

DETERMINANTS OF HUMAN DEVELOPMENT IN SUB-SAHARAN AFRICA

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ABSTRACT

Using a sample of 111 countries, this study examines regional differences in human development by comparing the growth of human development in Sub-Saharan Africa (SSA) with that of the rest of the world. Results indicate that there are significant differences between SSA and other regions in terms of the rate of growth of human development. In addition, the results indicate that the percentage of GROWTH in human development is higher than the percentage of GROWTH in gross domestic product (GDP). The results also indicate that human development growth rates of developing countries are lower than those of developed countries. Additionally, the results indicate that human development growth rates of developing countries are lower than those of developed countries.

INTRODUCTION

Despite reported gains in life expectancy and education levels for the average people in the world, about one billion children remain malnourished and less immunized because they are expected to live longer by two years. There are three million deaths daily due to malnutrition. 20 million fewer children out of school and more than 10 million people have escaped extreme poverty. Within the major income categories of the world, it can be seen that some countries in Sub-Saharan Africa (SSA), that have had world leaders in social and development goals, for instance, the average life expectancy at birth was about 63 in the early 1980s (United Nations, 1998).

years in 2002, far below the rates in South Africa and India but far above 65 and 70 years respectively in the same year (UNDP, 2003, pp. 104–105; World Bank, 2004, Table).

To implement and sustain them a concerted social intervention with strong reliance on Africa's unique government policy instruments seems imperative, supporting it by a set of specific policies. Some of the factors that are determinants of human development must be addressed in order to provide a sustainable socio-economic development. But all the integral mechanisms will have to act in concert if human development is to strengthen its impact on human development in the SSA region.

Given that the main strategy adopted in this study is to examine the relative contribution of selected socio-economic variables on human development as observed in 2002 using a set of cross-country data and a multiple regression analysis, the rest of the article is organized as follows. Section 2 presents an overview literature on factors that determine on the development and the measure of human development in SSA. Section 3 provides the data source and the methodology proposed for the study. Section 4 discusses the results. The conclusions and recommendations follow in the last section.

HUMAN DEVELOPMENT: MEANING, MEASUREMENT, DETERMINANTS AND ATTAINMENT IN SUB-SAHELIAN AFRICA

Meaning and Measurement of Human Development

According to the UNDP (2004), human development is a process of enhancing people's lives and, in principle, their lives can be bettered and can change over time. But at all they can change and this can take place only if the people so live in a way as to leading life. Human know-how and the material resources needed for a decent standard of living. From the above, three concepts are clear. First, the whole range from biological, economic and social freedom to opportunities for more education, more productive and improved personal well-being, are generalized human needs.

In addition to the above are the following human development areas: (i) the formation of human capital, such as improved human knowledge and skills; and (ii) the use, people make of their acquired knowledge or skills for better productive performance being active in a social, social and political arena (UNESCO, UNDP (1990); UNICEF, 1994; Swanson, 1995).

Related to this definition is the measurement of human development based on three overall measures of human life-longity as measured by Human Development Index (knowledge and education), and which is measured by a combination of adult literacy (three-fifths) and gross enrollment primary, secondary and tertiary institutions with planned targets and those in being measured as measured by the UNDP's principal measure (HDI). The education component of HDI measured at a school is early age. The second relates to literacy - being able to have the word of reading and writing in one's own language. The third relates to having standard in terms of overall education, particularly (Kaufmann et al., 2001; UNDP, 2005).

Determinants of Human Development

Fundamental to human development is economic growth, decreased levels of macroeconomic stability that makes possible inflation, stable exchange rate, low interest rates and a stable, or absence of civil conflict. As Post (1987) put it, macroeconomic stability plays a very key role in income generation, growth, trade and the rest. The history of the last century has seen the long run, according to most indicators, the industrializing, but decentralized, savings, investment and efficient development of countries, provided of a steady and exchange rate which reduces the cost of living while insulating production and the economy from external price of products. This has been a characteristic of most of the developing countries, which helps to ensure the level of respect for individual development and overall the development of a free market that could righteously not impede human development efforts (World Bank, 1991-1997; Subramanian, 2004; Dell and Wolff, 2005).

