



Research Article

Financial Development, Human Capital Development and Economic Growth in Sub-Saharan African Countries

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Received: 28 November 2022; **Accepted:** 25 May 2023; **Available online:** 20 June 2023

Abstract: Over the years, there has been a pressing need to improve the state of human capital development and financial development, to pay more attention to it and the benefits it holds in the economy. However, this has not been the case in the Sub-Saharan Africa region, as there has been a major decline in comparison to the other regions of the world. The study examined the relationship between financial developments, human capital development on economic growth in Sub-Saharan African (SSA) countries. The data collected for this research work was obtained from the World Bank, for the 45 Sub-Saharan countries for twenty-four years (1997 to 2020). Descriptive analysis was used to analyze the data set; while panel regression analysis and unit root, testing was also carried out. The results of the study indicates that financial stability and human capital development (education) has significant relationship on the economic growth in Sub-Saharan African countries. The study therefore recommends that the government should attach a higher level of importance to human capital development as well as financial access to ensure economic growth in Sub-Saharan Africa.

Keywords: Financial development; Human capital development; Economic growth; Nigeria

1. Introduction

The caliber of human capital, according to economic development theorists, influences hugely on the real Gross Domestic Product (GDP) of any economies in the world. Labour, one of the factors of production, enhances the school of thought that the morale of employees as well as other factors ensure production that will enhance economic growth. Finance on the other hand promotes economic development, when banks and securities markets pool family wealth to invest in promising projects, therefore, corporate efficiency is increased, while waste and fraud by insiders are reduced (Cihak, Demirgüç-Kunt, Feyen, & Levine 2013).

The growth of people and the appropriate use of their strengths, resources and abilities ultimately determines a nation's prosperity and vitality. Humans are significant players of development because they are

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DOI: <https://doi.org/10.37256/ujfe02010001>

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the only creatures capable of accumulating wealth, harnessing mineral resources, developing, and constructing societal and governmental organizations (Sharma, 2016). It has been a general argument as to whether the quality of human capital development as well as development of the financial sector of the economy has a strong positive influence on economic growth. Despite the several arguments, there are still a major decline in the development of financial markets, and the financial sector and development of education, health in the society, especially in the African countries.

Therefore, there is a need for a plan to improve on human capital development and financial development in Africa, as refusing to invest in human capital development is like having a portion of good food, but refusing to use the appropriate cutlery to eat it. The real change in society either comes in the form of development or declination.

Financial sector development in developing countries and emerging markets is an important component of the corporate sector strategic plan for encouraging economic growth and eliminating poverty. One of the many aims of financial sector development is to minimize the cost of accessing financial institutions such as banks, insurance companies and many others. When a nation focus and nurture on the development of a country's financial sector, economic growth will be augmented (Durusu-Ciftci, Ispir & Yetkiner, 2017).

The main problem of this study is the major decline in the state of human capital development and financial development in the Sub-Saharan African countries compared to the other regions of the world. It has affected negatively on the economic growth of the African countries in the areas of labour forces (physically and mentally), raw materials and productivity. The interaction between financial development and human capital and economic growth has received little research in sub-Saharan African countries.

Therefore, this study addressed the issue of financial and human capital development in the area of education, which has been a general problem confronting the Sub-Saharan African countries.

2. Literature Review

2.1 Financial Development

The financial sector, according to the World Bank (2021), consists of a legal framework, regulatory organizations, tools, and marketplaces that permit activities involving the deferment of payment of debts. The financial sector's expansion intends to reduce the costs the financial institutions generate. The development of intermediaries, financial contracts, and markets was a direct result of this tendency to reduce the costs of information gathering, contract enforcement, and transactions.

Sehrawat and Giri (2016) assert that advancements in the financial industry have improved the scope and caliber of services provided by financial intermediaries. The improvement in the effectiveness, stability, and scale of financial markets, along with easier access to financial markets, provide evidence of these financial system advancements (Guru & Yadav 2019). Poor infrastructure among other factors had significantly contributed to the low rate of financial development in sub-Saharan Africa as compared to other region, (Abeka, et al. 2021; Bist, 2018).

There are five ways financial systems could promote long-term growth; obtaining information about investment opportunities, facilitating trade in goods and services, mobilizing and pooling savings, enabling risk management, and practicing corporate governance in line with financial position. According to IMF (2019), although the standard indicators of financial development, such as the ratio of private sector credit to Gross Domestic Product (GDP) and broad money to GDP, have significantly improved over the years. This provides some form of evidence that improving financial development by building telecommunication infrastructure will make the sector more effective in improving the level of economic growth.

