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HUMAN CAPITAL DEVELOPMENT AND INDUSTRIAL SECTOR PERFORMANCE: THE WEST AFRICA EXPERIENCE

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Abstract

It is evident that improvement in the industrial sector performance has a direct link with the return on investment in human capital development. There is no doubt that West Africa has witnessed instability, fluctuation and decline in industrial production over the years. Using comparative and trend analysis our paper determined the impact and the relationship of human capital development on the industrial sector performance in West African countries. We utilized secondary data from the United Nations Economic Commission for Africa (UNECA) Databank, Organization for Economic Co-operation Development (OECD), and the World Bank human development indicators from 1990 to 2017. Data were analysed using auto regressive distributed lag (ARDL) and the results were subjected to panel unit root test to ascertain data

consistency. Our results revealed a positive impact of human development index (HDI) on industrial output in West African countries', although this did not trigger much economic growth and industrial output in West African economies. We therefore conclude that West Africa's human development index (HDI) level is inadequate in enhancing its economic growth and industrial output to reach the optimum of developed countries. This result is consistent with evidences of high poverty rates among West African Countries. Hence, we recommend that Economic Community of West African States (ECOWAS) set up efficient economic policy guide to promote human development and industrialization in West African countries.

Keywords: Human capital development, industrial sector performance, industrial output, economic policy

INTRODUCTION

Ferreira (2014) asserted that West African economies lack policies that will promote the judicious use of its abundant natural resources to enable the region enjoy the basic human capital needs that will increase her industrial sector output. Jolliffe (2001) asserts that the human capital development of most West African countries does not translate to an increase in the industrial output and that this is the major reason why poverty has declined much more slowly in Africa than other World regions. According to World Bank (2012a), poverty headcount ratio declined from 54.3 percent in 1990 to 41 percent in 2013. Africa is currently identified as the world's second most inequitable region after Latin America and the Caribbean. In the last 15 years African economic policies has not significantly helped to reduce social and economic poverty inequalities on her continent.

According to Haroon (2018), Africa has higher mean and median level of standard of living inequality when compared with the rest of the developing regions and Africans need to move from being a case of 'regional economic delinquency' to significant global optimism because the impact of growth on poverty reduction is lower when initial inequality and mineral resource dependence are higher. The United Nations (2019) posits that poverty is not a natural phenomenon as often, paradoxically, abundance of natural resources co-exist with widespread poverty, hence its view that poverty is socially constructed globally and can be deconstructed with good and effective local economic policies.

The contending issues contained in the current debates in the West Africa economic development plan is the insufficiency of natural resource exploitations to meet employment and social inclusion expectations, particularly in the area of youth development. Considering this

pressure, African governments make promises of economic diversification which are centered on creating jobs that will boost human capital development (Son, 2010). To achieve this, African leaders strive to key into the industrialization in manufacturing dimensions as detailed in Goal 9 of the Sustainable Development Goals adopted by world leaders in September 2015 (United Nations, 2019). Yet, according to World Bank (2012b), it is evident that the production base of West African economies is globally weak, and are characterized by mundane facilities and unrealistic capital plan, thus making industrializing West Africa a significant challenge. There is no doubt that West Africa is one of the least integrated into the global value chains (GVCs), despite the African Economic Outlook's (2014) acknowledgment of high industrial processing activities witnessed in the region. Ogunleye (2011) makes it clear that the industrial crisis that engulfed the region, ranging from tariff barriers, wars, to other conflicts that occurred in several countries are the major causes of this economic shortcomings.

Available data show that Africa improved in her economic performance (UNECA, 2015). It is on note that the sub continent's gross domestic product reached an estimated 3.5 percent in 2018 improving from 2.1 percent of 2016, while West Africa's GDP is projected to grow systematically to 4.0 percent in 2019 and 4.1 percent in 2020 but the African Economic Outlook (2019) and the African Development Bank (2019) doubt the potency of this growth rate in creating jobs through solving human capital development issues that negatively affect the industrial sector performance as well. Furthermore, there is ample evidence that poor health, knowledge and skills, along with high population growth are impediments on the structural transformation of West Africa's industrial sector needs despite its rapid economic growth (Adeyeye, 2009).

The Organization for Economic Cooperation and Development (2012) reported that West Africa's HDI encompasses low levels of educational attainment and poor health outcomes. With the exception of few North African countries, a child spends an average of 4.7 years in school, these ranges from 1.2 years in Mozambique to 9.4 in Seychelles. It is in stark contrast to the rapidly industrializing countries in East Asia (7.2 years) and the global average of 7.5 years. This implies that available skills in many African countries are likely to be predominantly basic literacy from a primary level education rather than more advanced problem solving and entrepreneurship skills that are developed in secondary and higher education (Schultz, 1992). Many West African countries have less than 50% of their girls and boys of secondary age enrolled in school, with even lower completion rates (UNESCO 2012). One consequence of a low-skilled workforce is that new job seekers move more to subsistence activities and low productive sectors, such as services, that require low skills (Olalere, & Adenuga, 2013). More importantly, the low level of skills act as a barrier to the diffusion of productivity enhancing human capital development of West African countries and negatively affecting their industrial sector performance (Frankel, 2010).

