

## Investment in Human Capital through Institutions of Higher Education for the Revival of Kenya's Economy

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*Despite economic theory postulating that increases in investment in human capital and physical capital leads to increase in economic growth, in the Kenyan case, this has not been true. This paper empirically examines the contribution of human capital and physical capital to economic growth in Kenya. Measures to be undertaken by higher education institutions in revamping Kenya's real economic growth by investing in human resource development are recommended.*

**Key word :** Human Capital, Economic Growth, Higher Education

Kenya's real economic growth, like that of many African countries, has been disappointing over the years. It is a truism that the quality of input that the country has, which is determined by the quality of labor, has enormous impact on economic growth through the production process. But quality of labor is determined by investment in human capital through the quality of education and training program offered.

Structural rigidities prevalent within the economy hinder growth (World Bank, 1983; Larson, 1994). This has resulted in the collapse of manufacturing enterprises over time while those still in operation are underutilized due to low effective demand in the domestic market. Several public projects have become unproductive while physical infrastructure has deteriorated over the years. The public debt has increased over time (Republic of Kenya, 2001) thereby worsening the fiscal deficit situation. Most financial institutions have collapsed or are on the verge of collapse due to enormous bad and unrecoverable debt, unfair competition due to globalization and leadership issues.

An economy must have a pool of human capital and knowledge required for development. Without the skills and knowledge, human capital, remains underutilized. This results in breakdown and unnecessary wearing out of machines. Material and components are wasted and the quality of production falls leading to high cost of production and eventual collapse of the production entities. Global wealth today is concentrated largely in factories, land, tools and machinery (World Bank 2000). Knowledge, skill and resourcefulness of the people are therefore increasingly critical to the world and national economies. Knowledge is and has been at the center stage of economic development (Nafukho, 2005; Nafukho & Wawire, 2000; Lewis, 1962; Schultz 1962; Harbison & Myers, 1974). As the World Bank (1999) noted, knowledge enlightens the lives of people and is crucial to any development effort. Economic equality of the population remains low when there is little knowledge of a viable natural resource, viable alternative production techniques, necessary skills, existing market conditions and opportunities and in situations that might be created to favor economic growth (Jhingan, 1989, p. 39).

The existence of surplus labor in the Kenyan economy is due to shortage of critical skills. The underemployed human capital in the economy is manifested in low productivity, factor immobility, limited specialization in occupation, cultural, traditional, leadership, and limited investment in technology. High quality labor is developed in a high quality education system with tertiary education providing the advanced skills that command a premium at the workplace (World Bank, 2000). As the World Bank (2000) and Nafukho (2004) note, lifelong learning should be encouraged to help workers adjust to rapid change taking place in the society. Education and training is therefore very important in greasing the wheels of economic growth. Kenya as a nation must continually invest in high quality education and training that is needed for economic growth and development, hence the critical role of HRD.

### Problem Statement

Kenya's economy is at a crossroad. Real economic growth has been disappointing over time (Republic of Kenya, 2001 & 2005). The main factors of production that affect economic growth and are therefore critical in the rapid development of the Kenyan economy are physical capital and human capital.

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Economic theories postulate that increase in the quantities of human capital and physical capital will lead to increased economic growth. However, in Kenya, growth in age employment and capital formation has taken place without corresponding rate in economic growth.

On the average, growth in real GDP has always been below the average growth rate in age employment and physical capital formation. This implies a residual difference between the rate of increase in real GDP and the rate of increase in physical input. In this regard, it is argued that there are other salient factors that have enormous effect on economic growth apart from the input of labor and physical capital. The researcher seeks to demonstrate that investment in human capital measured in terms of quality of input, is influenced by the quality of human capital stock. But the quality of human capital stock is determined by quality of education and training provided through HRD program existing in the organization and in the entire economy.

Given the low residual and disappointing economic growth rate which is in contrast with the average labor and capital formation rate, it is argued in this paper that higher education in institutions and colleges in Kenya do not produce graduate who are a proportionate skill and body of knowledge needed to increase productivity. The higher education system creates job seekers instead of job creators because the graduates lack critical skill and relevant body of knowledge required at the workplace. There is a deficiency of a well-developed entrepreneurial class motivated and trained to organize resources for efficient production. The existing deficiencies in critical skill and relevant body of knowledge have caused the declining economic growth.