Mobile money has underpinned a radical improvement in the delivery of financial services in sub-Saharan Africa in recent years. Therefore, "the region has become the global leader in mobile money innovation, adoption, and usage, with close to 40 out of 45 sub-Saharan African countries actively using this new financial technology" (IMF, 2019). Ibrahim (2018) argues that contemporary world development indicators (WDIs) practiced in various countries have had steady growth rates, which in part drive financial deepening with the growth of the financial sector playing a significant role.

2.2 Financial Development

People invest in themselves through activities like education, learning, or other initiatives that increase their earning power and potential earnings. The core of the global economic growth plan is human capital.

Human capital is the most human-related inclusive wealth component, and it accounts for the majority of the total wealth among other categories of capital assets; produced capital and natural capital (Munir & Arshad, 2018).

There are lot of studies that view human capital development in different ways; education, training, health, migration and other factors that can increase labor productivity and boost the nation's gross domestic product (GDP). Human capital is significantly influence by population size, educational achievement, and health-care quality. The processes related to education, training, and other professional initiatives to increase an employee's level of knowledge, skills, abilities, values, and social access (Sarwar, et al. 2021)

Education as knowledge and can be divided into two aspects, namely, knowledge through formal education and knowledge directed at possible opportunities to evade tax (Oladipo, et al. 2022). Better-educated individuals are more knowledgeable, less risk-averse, and greater savers. Thus, increasing education rates and adult education provide people with new chances for empowerment. The increase in the performance of businesses in any nation would largely influence the human development, hence leading to economic growth.

Therefore, it is necessary to establish strategies to maximize the benefits of this very significant resource by creating learning structures and institutions that would enable human capital's capacity to increase in the years to come.

Theoretical Background

The fundamental tenet of the theory of endogenous growth is that as capital stock (all these physical and human resources) expands, positive externalities are produce to improve productivity. According to the endogenous growth theory, rather than outside forces, internal causes control economic growth to a greater or lesser extent.

Romer (1986) telecommunications could be a key driver of the technical advancement, factor spillovers, and human capital enhancement required to boost economic growth internationally.

Therefore, the technical change's spillover effects may work in conjunction with labor from the financial industry to accelerate the economic development of nations that pursue financial development methods. Developing nations have comparatively less technological advancement since their technological advancement is insufficient.

When studying technical advancement and human capital individually, the effects on growth are comparable to those shown. However, this time, we assume that there are decreasing returns to human capital in the generation of final output and education. Young (1995) noted that while human capital represents the economy's long-term response to growth rate, long-term growth is caused by independent-scale increases in product quality and hence does not exhibit non-linearity. Given that the capacity to produce human capital heavily influences the rate of economic growth, the opportunity for investment is determined by the accumulation of human capital.

2.3 Empirical Review

Human capital has dominated growth literature since the introduction of Romer's (1986) endogenous growth theory, which contends against preceding neoclassical growth theory. When capital is efficiently allocated to human capital, the return can revert to a stable return to scale despite diminishing and low return to scale. A long-term economic growth model in which human education capital is included as a production input, increasing marginal production and growth over time.

Romer (1986) argue that a country with a large human capital size may grow considerably faster than a country with a small human capital size.

Munir and Arshad (2018) conducted a study on the impact of stock of human capital and real physical capital to investigate the long-term and short-term effects on Pakistan's economic growth. The result reveals that the level of employment, per capita income, labor productivity, and the sources of economic growth are all increased by accumulation elements of human capital and real physical capital. Rosendo Silva et al. (2018) carried out study on the impact of human capital on economic expansion. The results indicate that having greater health has a big, positive impact on economic growth because healthier workers are more productive at work. Neeliah and Seetanah (2016) investigate the long- and short-term benefits of the link between human capital and economic growth. The study found a bidirectional relationship between human capital and economic growth of rising eighty-nine (89) countries in the world. The key conclusion was that any shock to the growth of human capital can kill off economic expansion, so policymakers must take human capital into consideration.