Another bothering issue is the parochial contribution of the service sector of West African countries to the regional GDP by 29.3% in 2005, 51.6% in 2015, while the industrial sector which is the fulcrum of the economy contributed paltry 22.6% of West Africa regional GDP in 2015 (World Bank 2012c). This proved right the imbalance in the performance of the West Africa economy as the study rightly noted because there is a missing developmental link between service sector and manufacturing in fostering and improving human capital development and industrial sector performance. In view of the aforementioned problems, our study outlines the following research questions: (i) What nature of relationships exists between human capital development and industrial sector performance in West African countries? (ii) What impact does human capital development have on West African economies' industrial output? (iii) Does human capital development promote economic growth in West African economy?

Our study is prompted by the slow rate of contributions of human capital development to West Africa's industrial sector performance. It seeks to proffer policy options and recommendations to West Africa's policy makers, analysts, and researchers on industrialization capacity development. In a bid to provide answers to these research questions set in the introductory section, we structured our paper as follows: Section two reviews the literature on human capital development and industrial sector capacity development focusing on the causes of the problems bedeviling West African countries' industrial sector. Section three encloses the study's model and methodology, Section four presents our results while Section five concludes this paper and contains recommendations based on our findings.

THE LITERATURE

According to United Nations (2019), human capital development and industrial sector must be taken seriously by countries that wish to succeed in helping their citizens to realize their potentials as human beings and enjoy averagely the most important basic social amenities. UN (2019) maintains that focus on human capital development and industrialization will help West African countries to reduce extreme poverty, extend gender equality and improve health and education framework rates. Binder and Geogiadis (2011) reiterates that the current drastic reduction in biodiversity is largely caused by human activities and represents serious challenges and threats to human development and industrial performance in West Africa.

Ejemeyovwi (2018) recognizes human development as the strongest predictor of economic development and further revealed that low investments in human capital development have aided in downsizing West Africa's industrial sector performance. This is because human capital development is greatly tied to industrial revolution which is often disregarded by

governments and policy makers in most West African institutions or countries. UNECA (2012) noted that average worker's skill is important but without constant human capital development, labour efficiency in contributing to industrialization and improvement in industrial sector performance across board will be hampered or reduced to its barest minimum considering swift evolution of modern technologies.

We trace the origin of human development back to the emergence of classical economics in 1776 (Fitzsimons, 1999). In examining the link between education and productivity, Schultz (1960) emphasized human resources as the source of economic growth. Modern human capital development theories originated in the 60s with the works of Schultz and Becker (Kern, 2009). Under the framework of human capital theory, as well as the endogenous growth theory, the concept of human capital development can be discussed. Whereas Becker (1964) argued that human capital theory is concerned with schooling, training, and investment in the skilled workers as explanations for increased productivities and workers' efficiencies, Adelakun (2011) proved that empirical studies provide headway for this support.

Integration and focus between the education, skill levels of the workforce leads to increase of technological activities effectively (Nelson & Phelps, 1966). A more educated and a skilled workforce make it less burdensome for a firm to adopt and implement new technologies, thus reinforcing returns on education and training (Izushi & Huggins, 2004). Schultz, Becker, and Mincer introduced the notion that people invest in education to increase their stock of human capital which can be formed by combining innate abilities with investment in improving the human resources (Babalola, 2000 cited in Adelakun, 2011). The provision of education is seen as a productive investment in human capital development, an investment which the proponents of human capital theory consider to be equally useful to economic growth.

Modernization theory is embedded in the research work of McClelland (1961), a social psychologist who attempted to explain the discrepancies between societies in social and technological advancement. McClelland envisaged that some societies are more advanced than others because of differences in cultural and personality styles. The author postulates that advancement is motivated by the need for more human capital development. He claims that children can develop the need for achievement through literature that stresses the significance of self-help, competition and general extroverted behaviour. Thus, modernization theory focuses on how education transforms an individual's value, belief and social behaviour. Modernization institutions such as schools, industries, and mass media introduce modern values and attitudes. The attitude include openness to new idea, independence from traditional authorities, willingness to plan and calculate further exigencies and growing sense of personal and social efficacy. The modernization theorists further explained that instruction need logical and

analytical reasoning to provide technical and specialized knowledge increase in the marginal productivity of workers. Therefore societies that wish to encourage young entrepreneurs can impact them with basic values for achieving such at the right age by creating enabling environment for human capital development. Yalokwu (2002) postulated that organizational effectiveness significantly depends on the motivation the staffs receive through human resource trainings. He further stated that investments in human capital development are in tandem with economic growth if rightly channelled with effective policies. However he emphasised on the need for workers to acquire needed skills, education, and be adequately trained in order to bring about the need innovation in the industrial sector.