As observed by UNDP (2007), the activities to which people can improve their capabilities include participation in the labour and the market they have to know, grow, and live in. The growth and equal distribution of personal assets is one of the critical elements in improving human development. Human capital has the power to increase the income standard. The most important role goes to education, as it has been argued, as it is the production and outcome of people's health care services and its availability and appropriateness (UNDP, 2007a; 2007b).

The UNDP (2007b) also uses human capital as a conceptual framework of human development. This section is based on the concept of human development. The focus is on the enhancement of the capacities and freedoms for the members of a community to live and function right from the perspective of their individuality, have the confidence of individual and collective agents, and at the design of social arrangements or institutions, especially capabilities and freedoms.

The UNDP (2007) advocates global partnership in development and development assistance. This partnership will be mutual and in case there may be conflicts, solved by governments. Further, it encourages the development of a sustainable future, particularly the expansion of library resources which can have the potential of increasing the quality of the sustainable peaceful environment and peace in global perspective. Also, it is based on the motto for human security where violence through armed conflict or other illegal means of eliminating people who are given certain privileges of human rights and human rights projects.

Investments in technology and in education are also mentioned as an important constituent of human development, since better people are better equipped with tools that will help them more productive and innovative. Moreover, technology is central to the areas of health, nutrition, crop yields and employment. They usually have a high rate of return compared to a normal cycle-increasing physical knowledge, healthy and productive life, and a more sustainable building capacity for future.

involves the participation of business, the involvement of government, information and communication technology, mobile phone communication and their interaction in ways which are more effective socially, economically, politically and culturally to promote a sustainable environment (WITP, 2001).

Son (1997) also underlines the importance of politics and government. As he maintains 'if there are three groups, especially a society and a party, who will be involved in the process, I would like to see things that could lead to the good society. Then, it is important to be able to have access and the right to be involved. It's a direct involvement. People will be involved in order to make the addition of the people take place. In other words, we can obtain the political, economic, technological and social integration in the developed country'.

Karayannidis (1999) suggests that the concept of group is not just one of the developmental processes or human development, but also when people participate in the developmental process from their own lives. Hence, he sees society as human development to improve society participation in policy making, sharing and in encouraging a positive life perspective on people. He also referred to a collective process of a group to work in objective, as a process of human individual's contribution to the group activities. As a goal driven concept, it encompasses the above mentioned four characteristics of group, as well as their contribution to a society designed for real life (Adler and Blodgetts-McClellan, 1994 and Vlastaras and Petal 1997, UNDP 1998).

Having analysed this, provided by theory and facilitated by also an empirical review in human development, as observed by Ward (1997), it is possible to conclude, for example, trade, work and enterprise are significant because economic and social development are essential overhead capitals key elements in national and the international private firms will not get started without functioning efficiently and effectively when the infrastructures that provide the basic infrastructure, reliable, systematic, disseminated, fair, down and transparent. And public areas that generate directly and indirectly services that benefit the

people, with the right to sue for the moral quality of life of the people (Arendt, 1951).

The existence of such governmentality is a condition of a new generation for improved human development. Arendt (1951) argues that good government implies that the government is the agent that has the right to make decisions in the development of society and affect their lives. Further, the government's responsibility is to make accountability, openness and transparency for their actions so that citizens can have their say and feel a sense of control over their political life.

As illustrated by Arendt (1951), Dewey (1922), Lippmann and Schlesinger (1945) and Collier et al. (1992) good governance is a form of social and economic liberalism that includes, such as the protection of individual freedoms, such as pluralism and free media. The role of government, in response, and its function is to serve and implement an alternative element of social freedom, that is, to have greater checks, voice and influence over officials' government. This is often referred to as 'citizen participation'. However, growth for the improvement of government cannot be the sole aim since there could be lower regulation and fewer obstacles to individual economic opportunities.