Fixed-line and mobile telecommunications, according to Donou-Adonsou et al. (2016), have a favorable and considerable effect on the economic growth of SSA economies. However, there haven't been many

discussions of theoretical and empirical contributions that address the complementing function of telecommunications in the relationship between financial development and economic progress in Sub-Saharan Africa. Using a sample of twenty-one (21) sub-Saharan African countries between 2000 and 2014, Ngongang (2015) attempted to analyze the relationship between financial development and economic growth. The study's findings suggested that the underdeveloped financial systems of sub-Saharan African economies might be to blame for the lack of such a relationship.

In the same vein, in a review study published in 2015, by Nyasha and Odhiambo examined the theoretical and empirical connections between market- and bank-based financial development and economic growth in both developed and developing nations. They concluded that the direction of the casualty relationship is strongly influenced by the methodology, data sets, and various study-related factors used in each country.

Sehrawat and Giri (2017) also examine the impact of male and female human capital on India's economic growth individually. The statistical findings show that female human capital is statistically significant, beneficial to the development, and boosts labor productivity in both the short- and long-term. Male human capital, on the other hand, contributes positively but unexpectedly little to growth.

The study found a long-term causal association between physical capital, human capital, and both male and female capital.

This study's general objective is to examine the impact of human capital and financial development on economic growth in sub-Saharan African countries. Following are the relevant null research hypotheses on which this research is based on:

Ho1: There is no significant relationship between financial access and economic growth in Sub-Saharan African countries.

Ho2: There is no significant impact of education on economic growth among Sub-Saharan African countries.

3. Methodology

This study adopted a set of panel data of forty-five (45) Sub-Saharan African countries from 1997 to 2020. The selected time interval and the number of countries were because of the availability of data. Data related to all the variables used in this research was collected from WDIs, listed on the World Bank website. The sampling size of this study were 45 Sub-Saharan African countries, as data from Comoros, Sao Tome and Principe as well as Guinea are unavailable. There was no sampling technique utilized in this study, as the population size is also the sample size.

The study used two financial development indicators; foreign direct investment (net flows as a percentage of GDP) and domestic credit to private sectors (percentage of GDP), that is financial resources such as loans, commercial credits and other receivable accounts. The human capital indicator used was education, tertiary education enrolment. This study uses two control variables, namely: Population and Trade Openness. The dependent variable Gross Domestic Product (GDP) as an indicator of economic growth in the country.

Model Specification

This study adopted the model of Owusu-Agyei et al., (2020) with slight changes in order to examine the impact of human capital and financial development on economic growth in the Sub-Saharan African countries.

The general form of the equation:

$$GDP = f(FID, HCD) \quad (1)$$

In equation 3.1, GDP is the gross domestic product, FID is the financial development and HCD is the human capital development.

From the equation 3.1 above, it was converted into equation (2) by breaking the constructs in measuring variables and incorporate the control variables.

$$GDP = f(DCPS, FDI, HCD, POP, TRD) \quad (2)$$

From equation 3.2 above was extended to include mathematical signs and error term to get equation (3).

$$GDP_{it} = \beta_0 + \beta_1 Dcps_{it} + \beta_2 Fdi_{it} + \beta_3 Hcd_{it} + \beta_4 Pop_{it} + \beta_5 Trd_{it} + e_{it} \quad (3)$$

In equation 3.3, β_0 is the intercept or the constant term, $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are the parameters for the independent variables Domestic credit to private sector(Dcps), Foreign direct investment (Fdiit), Human capital development (Hcd), Population (Popit) and Trade openness (Trdit) respectively. The subscript 'it', is the period while eit, is the stochastic error term.

Table 1. Measurement of Variables

S/N	Variable Acronym	Variable Meaning	Variable Type	Variable Measurement
1.	GDP	Gross Domestic Product (Economic Growth)	Dependent Variable	The sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of product.
2.	DCPS	Domestic credits to private sectors	Independent Variable	Financial resources such as loans, commercial credits and other receivable accounts (% of GDP)
	FDI	Foreign direct investment	Independent Variable	Net inflows (% of GDP)
	HCD	Human capital development (Education)	Independent Variable	School enrollment, tertiary education
3.	POP	Population	Control Variable	Total number of people living in a particular geographic area or cou
	TRD	Trade openness	Control Variable	Sum of imports and exports of goods and services measured as a percentage share of gross domestic product.

