speed of adjustment between the short-run disequilibrium (actual) and the long-run equilibrium (expected) has the correct sign and is statistically significant at 5%. Based on the estimated coefficient, it will take the speed of 37.3% in the case of disequilibrium in the short-run to be corrected in the long-run if the right policy measures are put in place. Also, the estimated results suggest that the model has a reasonable good fit with robust diagnostic tests for error

processes such as absence of serial correlation, presence of normality and homoskedasticity. The plots of the CUSUM and CUSUMQ test in Figure 1 and 2 confirm that the regression in stable within 5% critical bounds.

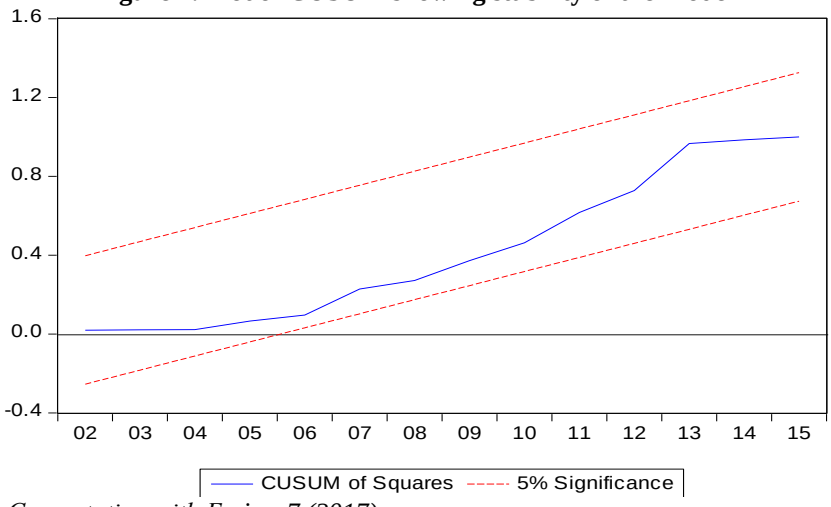
The study recommends that the government should thus, increase her annual budgetary allocation to these education and health sector in order to rapidly develop human capital in the state. This should be followed by specific strategeis to minitor and evaluate implementation of the funds appropiately. It is also neccesary for policy makers to note that any drop in government spending in education and health will prove detrimental to development of human capital in Kaduna state. In addition, there is need to build a social consensus that will make family planning services accessible, affordable and acceptable to citizens so as to control rapid population growth. Because it was found that; despite contineous increase in government expenditure on education and health there was drop in human capital development in the period 1990 to 2004. Record keeping in both education and health sectors was found to be very poor in Kaduna state. Government should ensure adequate record keeping at all levels in order to make reliable data from the state available.

Figure 1: Plot of CUSUM showing stability of the Model



Source: *Author's Computation with E-view 7 (2017)*

Figure 2: Plot of CUSUM showing stability of the Model



Source: *Author's Computation with E-view 7 (2017)*

The study also suggest that the legislative arm of government should make laws to support constant and increasing government spending on education and health so that even when there is change in government the policies will remain the same in order to avoid negative shocks when there is transition of power as found in the study. It should also ensure curricular development every five years to capture new trends in these sectors. Civil servants responsible for ensuring access to qualitative education and health services for Kaduna state's population should live up to expectation by showing committement and dedication to their primary assignment. This will go a long way in the development of human capital. However, this will be very difficult if the government did not improve staff welfare. Improved working conditions by the government will spread

education and health over urban and rural communities in the state, reduce the problem of brain drain and promote long life.

References

[1]. Adamu, S. (2012). "The Impact of Public Expenditure on Human Capital Development in Kano State (1990 – 2009)". An Unpublished Thesis Submitted to the Department of Economics, Ahmadu Bello University, Zaria, Nigeria

[2]. Agbatogun, K. K. and Taiwo, A. S. (2010). "Determinants of Health Expenditure In Nigeria". *Journal of Research in National Development*, Vol. 8. No. 2.

[3]. Chude, N.P. and Chude, D.I. (2013). "Impact of Government Expenditure on Economic Growth in Nigeria". *International Journal of Business and Management Review*, Vol.1, No.4, pp.64-71

[4]. Eigbiremolen, G.O. and Anaduaka, U.S. (2014). "Human Capital Development and Economic Growth: The Nigeria Experience". *International Journal of Academic Research in Business and Social Sciences*, Vol. 4, No. 4, pp. 25-35

[5]. Eluma, L. and Peter, S. (2017). Effect of Expenditures on Education, Human Capital Development and Economic Growth in Nigeria. *Nile Jounal of Business and Economics*, Vol. 3, No. 5. pp retrieved from http://journal.nileuniversity.edu.ng/ index.php/NileJBE/article/view/89

[6]. Johnson, A.O. (2011). "Human Capital Development and Economic Growth in Nigeria". European Journal of Business and Management, Vol 3, No.9, pp. 29 – 38.

[7]. Kairo, C. I., Mang, N.J., Okeke, A. and Aondo, D.C. (2017). Government Expenditure and Human Capital Development in Nigeria: An Auto-Regressive Distributed Lagged Model Approach (ARDL). *International Journal of Advanced Studies in Economics and Public Sector Management*, Vol 5, No. 1, pp. 143 – 158.