Related to the above, is the change of democracy and its contribution to human development. As suggested by UNDP (2002), democracy is a particular approach to rule based on values, principles or people's concerns regardless of culture, personal and institutional differences. As an ideal, democracy aims to protect and promote the dignity and fundamental rights of the individual, and it should also assist human development and social development. Democracy is a political system that enables people to freely choose an effective, honest, transparent and accountable government. The theory of democracy is based on four core principles: participation and accountability. These are the right to participate from the management of public affairs. However, democracy has the right to access, to know, to monitor or government activities, to petition government and to seek redress through impartial administrative and judicial mechanisms. Democracy is also one that is based on human rights and founded on the principle of the

the other school-related measures and its dependent impact of educational attainment and child health outcomes (UNDP, 2005).

The Situation of Human Development in Sub-Saharan Africa

Available data on human development indicate that gains in human development have been less impressive in Sub-Saharan Africa (SSA) compared to other regions of the world (Table 1). This analysis is based on a recent literature review of the metrics employed in social and development goals which have led to better educationally and nutritional reduction of life expectancy at birth and reduction in child mortality. When viewed from the point of view of Human Development Index (HDI), a composite metric that assess three dimensions of human welfare (income, education and health), it is observed that the countries in SSA have suffered improvements, recently, which are likely to account for stagnation of HDI growth in education and health while failing to bring down the high rate of corruption and the spread of HIV/AIDS. Another criticism concerns the terms of the analysis such as the grouping of SSA African countries together with South Africa (11 places for Zimbabwe and 11 places for others; see UNDP, 2005) and UNICEF (2005).

Table 1. Human Development Indicators in Sub-Saharan Africa and some European Countries

Region	1980 rank	1990 rank	2000 rank	2005 rank
Africa	170	170	170	170
Sub-Saharan Africa	170	170	170	170
East and South Asia	90	100	100	100
Latin America and the Caribbean	100	90	90	90
Central and South Asia	100	90	90	90
Central and South Asia excluding China	100	90	90	90
Europe	100	100	100	100
Source:	UNDP (2005)			

DATA SOURCE AND METHODOLOGY

Data Sources

A total of 6000 data drawn from 11 countries in SSA for the period 2000 were used. Appendix 1 lists variables considered for the study and the following discussion focuses on developing countries and includes some descriptive statistics related to education level, literacy level, access to basic health services, health care services, access to sanitation facilities, the level of economic activities, the extent of informal job, the extent of regional production and international trade, the extent of foreign direct investment (FDI), the level of economic poverty programs and percentage of government debt as share of gross domestic product.

The data were collected from World Development Bank, Gender, Poverty and Environmental Indicators in African countries for the year 2000; United Nations Development Program's Human Development Index for the year 2000; the World Bank's Africa Development Indicators for the year 2007; the World Bank's Development Indicators also for the year 2007; the Global Economic for the year 2004-2005 from the World Bank.

Methodology

The Model

In specifying the model, emphasis is given on whether the following variables can be used as determinants in human capital in SSA:

Having stated that, the model is then formulated as:

$$\begin{aligned} \text{HDI}_{it} = & \alpha_0 + \alpha_1 \text{GDP}_{it} + \alpha_2 \text{DPI}_{it} + \alpha_3 \text{EDU}_{it} \\ & + \alpha_4 \text{FDI}_{it} + \alpha_5 \text{Poverty}_{it} + \alpha_6 \text{Trade}_{it} \\ & + \alpha_7 \text{FDI}_{it} \times \text{Poverty}_{it} + \alpha_8 \text{FDI}_{it} \times \text{Trade}_{it} \\ & + \alpha_9 \text{Poverty}_{it} \times \text{Trade}_{it} + \epsilon_{it} \end{aligned}$$

Model multiple linear relationships (MLR)

$$\begin{aligned} \text{HDI}_{it} = & \alpha_0 + \alpha_1 \text{GDP}_{it} + \alpha_2 \text{DPI}_{it} + \alpha_3 \text{EDU}_{it} \\ & + \alpha_4 \text{FDI}_{it} + \alpha_5 \text{Poverty}_{it} + \alpha_6 \text{Trade}_{it} \\ & + \alpha_7 \text{FDI}_{it} \times \text{Poverty}_{it} + \alpha_8 \text{FDI}_{it} \times \text{Trade}_{it} \\ & + \alpha_9 \text{Poverty}_{it} \times \text{Trade}_{it} + \epsilon_{it} \end{aligned}$$

Variables:

IDE: Multinational owned firms receive the most attention, so I will use foreign language, education attainment and real GDP per capita income (PPP \$) in each country.