EMPIRICAL REVIEW

There is limited empirical literature on the study of human capital development and industrial sector performance covering the 16 countries of West Africa using the auto regressive distributed lag (ARDL) approach. However, there is a plethora of closely related empirical literature. A collaborative study between African Development Bank (AfDB), Organization for Economic Cooperation and Development (OECD), United Nations Development Programme (UNDP) and Economic Commission for Africa (ECA) conducted in 2013 reveals that West Africa faces the highest losses in potential human capital development. This has adversely affected West Africa's industrial sector output. Also, the study asserted that low human development index and low industrial sector output is highest in Central and West Africa and lowest in North and southern Africa. It concludes that African countries with high human development index tend to enjoy higher industrial sector output and industrialization.

The World Bank (2016) carried out a study on human capital development and industrialization Across Africa using comparative analysis, revealed that West Africa's average dependent population as a proportion of the working age population has fallen from 86% in 1960 to 80% in 2010. Their study posits that West Africa have had more modest declines and in a few cases reported increased dependency ratios due to reduced mortality and an increased number of dependent children. The study concludes that the implication is that the burden on the working population is not declining as rapidly in West African countries, diverting resources away from more productive activities and slowing the pace of economic diversification through industrialization and human capital development.

The OECD's (2012) study on gender inequality and human development in Africa revealed that the major cause of gender inequality and low human development in West Africa is the persistence discriminatory laws, norms and practices which restrict the access of women and girls to opportunities, resources and power. The study used data from 86 non-OECD

countries, including 37 African nations, the Social Institutions and Gender Index (SIGI). The study also showed a large variation in performance with South Africa and Morocco ranked fourth and 17th respectively while nine out of the ten bottom-ranked countries were from Africa (mostly West African countries) which includes; Gabon, Guinea, Nigeria, Chad, Benin, Somalia, Democratic Republic of Congo, Sudan and Mali.

The study carried out by African Development Bank (AfDB) in collaboration with Economic community of West African States (ECOWAS) on the performance profile of industrial sector in West African countries in relation to the quality of human capital development using statistical analysis, found out that there is a high percentage of industries in West Africa with low output. (Muktar, 2005).

TREND ANALYSIS OF AFRICAN COUNTRIES HUMAN DEVELOPMENT INDEX (HDI) IN THE CONTEXT OF INDUSTRIAL SECTOR PERFORMANCE

The below tables and figures explains how West African countries fair in terms of human development index, life expectancy at birth, mean years of schooling, GNI per capita, HDI loss due to inequality, gender inequality index, GDP growth rate and industrial output.

Table 1: Losses in human development index due to inequality

Region	Human Development Index	Life expectancy at birth	Mean Years of Schooling	GNI Per Capital	HDI loss due to inequality (%)	Gender Inequality Index
Central Africa	0.466	53.2	4.7	5292	34.1	0.613
East Africa	0.462	59.5	4.4	2635	33.3	0.529
North Africa	0.652	71.3	6.0	6483	28.3	0.424
Southern Africa	0.516	55.5	6.1	4731	30.9	0.516
West Africa	0.427	57.2	3.5	1322	36.2	0.616
Africa	0.486	58.4	4.7	3516	33.1	0.545
Arab States	0.652	71.0	6.0	8307	25.4	0.555
East Asia and the Pacific	0.683	72.7	7.2	6874	21.3	0.333
Europe and Central Asia	0.771	71.5	10.4	12243	12.9	0.280
Latin America and the Caribbean	0.741	74.7	7.8	10300	25.7	0.419
South Asia	0.558	66.2	4.7	3343	29.1	0.577
Africa (excluding North Africa)	0.475	54.9	4.7	3343	35.0	0.577
World	0.694	70.1	7.5	10184	23.3	0.463

Source: UNDP HDR 2015 and author's calculations

From the table above, West Africa has the lowest human development index, mean years of schooling and a high gender inequality index compared to other countries. This shows why the contribution of human development index to industrial sector performance is low and insignificant.