[8]. Mankiew, N.G. Romer, D., and Weil, D.N. (1992). "A Contribution to the Empirics of Economic Growth". *Quarterly Journal of Economics*, Vol. 107. Pp. 407-37

[9]. Ohwofasa, B.O., Obeh, H.O. and Atumah, M. (2012). "Impact of Government Expenditure in Education on Economic Growth in Nigeria, 1986-2011: A Parsimonious Error Correction Model". *African Journal of Scientific Research* Vol. 10, No. 1, pp. 587 – 598.

[10]. Okojie, C. E. E. (1995). Human capital formation for productivity growth in Nigeria. *Nigerian Economic and Financial Review*: June, 44-5.

[11]. Okuneye, B,A., Maku, O.E. and Ayinla, A.T. (2008). "Public Expenditure on Education And Economic Growth In Nigeria". *Journal of Research Development*, Vol.6, No.1

[12]. Oluwatobi, S. O. and Ogunrinola, I. O. (2011). "Government Expenditure on Human Capital Development: Implications for Economic Growth in Nigeria". *Journal of Sustainable Development*, Vol. 4, No. 3, pp. 72-80

[13]. Smith, A. (1776). An Inquiry into the Nature and Causes of the Wealth of Nations Book 2 - Of the Nature, Accumulation, and Employment of Stock; Forgotten Books

[14]. Torruam, J. T. and Abur, C.C. (2014). "Public Expenditure on Human Capital Development as a Strategy for Economic Growth in Nigeria: Application of Co Integration and Causality Test Analysis". *International Journal of Research in Humanities and Social Studies*, Volume 1, Issue 2, pp. 14-23

APPENDICES

Table 1: Result of the Augmented Dickey Fuller (ADF) Unit Roots Test on Variables

VARIABLES	AUGMENTED DICKEY FULLER			
	Level	1st Difference	2nd Difference	Remark
HL	-1.432489	-4.906275*	-	I(1)
lnEDUCATIONEXP	-4.238388*	-	-	I(0)
lnHEALTHEXP	-2.078694	-13.91564*	-	I(1)

Source: *Author's Computation with E-view 7 (2017)*

NOTE**:** One, two and three asterisk denotes rejection of the null hypothesis at 1%, 5% and 10% respectively based on critical value. For the augmented Dickey –Fuller (ADF) test, the automatic maximum lag length based on Schwarz information criterion is applied.

Table 2: Result of the Phillips – Perron Unit Roots Test On Variables

VARIABLES	PHILLIPS – PERRON TEST			
	Level	1st Difference	2nd Difference	Remark
HL	-1.433890	-4.907311*	-	I(1)
lnEDUCATIONEXP	-4.186093**	-	-	I(0)
lnHEALTHEXP	-6.504485*	-	-	I(0)

Source: *Author's Computation with E-view 7 (2017)*

NOTE**:** One, two and three asterisk denotes rejection of the null hypothesis at 1%, 5% and 10% respectively based on critical value. For the Philips-Perron (PP) test, the automatic maximum lag length based on Newey-West Bandwidth is applied.

Table 3: Bound Test Critical Table

Critical Value (Peseran *et al., 2001*	Lower Bound Value	Upper Bound Value
1%	6.84	7.84
5%	4.94	5.73

10%	4.04	4.78
Calculated F-Statistics = 7.172239, K=1		

Source: *Author's Computation with E-view 7 (2017)*

Note: The computed F-statistic: 7.172239 was estimated. Critical Values are cited from Pesaran *et al.* (2001) Table: Unrestricted intercept and no trend. K is the number of regressors.

Table 4: Parsimonious ARDL Model Results

DEPENDENT VARIABLE: D(HL)

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	1.969631	1.794259	1.097741	0.2980
D(HL(-1))	-0.479407	0.236307	-2.028741	0.0700
D(HL(-3))	0.808496	0.268265	3.013741*	0.0130
D(LNEDUCATIONEXP(-1))	-2.791146	0.639327	-4.365756*	0.0014
D(LNEDUCATIONEXP(-2))	-1.473381	0.603116	-2.442949 *	0.0347
D(LNEDUCATIONEXP(-3))	-0.454394	0.241367	-1.882580	0.0891
D(LNHEALTHEXP(-1))	2.502870	0.644274	3.884789*	0.0030
D(LNHEALTHEXP(-2))	1.500175	0.421142	3.562162*	0.0052
D(LNHEALTHEXP(-3))	0.467195	0.219560	2.127873	0.0592
HL(-1)	-0.011024	0.135379	-0.081433	0.9367
LNEDUCATIONEXP(-1)	2.798849	0.740029	3.782078*	0.0036
LNHEALTHEXP(-1)	-2.911812	0.792611	-3.673698*	0.0043
R^2		0.788454		
Adjusted R^2		0.555753		

Source: *Author's Computation with E-view 7 (2017)*

Table 5: Parsimonious Error Correction model/ Diagnostic Tests

	Coefficient	**F-Statistics**	**p-value**
ECT(-1)	-0.373717		0.0146
Normality:			
Jarque- Bera	0.108336		0.947273
Serial Correlation:			
Breusch-Godfrey LM Test		0.533833	0.6685
Heteroskedasticity Test:			
Breuch-Pangan-Godfrey Test		0.752378	0.6342
`ARCH Test		0.590023	0.6310

Source: *Author's Computation with E-view 7 (2017)*

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