Share of exports: The share of exports in GNP of each country is the sum of exports of chemicals, food, apparel, and other goods.

Days until democratic government: Currently I am using the following: starting at the point in which a country becomes predominantly 2nd or full democracy.

Debt: I am not including it because these years have not been countries that have had substantial debt related issues.

Inflation: = log of the percentage change in the CPI. This is used to account for inflation, both the relevant domestic price changes and the effects of exchange rate movements in each country.

Interest rate: = log of interest rates in percent provided by the nation's central bank (7.7%).

Interest rate: = log of external debt, expressed in thousands of millions of US dollars, divided by population (0.0002).

GDP: = log of gross domestic product, expressed by the residents of a country to acquire a living, either in megabucks or in their own local currency (0.05).

IT: = International trade products, expressed in the average value of the GNP of a country, imports and exports of goods and services (0.05).

Infrastruct: = log of roads in kilometers per square kilometer of land area (0.0001).

Population: = log of total population expressed by the number of people in 1961 plus one (average is double digit population growth rate).

Unemployment: = log of the unemployment rate expressed by the number of people without jobs divided by the number of people in the labor force (0.0001).

- infant mortality, $\log(\text{age} \times \text{percentage of the population with secondary education})$ and $\log(\text{percentage of the population that can read a newspaper})$ (the health services for local transport by air plane than road) in each country;
- INTERPOL** = $\log(\text{air traffic regulation applied to seaport and coastal port cities})$ and $\log(\text{air traffic regulation applied to inland port cities})$;
- INTERATL** = $\log(\text{percentage aged 15 to 29 years that are living with HIV/AIDS})$ in each country;
- PIB** = $\log(\text{per cent foreign population})$; respectively, $\log(\text{foreign government and organization by country})$ ($\log(1 - \text{percentage of foreign population})$);
- PIB2** = $\log(\text{percentage of foreign population})$ and $\log(\text{percentage of foreign population})^2$.

2. Statistical tests

To compare the results, a logistic regression model is used to calculate the probability status of the variables. To verify the validity of the model, we have conducted a ROC analysis for each of the dependent variables based on the true and negative of the outcomes of the variables under investigation, and the statistical distribution of statistical theory with the obtained results. We referred to the Hosmer and Lemeshow Test for fitting of the model (Hosmer, Lemeshow, and Sturdivant, 1982). It concerns with the overall explanatory power of the dependent variable in the Poisson regression modelling the overall significance of the regression analysis and the test is used to assess the individual significant contribution of the independent variables.

However, from the consideration of other heterogeneity in dependent behaviour of the independent variables on the dependent variable in the model and in order to obtain a better fit of the model, we used the log-likelihood ratio test (LR test) to compare the two models, which is defined as follows:

RESULTS AND DISCUSSION

The results of the multiple regression analysis on the five panel level of data are presented in Table 2.

Table 2: Regression Results of the Determinants of Human Development Sub-Sector Output

Variable	Co-efficient estimate and standard error
ln(GDP) _{i,t}	2.74(0.177)
Crude oil _{i,t}	-0.26(0.121)
Steel _{i,t}	1.52(0.12)
Minerals _{i,t}	-1.19(-0.66)
Industrial _{i,t}	+0.93(0.149)
Trade _{i,t}	1.72(0.141)
Ind. capacity _{i,t}	-2.65(-2.45)
In PCT _{i,t}	0.04(0.001)
R _{i,t}	-0.29(-0.11)
ln(GDP) _{i,t-1}	0.23(0.126)
ln(Techno _{i,t})	2.64(0.219)
ln(Mineral _{i,t})	-0.70(0.121)
ln(Ind. Min _{i,t})	-0.46(-0.21)
ln(Industrial _{i,t})	0.06(0.12)
ln(CDVs) _{i,t}	-2.14(-0.329)
ln(PCT _{i,t})	-2.36(-1.34)
R	0.71
R ² Adjusted	0.65
T	7.55
N of observations	41

Source: Own work.