Table 2: Status of human development index in Africa

Very high and high human development	Medium human development	Low human development	
Algeria	Botswana	Angola	Liberia
Libyan Arab Jamahiriya	Cape Verde	Benin	Madagascar
Seychelles	Egypt	Burkina Faso	Malawi
Tunisia	Equatorial Guinea	Burundi	Mali
	Gabon	Cameroon	Mauritania
	Ghana	Central African Republic	Mozambique
	Morocco	Chad	Niger
	Namibia	Comoros	Nigeria
	South Africa	Congo	Rwanda
	Swaziland	Congo, Dem. Rep.	Sao Tome and Principe
		Cote d'Ivoire	Senegal
		Djibouti	Sierra Leone
		Eritrea	Sudan
		Ethiopia	Tanzania
		Gambia	Togo
		Guinea	Uganda
		Guinea-Bissau	Zambia
		Kenya	Zimbabwe
		Lesotho	

Source: UNDP (2016)

Table 2 shows that there is no West Africa country in the very high and high human development index category, while only Cape Verde, Equatorial Guinea and Ghana made it in the medium human development index list in West Africa. Other West African countries are seated comfortably in the low human development category. This is worrisome and buttresses the need for more investment in the human development index in West Africa if it must trigger much growth in the region.

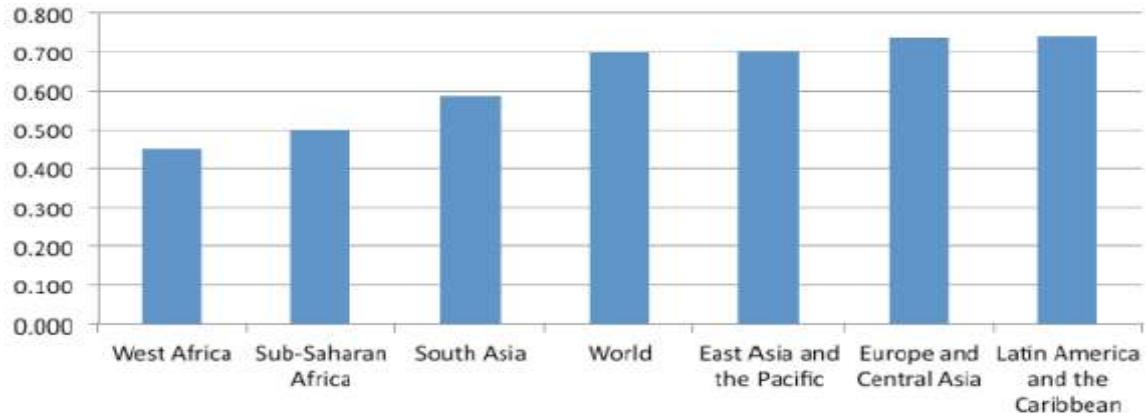
Table 3: Showing Africa gender inequality

Lower gender inequality	Higher gender inequality	Countries with missing data
Algeria	Benin	Angola
Botswana	Burkina Faso	Cape Verde
Burundi	Cameroon	Chad
Gabon	Central African Republic	Comoros
Ghana	Congo	Djibouti
Lesotho	Congo, Dem. Rep.	Equatorial Guinea
Libyan Arab Jamahiriya	Cote d'Ivoire	Eritrea
Malawi	Egypt	Ethiopia
Mauritius	Gambia	Guinea
Morocco	Kenya	Guinea-Bissau
Namibia	Liberia	Madagascar
Rwanda	Mali	Nigeria
Senegal	Mauritania	Sao Tome and Principe
South Africa	Mozambique	Seychelles
Swaziland	Niger	
Tanzania	Sierra Leone	
Togo	Sudan	
Tunisia	Zambia	
Uganda		
Zimbabwe		

Source: UNDP (2015)

From the table above; only Togo, Ghana, and Senegal made it into the category of lower gender inequality in West Africa. Benin, Burkina Faso, Cote d'Ivoire, Gambia, Mauritania, Sierra Leone, Liberia, Niger and Mali have high gender inequality. The data for Cape Verde, Guinea, Guinea Bissau, and Nigeria could not be retrieved to ascertain the category where they belong. However, the above table show that over 80% of the West African countries are facing serious gender imbalance.