4. Results and Discussion of Findings

In order to examine the impact of financial development and human capital development on economic growth in selected Sub-Saharan countries, so as to identify, the financial access, financial stability and teaching & learning in the countries, this study used descriptive econometric analytical tools and panel regression to analyze the forty-five (45) selected Sub-Saharan African countries (SSA) for 1997-2020 period.

Table 2. Descriptive Statistical Analysis

	HCD	DCPS	FDI	TRD	POP	GDP
Mean	7.982199	22.11063	4.098567	67.36457	6.942452	6.996438
Median	5.587005	15.15000	2.393232	57.91226	7.080000	6.991051
Maximum	44.39153	151.0000	103.3374	216.4832	8.210000	8.633637
Minimum	0.320690	1.100000	-11.19897	1.377797	4.940000	5.857835
Std. Dev.	7.638619	24.53845	7.867884	33.52612	0.606579	0.529763
Skewness	1.908271	3.155752	7.203951	1.284556	-0.837312	0.460702
Kurtosis	7.311420	14.44358	75.19501	4.959007	3.715858	3.709785
Jarque-Bera	721.1067	3714.694	117878.6	227.0274	72.14074	29.42299
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	4166.708	11541.75	2139.452	35164.30	3623.960	3652.140
Sum Sq. Dev.	30399.57	313712.6	32251.78	585604.4	191.6955	146.2178
Observations	522	522	522	522	522	522

Source: Author's Compilation (2022)

Table 4.1 above shows the descriptive statistics of HCD (Human Capital Development) has a mean score of 7.98, which means that on the average, human capital is equal to 7.982 with a standard deviation of 7.6, which is lower. The minimum value is 0.32 while the maximum value is 44.39. This is because of active human resources leaving Africa for developed countries in Europe and America. Therefore is need for more human capital development in Sub-Saharan African countries.

The average score is DCPS (Domestic Credits to private sectors)) is 22.110 with a variability of 24.53, which is higher. The minimum and maximum days for DCPS are 1 and 151 respectively. It implies that private sectors have access to financial resources that will financial development. FDI (Foreign Direct Investment) has a mean score of N4 million. This means that on average, countries made a foreign investment of N4 million with a standard deviation of N7.86 million. The minimum amount is -N11million, which is a loss while the maximum amount is N103million. It implies that majority of developed countries do not want to invest in Africa because of insecurities (Boko Haram menace, kidnapping) and economic crises. Trade openness (TRD) has a mean value of 67.36 with a high variation of 33.52. This means the number of trades among Sub-Saharan Countries on the average is worth N67million. The minimum amount of openness is 1 million while the maximum is N216million. The control variable (POP) which represents Population has an average of 6 million people in the Sub-Saharan Africa with a standard deviation of 600 thousand people. The minimum people are 1 million while the maximum is 8 million individuals in the region.

The dependent variable (GDP) has a mean value of N6million which means on an average, the addition of the imports and exports of the Sub-Saharan equals N6 million with a standard deviation of N529 thousands. The minimum value is worth N5 million while the maximum value is worth N8million.

Table 3. Panel Regression Analysis

Dependent Variable: GDP	
Method: Panel Least Squares	
Date: 06/03/22	Time: 10:58
Sample (adjusted): 1997 2020	
Periods included: 24	
Cross-sections included: 42	

Total panel (unbalanced) observations: 522

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4892.527	2926.059	1.672054	0.1184
HCD	0.025693	0.001920	13.38091	0.0000
DCPS	0.002473	0.000588	4.202792	0.0000
FDI	-0.006956	0.001413	-4.924540	0.0000
TRD	0.005247	0.000325	16.16712	0.0000
POP	0.923498	0.003039	303.8369	0.0000

R-squared	0.798076	Mean dependent var	6.996438
Adjusted R-squared	0.796514	S.D. dependent var	0.529763
S.E. of regression	0.238973	Akaike info criterion	-0.015400
Sum squared resid	29.52490	Schwarz criterion	0.025383
Log-likelihood	9.019271	Hannan-Quinn criter.	0.000574
F-statistic	26.00235	Durbin-Watson stat	0.066063
Prob(F-statistic)	0.000000		

Source: Author's Compilation (2022)

$$GDP_{it} = \beta_0 + \beta_1 DCPS_{it} + \beta_2 FDI_{it} + \beta_3 HCD_{it} + \beta_4 POP_{it} + \beta_5 TRD_{it} + e_{it} \quad (3)$$