The regression model (1) is model shows that the R² is 0.72, moreover, which is the situation in which the explained variable is influenced by the explanatory variables, while the model seem explained the variance 72 percent, which are known in the study that can not be included in the model because of country evaluating factors. At the pattern level of signs are significant, except that the model is useful in determining of the

epidemiologic studies indicate any significant difference on the dependent variable by the dependent variable which is 5.96% less than the above mentioned value of 13%.

In terms of the individual sociodemographic variables, the significant difference just the associated factors of the extent of smoking, education, age marital status, income level, family size, marital, psychological problems, access to medical services, marital status of healthy care services, access to insurance and the persistence of HPV-16/82 also the reported men, the following sociodemographic factors were non-significant in terms of the sociodemographic variables related to human papillomavirus infection. The effect of these variables is discussed in the following.

The negative impact of the extent of smoking, education, marital status and the persistence of HPV-16/82 on the dependent variables that there seems to have some correlation and has an independent role of the community for women, for example, the women with the age, and marital status are more susceptible. In countries like Democratic Republic of Congo, Uganda, Kenya, South Africa, India, Russia, Thailand and China, it is found that the people more educate and immediately found their wife's breast the sign of pre-existing disease although still being able to live normal life despite of health and economic issues, and out of income, the family member goes to the hospital, park, roads and the broader place of income of income. Therefore, China, the Horn of Africa and the Western Sub-Saharan countries have similar percentages on HPV group in countries like Mexico, Egypt.

The high incidence of HPV-16/82 and the other 14 types in our country, more especially in the Southern African countries like South Africa, Lesotho, Swaziland and South Africa has also been less estimated on human papillomavirus. The migration of rural areas to urban developed can be due to urbanization. People may increase in the population due to change of industries and deterioration of services and the decline in government funding. In 1990, several countries on the

Government officials would be given the job... Xinhua and the BBC, 1996, March 2000, 102-3, 2003, www.NEF.org

The particular forms of mobility like the collapse of democratic governments, access to economic resources, access to food, technological progress, changes in economic policy, education, and access to health care encourage human mobility. But such mobility can also disrupt the environment, in human development, for instance, in the past few years Africa, so-called 'the world's rising economic miracle' advanced, but amid the still too much rapid growth in mobile phone penetration. Sub-Saharan growth in several SSA countries exceeded 12% annually (2004). This was six-eight connections per 100 people across the continent (Telecom Review 2004). In Uganda it took just five years from the time a state plan called for the number of mobile phones (connections per 100 people) to exceed the number of fixed line connections with Africa's largest country, Nigeria. Despite

already low mobile phone rates or the continuing movement towards even an increase in the rate of HIV by the percentage growth of 10% in most countries. There is also the right to good health as being able to take in relative clean air. The mobile phones has also transformed the efficiency of health care provision in poor countries. In Kenya and Tanzania the Africa Medical and Research Foundation (AMREF) is using phones to allow patients to know when to be admitted to specialty doctors far away in AMREF's Headquarters. Another project has built a management structure based on mobile phones to enable access to AIDS clinics to those far afield. For every 10 hours they are providing this (Tele-Diaries, 2006).

However, the mobility, international trade, FDI, largely and the movement of capital did not make much to the outcome of the study because they fall short of our selection aspiration. Some factors such as the deterioration in terms of quality of life between October 1995 of the corresponding reported data in comparison in the international history, after one month in 1995 the migration in Africa for example River Nile, River Niger, Congo River and River Obira (all in share), the river in pre-

Barriers to health care are numerous, political patronage, non-political opposition, especially in countries with political democracy, institutional agents of totalitarian regimes like Uganda, Zimbabwe, North Korea and Saudi Arabia (Brennan 2000; Elshafie 2001).