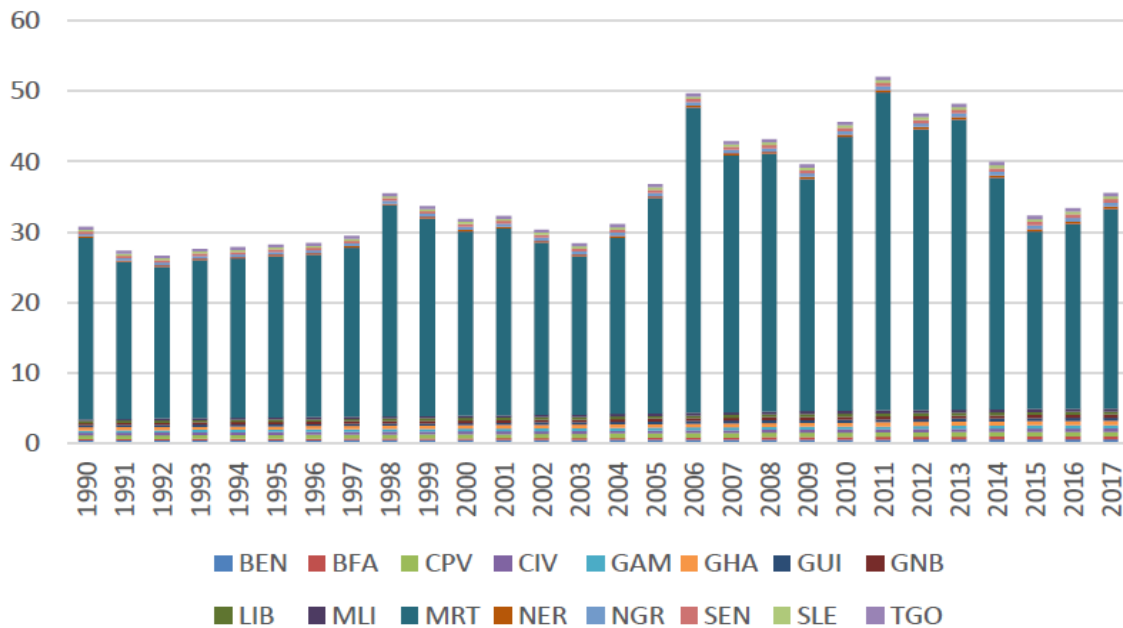
Figure 1: Average score of human development index in West Africa with other regions.



Source: UNDP 2015

Figure 1 above, reveals that West Africa has an average development index of 0.450, this is the reason why most countries in the region are in the category of countries with low human development, with the exception of Cape Verde and Ghana which are classified to have an average human development index.

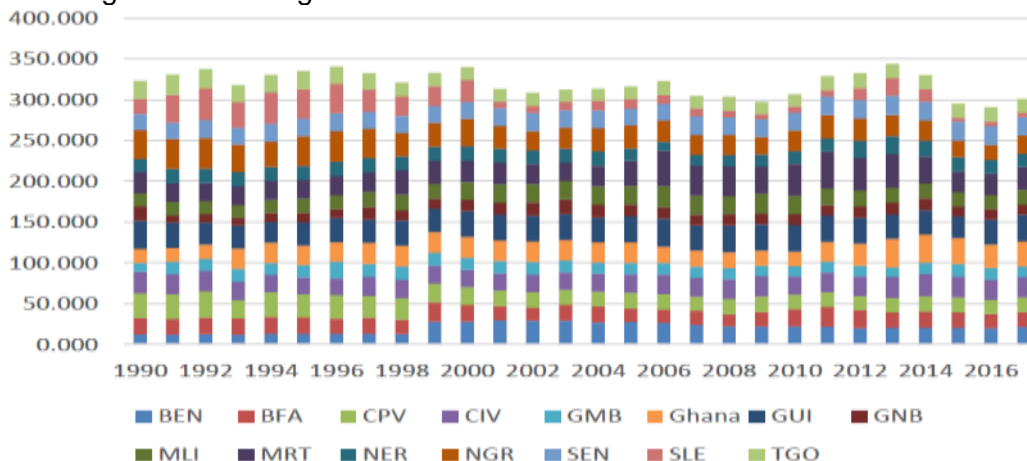
Figure 2: Trends in HDI movement in West African countries.



Source: Authors' computation from West Africa's HDI data used for the analysis

Figure 2 above, is a graphical representation of West Africa's HDI. The instability and decline in the HDI of the region is evident in the graph above. However, only the year 2011 met with the minimum world requirement for human development index for developing countries.