GDP = 4892.527+0.002473Dcps-0.006956Fdi+0.025693Hcd+0.923498Pop+0.005247Trd+ ei ----- regression equation

Table 4.2 above shows the panel regression analysis, the adjusted R-squared of 79% implies that there is strong positive relationship between the independent variables (Financial development and Human capital development) and the dependent variable (Gross domestic product) and significant at 5% level. From the above analysis, Domestic credits to private sectors with coefficient of 0.002473 and t-statistics of 4.20%; Foreign direct investment with coefficient of -0.006956 (negative) with t-statistics -4.92%; Human capital development with

coefficient of 0.025693 with t-statistics of 13.38%. While the control variables, Population with coefficient of 0.923498 with t-statistics of 303.83%; Trade openness with coefficient of 0.005247 and t-statistics of 16.16%. It implies that domestic credit to private sectors, human capital development (education) and the control variables had positive significant relationship with the gross domestic product, except for foreign direct investment, which has negative relationship with the gross domestic product. This indicates that insecurities (kidnapping, book-haram menace etc.) and economic crises discouraged developed countries from investing in Sub-Saharan African countries.

Table 4. Unit Root Testing at Level

ADF AT LEVEL VARIABLES	ADF STATISTICS	REMARK
DCPS	0.7174	NON-STATIONARY
HCD	1.0000	NON-STATIONARY
FDI	0.0000	STATIONARY
TRD	0.4017	NON-STATIONARY
POP	0.9990	NON-STATIONARY
GDP	1.0000	NON-STATIONARY

On the application of ADF test at level, FDI (Foreign Direct Investment) indicated by the fact that their probability is less than 0.05 or 5% while the remaining (DCPS, HCD, TRD, POP, GDP) are non-stationary as indicated by the fact that their probability is greater than 0.05 or 5%. Hence, we accept the null hypothesis of FDI which indicate that they all contain a unit root with probability lesser than 0.05. Since DCPS, HCD, TRD, POP, GDP are NON-STATIONARY at levels, there is need for first difference.

Hypotheses Testing

Ho1: There is no significant relationship between financial access and economic growth in Sub-Saharan African countries.

From *table 4.2*, the coefficient value of the financial development variable domestic credit is 0.002473 (positive) and significant to growth, indicating that financial development increases economic growth. Therefore, the study rejects the null hypothesis and accept the alternate that there is significant relationship between financial access and economic growth in sub-Saharan African countries. This is in line with the study of Sarwar et al. (2021), on financial development, human capital and its impact on economic growth of emerging countries. This also corroborates with the findings of Bist (2018) on “Financial Development and economic growth: Evidence from a panel of 16 African and Non-African low-income countries.”

Ho2: There is no significant impact of education on economic growth among Sub-Saharan African countries.

From *table 4.2*, the coefficient value of the human capital development (education) is 0.025693 (positive) and significant to growth, indicating that education has direct impact and increases economic growth. This implies that human development capital also has a positive and considerable influence on growth. This finding is not in agreement with the study of Sarwar et al. (2021) which reveals that the coefficient value of the human capital variable (primary pupil-teacher ratio) is -0.1114 (negative) and significant to growth. The findings of the control variables also indicate that population and trade openness have a positive and significant impact on growth in sub-Saharan African countries.

5. Conclusion and Recommendations

This study examine the impact of financial development and human capital development on economic growth in the selected sub-Saharan African nations, utilizing foreign direct investment, domestic credit to private sector and tertiary school enrollment. In evaluating the impact of financial development and human

capital development on economic growth which implies that the combined impact of human capital and financial development has a positive and significant influence on economic growth in the Sub-Saharan African countries

The unit root test indicates that all variables were integrated at the first difference. As a result, a long-run connection between variables is possible. The study therefore recommends that government should attach a higher level of importance to human capital development as well as financial access to ensure economic growth in Sub-Saharan Africa. Therefore, African countries and their government need to put in place measures and policy to end insecurity and economic crises in order to enhance economic growth and development.

Limitation and future study of research

The data set is limited to 45 sub-Saharan African Countries. The period for the study is 1996 to 2020. Future studies can be done by increasing the time of the study or to a specific region of the world. More variables could be added for more deep studies, and comparative analysis can be done among different countries.

Conflict of interest

No conflicts of interest are declared.

Funding

The authors received no fund for this study from any organizations.

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