CONCLUSION AND RECOMMENDATIONS

An empirical study of the relationship of human development in SSA has added to our understanding of health care and a more specific suggestion can also. Some of the determinants of underdevelopment include intersectoral poverty, income, education, food, political stability, history, local access to services, access to health care services, access to sanitation facilities, the level of economic activities, the extent of external debt, the extent of natural resources and international trade. In addition to all this, the level of technological progress, the presence of a currency and the absence of natural disasters. Of these variables, it is evident that all of them, the presence of corruption, protectionism, the incidence of natural disasters, access to economic resources, educational right of the masses to food, technological progress, access to sanitation facilities, access to health care services, income, the education and the prevalence of HIV/AIDS related low economic growth, stable macroeconomic stability, the export of goods and services, FDI, foreign aid and access to water are extremely important variables.

These variables have still not disappeared, so although the world has changed the situation

- Protection of human security and consequences, the prevention and managing of conflict, inflation, disease and natural disasters. One of the best ways to prevent and reduce violent conflicts is by changing democracy and

¹Journal of Economic and Social Development, Vol. 12, No. 2, April 2002. Copyright © 2002 Journal of Economic and Social Development. Printed in the United States of America. ISSN: 1062-1024. The journal is published twice yearly, the regular issue in February and the special issue in October. Volume 12, Number 2, April 2002. Subscriptions: \$100.00 per volume, \$60.00 per issue. Single copies \$30.00. Back issues \$30.00. Subscriptions should be sent to the publisher at the address above.

social development. Hence there will be the high level of participation and accountability of social services delivery. When governments have made possible such the reduction in poverty, child labour and income poverty and the best way to ensure sustainable rural development by mitigating economic incentives for population in the people living from the rural areas is to increase the food production.

Reduction of urban unemployment and opportunities that widen the productive services and capabilities to participate in agriculture with influence should had had accessible technologies, the most appropriate for the promotion of rural economy the economic impact on the developing areas.

Problems in sectoral policies, especially agricultural, environmental and health policies are important role in people development but create the income and taxation imbalance requirement needed to socio-human development.

Problems on a rural dimension, which is mainly that will increase slum-type settings and circumstances, help to ease the flow of resources for production, investment and facilitate the implementation of technological advances.

Partners or linkage institutions in working force between the donor countries agencies and the African government and its citizens who are in providing for developing their national development strategy, in particular because the government and the citizens in both the former designating their national standards to support the governments' strategy, in order to operate a more efficient of funds meant for the development.

In addition to the above is the need for a strong service and the implementation of the "link" in development cooperation. ¹⁰ Specifically, the "link" of information exchange that can facilitate rural development.

The eight agenda areas are that focus on the economy of most countries of the subregion, namely: education, environment,

- more recent by the government and others are in this same direction to be noted here.
- (v) Prevention: Statistics on health issues of HIV/AIDS that affects the government functionaries or the citizens that it has to take measures. Funds can be used to place on the prevention of the disease for the public and government officials. In this, lesson learned of past the total experience will be useful. The expenditure relating the safety of food and food production be used to carry on this aspect here.

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Table 1 Percentage of total available water retained by different soil textures

Soil texture	Sand (%)	Silt (%)	Clay (%)	Total (%)
Sand	100	0	0	100
Sandy loam	70	20	10	100
Silt loam	20	70	10	100
Silt	10	80	10	100
Sandy clay loam	50	30	20	100
Silty clay loam	20	50	30	100
Silty clay	10	80	10	100
Sandy clay	50	20	30	100

Note: Clay content = 100 minus sand and silt content.

SL = sandy loam; SL = silty loam; CL = clay loam; SC = sandy clay; SL = silty clay.

SC = clayey sand; CL = clayey loam.

SC = clayey loam; CL = clay.

* = 1 September 2007; ** = 1 August 2008; *** = 1 October 2008; **** = 1 November 2008.