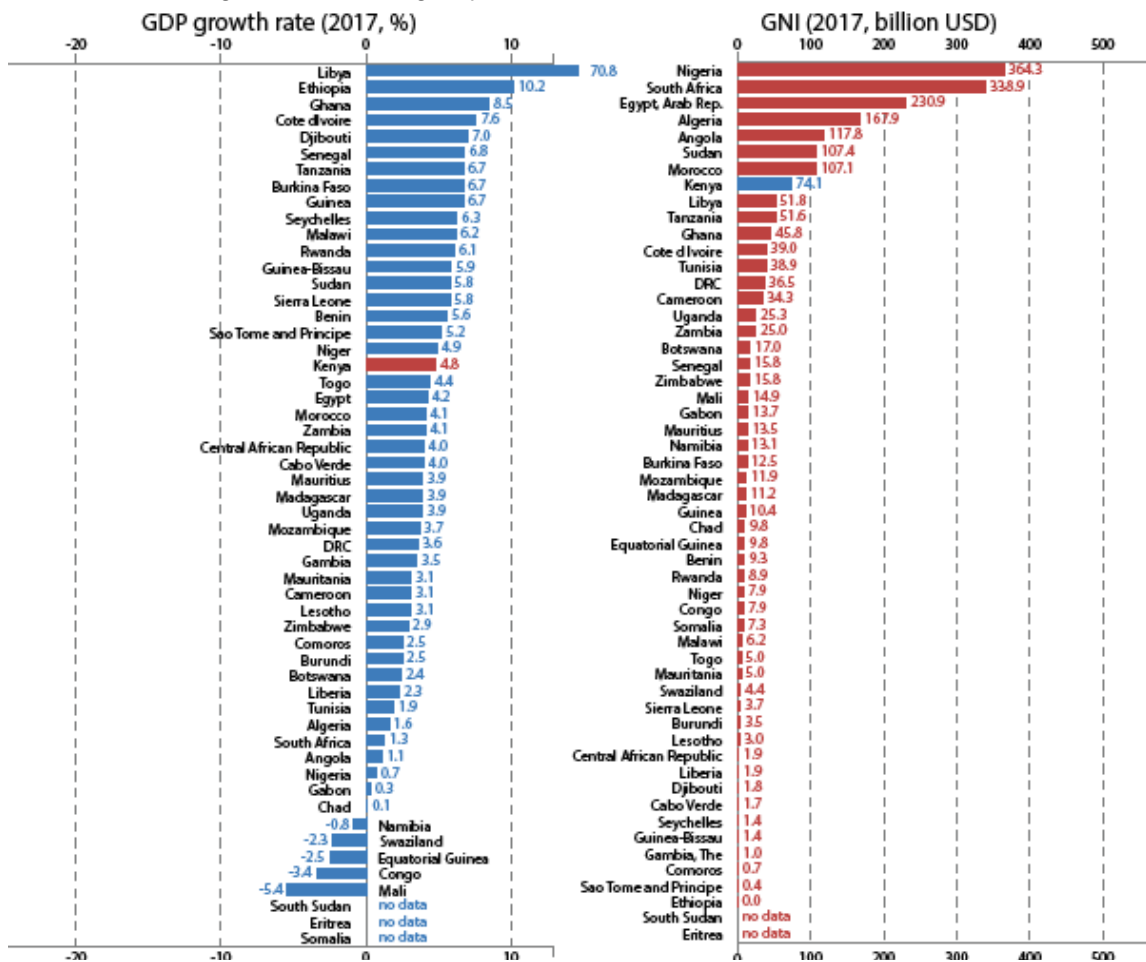
Figure 3: Showing trends in INDGROWTH in West African countries



Source: Authors' computation from IO data used for the data analysis

Figure 3 represents the industrial output of West Africa. It is evident in the graph that in the year 2008, West Africa recorded the highest industrial output, this declined drastically after then which confirms the inconsistency in the regions industrial performance.

Figure 4: Showing key Macroeconomic indicators in Africa



Source: Africa Statistics Flash, UNECA January, 2019

Figure 4 shows the contributions of African countries' gross national income (GNI) and gross domestic product (GDP) growth rates. The point to note here is that West African countries lack behind in terms of GDP growth rate contribution but have very high GNIs which do not transform into economic growth and therefore do not contribute enough to their local industrial sector performance and human development.

RESEARCH METHODOLOGY

We adapted Sen's capability framework following the theory of Binder and Georgiadis (2011). However, our model differs from the aforementioned because we estimated human capital development with industrial sector performance. Human capital development is proxied by human development index. This research utilized panel data and autoregressive distributed lag estimation technique (ARDL). The model estimated in the study is specified below:

$$HDI = f(INDGWTH)$$

$$HDI = \alpha + \beta_1 HDI_{i,t-1} + \beta_2 INDGWTH_{i,t} + \mu_{i,t}$$

Where; $HDI_{i,t}$ is the human development index for country i at period t and $INDGWTH_{i,t}$ is growth in industrial output for country i at period t .

The human development index (HDI) is a summary measure of human capital development and it measures a country's attainment of the three dimensions of human capital development: life expectancy ratio, education level and standard of living. Greene (2003) asserts that estimators are assumed to converge and meet the conditions of law of large numbers, they fulfil the identification conditions and they are asymptotically distributed. An unstable macroeconomic environment is expected to exert a slow pace of economic growth since sustained imbalance in national income translates to decline in per capita income. This in turn provides good opportunities for more rigorous training and capacity building. Following Salleh (1992), a positive relationship between industrial sector performance and human capital development is expected.

The panel data used for this study were sourced from; the United Nations economic commission for Africa (UNECA) databank, organization for economic co-operation development (OECD), and the World Bank human development indicator, the United Nations development programme (UNDP) Publications, international financial statistics data bank (IFS), and international monetary fund (IMF) world economic outlook database. Data for human development index (HDI) and industrial output was retrieved for 16 West African countries from 1990 to 2017. Industrial output is proxied by industrial output growth. The use of times series data is justified because the paper looked at the relationship and prediction of the dependent variable by the independent variables, in addition it is generally accepted in all social science

research. The slow rate of contributions of human development index to West Africa's industrial sector performance from 1990 to 2017 necessitated the use of this period.

RESULTS

We estimated the model formulated in the study; it commenced with a panel unit root test and this was followed by the interpretation of the autoregressive distributed lag (ARDL) estimation technique panel regression results. We concluded with the hypotheses testing. All analyses were done using the E-view version 9 software.

Panel Unit Root Analysis

Table 4: Panel Unit root result for HDI

Panel unit root test: Summary				
Series: D(HDI)				
Date: 06/21/19 Time: 00:54				
Sample 1990 2017				
Exogenous Variables: Individual effects, individual linear trends				
User-specified lags: 1				
Newey-West automatic band width selection and Bartlett Kernel				
Balanced observation for each test				
Method	Statistics	Prob.**	Cross Section	Obs
Null: Unit Root (assumes common unit root process)				
Levin: Lin & Chu t*	-5.51652	0.0000	15	375
Breitung t-stat	-3.82789	0.0001	15	360
Null: Unit Root (assumes individual unit root process)				
Im, Pesaran Shin W-stat	-4.74394	0.0000	15	375
ADF- Fisher Chi Square	78.3625	0.0000	15	375
PP- Fisher Chi Square	378.017	0.0000	15	390

** Probabilities for Fisher test are computed an asymptotic Chi

- Square distribution. All other tests assume asymptotic normally

The panel unit root test results for HDI as contained on Table 4 reveal that the variables were initially non-stationary at level but became stationary at first different 1(1) which permit us to continue to the next level of analysis.

Table 5: Panel Unit root test result for INDGRWTH

Panel Unit root test Summary				
Series: D(INDGWTH)				
Date: 06/21/19 Time 00:54 Sample: 1990 2007				
Exogenous variables: Individual linear trends				
User-Specified lags: 1				
Newey-West automatic bandwidth selection an Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob**	Cross Section	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.75494	0.0000	15	375
Breitung t-stat	-5.63206	0.0000	15	360
Null: Unit root (assume individual unit root process)				
Im, Pesaran and Shin W-stat	-10.6927	0.0000	15	375
ADF-Fisher Chi-Square	154.883	0.0000	15	375
PP-Fisher Chi-Square	741.820	0.0000	15	390
**Probabilities for Fisher tests are computed using an asymptotic Chi-Square distribution. All other tests assume asymptotic normality.				

Panel unit root and stationarity tests have gained more popularity and it is widely used in large scale simulation studies (Jaroslava & Martin 2005). Since it has been implemented in more commercial software, the panel unit root test results for INDGRWTH as contained on Table 5 show that the variables became stationary at first different 1(1) which permits the researcher to continue to the next level of analysis.

Table 6: Panel regression results for HDI and INDGRWTH

Dependent Variable: D (HDI)
Method: ARDL
Date: 06/21/19 Time: 00:55 Sample: 1992 2017
Included observation: 390
Maximum dependent lags: 4(Automatic selection)
Model selection Method: Akaike info Criterion (AIC)
Dynamic regressors (4 lags automatic): INDGWTH
Fixed regressor C
Number of model evaluated: 16
Selected model: ARDL (2,1)
Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. error	t-Statistic	Prob*	Obs
Long Run Equation					
Short Run Equation					
INDGWTH		0.008706	0.001894	4.59588	0.0000
COINTEQ01		0.004299	0.009205	0.46702	0.6408
D(HDI(-1))		0.121171	0.072048	1.68179	0.0935
C		0.004130	0.002350	1.75754	0.0797
Means dependent		0.005736	S.D dependent	0.004124	
Var			var		
S.E of regression		0.003552	Akaike info	-7.893880	
			Criterion		
Sum Squared resid		0.004529	Schwarz	-7.307081	
			criterion		
Long likelihood		1718.715	Hannan-Quinn		
			criter		

Table 6...

From the regression results shown on Table 6, the coefficient value represents the mean change in the response given a one unit change in the predictor. Since the coefficient is 0.009 approximately it means that HDI will influence INDGRWTH by 0.009% in the long while in the short run it will only influence INDGRWTH with 0.0002%. The coefficient indicates a positive long run relationship between variables. Since coefficient value predicts how much the value of dependent variable will increase or decrease with increase of the independent variable. Therefore, the coefficient value of HDI is not significant to influence much INDGRWTH since it's merely 0.009% increase in per unit shift in the long run period. The standard error of 0.002 indicates that the observations are closer to the fitted line in the long run. This is because the standard error represents the average distance that the observed values fall from the regression line. The p-value of <0.001 shows that the results is highly significant in the long run. The t-statistics shows that the coefficient is significant with >95% confidence interval.

Gujarati (2004) asserts that two variables are cointegrated if they have a long-run relationship between them. The Johansen (1991) likelihood ratio test statistics, the trace and maximal eigenvalue test statistics, were utilized to determine the number of cointegrating vectors. The decision rule states that we reject the null hypothesis if the probability (P value) is less than 5% (0.05). This conforms to the panel ARDL econometric result that the null hypothesis is rejected. Hence, we conclude that human development index has failed to trigger much industrial growth despite having a long-run relationship with industrial sector performance during the period 1990–2017.

CONCLUSION AND POLICY RECOMMENDATIONS

Human development index has positive relationship in explaining industrial growth in Benin Republic, Burkina Faso, Cape Verde, Ivory Coast, Gambia, Ghana, Senegal, Sierra Leone, Togo, Mauritania, and Niger, while it has negative relationship in explaining industrial growth in Guinea, Guinea Bissau, Mali, and Nigeria. However, the findings of this paper yield conclusive results to support the hypothesis of this paper. This is because the main determinants of human capital development that are expected to drive industrial output and promote economic growth are significant which makes it easy to make conclusions on the actual effect that human development index has significant long run relationship with industrial performance. Though, this relationship has not lead to boom in the industrial growth of the West Africa country's economy. This study still adds to the existing literature and knowledge gap that raise troubling questions regarding whether aid resources are actually being used for the intended purposes of enhancing human development through social programs in West Africa by reinforcing the problem data quality and availability in respect to West Africa.

It is observed from the research findings that the West African economy depends so much on the service sector which has adversely affected the human development and industrial performance. This is evident in the weak private sector which has slowed the pace of productivity increase in industrial output in many West African countries, and has limited the improvement in human development index, due to the lack of investment in infrastructure, skilled work force and technological advancement. Furthermore, the slow pace of job creation in industrial sector which cannot contain the growing population is another major issue. This shortcoming has weakened human development and industrial performance in West African countries. Therefore, the researcher concludes that, given the growing body of evidence that the large sums of money spent on institution development and industrialization in West Africa countries is falling far short of the mark in terms of measurable outcomes, and the accountability of invested sums must be checked, if human development and industrial performance will see the light of day.

We recommend that the Economic Community for West African Countries (ECOWAS) should improve her human development and industrialization policy by putting in place a policy that is both achievable and beneficial to the country. This policy should be the one that will promote human development and industrialization plan. Also efforts should be geared towards improving the training aspect of human development as this impact significantly on workers performance which inevitably impact directly on industrial output and will promote FDI into the West African countries.

West African leaders and policy makers need to, as a matter of urgency, begin to implement policies that will focus on human development through total industrialization of their various economies. The Coalition of West African government should give special attention and support to human development and industrial sector to help boost her performance by raising the people's standard of living and overall economic development through the adoption of favourable human development and industrialization policies that will drastically change the adverse effects of low human development index to positive one.

West African leaders especially those of Nigeria, Senegal, Sudan, Eritrea, are thus encouraged to evolve policies aimed at closing the gap between the *haves* and the *have not* if they hope to achieve the milestone target of UNDP's human development index by 2030 (UNIDO, 2019).

West African governments and development partners like UNDP, OECD, IMF, World Bank and so on, must integrate the private sector and development partners' efforts to enhance human skills to create competitive economies that will promote human development and industrialisation for domestic and regional markets and attract foreign direct investment. Gender inequalities can be reduced drastically through the education of the girl child.

In-line with the limitation of this paper which was the difficulty in getting other empirical literature in same topic, data for some countries, and limited time frame, the researcher therefore recommends that the Nigerian Economic Society should make it a point of focus for social science researchers in the area of human capital development and industrial sector performance, this is a major untapped area in West Africa and it is a major cause for underperformance of their industrial sectors. This will aid the availability of both theoretical and empirical literature for upcoming researchers to leverage on in order to develop their work hence creating an enabling environment for robust and concise results with modern estimation and analytical technique employed.

More research is needed to test for the hypothesis of this paper. There is a need for further investigation of a significant long run relationship between human development and industrial performance specifically, through the inclusion of more key determinants of human development in the econometric model.

Our paper has been able to point out from its results and findings, that human development index has a short and long run significant relationship with industrial performance, considering the fact that the results revealed that industrial sector output will be triggered more by high human development index. Therefore the more the human development index increases it in-turn increases industrial growth. This implies that human capital development

should be promoted and given utmost priority in order to positively influence West African economic growth and development to meet the MDG 2030 target.

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