### **Purpose of the Study**

The main purpose of this paper is to investigate the contribution of human capital and physical capital to economic growth in Kenya. The researcher also seeks to know how institutions of higher education in Kenya need to be re-oriented in order to provide the critical skill needed to fuel economic growth. To achieve the objective of the paper, theoretical and empirical analysis of the relationship between economic growth, human capital, physical capital formation and higher education and training is conducted.

### **Research Questions**

The following research question guided the study:

1. What relationship exists between investment in human capital (measured by labor input in the study) and economic growth in the Kenyan economy during the year of investigation (1972-2000)?
2. What relationship exists between investment in physical capital and economic growth in Kenya's economy during the year of investigation?

### **Literature Review**

According to Smith (1776), economic growth is affected by availability of natural resources, growth in physical capital, organization (which relate to optimum use of factors of production in economic activities), division of labor and scale production. Economic growth is also affected by structural change, which implies the transition from a traditional agricultural society to the modern industrial economy. The process involves a radical transformation of existing institutions and social attitudes including motivation. The factors lead to increased employment opportunities, high labor productivity, increased capital stock, exploitation of new resources and improvement in technology. Other non-economic factors that affect economic growth include social attitudes, cultural values, institutions, efficient human endowment, political, administrative and leadership factors.

Technical progress is one of the major factors that affect the rate of economic growth. This relates to change in the method of production as a result of new techniques of research or innovation. Change in technology leads to increase in productivity of labor, capital and other factors of production (Kuznet, 1959, Lewis, 1962, Meier, 1991, Harbison & Myers, 1974, Denison, 1962, Scott, 1981, Solow, 1957, Schultz, 1962). Kuznet (1959) identified a pattern in the growth of technology as scientific discovery, invention, innovation and improvement and spread of invention.

Bird (1993) and Bruton (1965) asserted that the stock of applied technical knowledge, availability of natural resources and various social and cultural characteristics affect the level of output through their effect on the stock of available capital and labor force. However, the level of available resources depends largely on the state of technology and technical improvement implemented through formation in physical and/or human capital and organizational change. The social and cultural characteristics include market organization, the extent and

effectiveness of the price system in allocating resources, the level of institutional development and governance among other. Therefore, growth is an outcome of the increase, which represent a heterogeneous collection of physical capital and workers with different skill level (human capital). Solow (1957) study established that growth depended on the level and composition of demand in an economy. It is determined that more than one half of the growth in the real output for U.S. from 1909 to 1949 is attributed to technical change rather than growth in the physical quantities of the factor of production. Denison (1962), using data from U.S. economy, concluded, among other, that about 40 percent of the technical advances were explained by improvement in the quality of labor force. The result indicated the strong role that investment in human capital through education and training can have on the growth process. It became evident that a high priority must be assigned to investment in human capital in addition to stock of physical capital.

Several other studies on economic growth confirm the importance of investment in human capital (Levi; 1962, Scott; 1981, Harbison & Meyer; 1974, Meier; 1991; Schultz; 1962). The studies indicate that output increase at a higher rate than could be explained by an increase in the input of labor and physical capital only. The residual difference between the rate of increase in output and the rate of increase in physical capital and labor income is

Denoting the rate of growth of output  $y$  per unit of time  $\frac{dy}{y}$  by  $g_y$ , the equation become :

$$g_y = g_A + \frac{\epsilon_f}{\epsilon_K} \frac{K}{f(K,L)} g_K + \frac{\epsilon_f}{\epsilon_L} \frac{L}{f(K,L)} g_L$$

But  $\frac{\epsilon_f}{\epsilon_K} \frac{K}{f(K,L)}$  is the elasticity of output  $y$  with respect to capital input (K), which can be represented as  $e_K$ .

And  $\frac{\epsilon_f}{\epsilon_L} \frac{L}{f(K,L)}$  is the elasticity of output  $y$  with respect to labor input (L), which can be represented as  $e_L$ . The

disturbance term ( $\epsilon$ ) is introduced to capture the effect of random variable and the growth equation become :  $g_y = g_A + e_K g_K + e_L g_L + \epsilon$ . Where  $\epsilon$  is a disturbance term with its usual assumption. This is the growth accounting equation that is estimated (see also Nicholson; 1992, .317). The equation shows that growth in output ( $g_y$ ) can be broken down into growth attributed to change in labor input ( $g_L$ ), physical capital ( $g_K$ ) and other residual growth that represent technical progress ( $g_A$ ). There are three possible ways that technical change factor ( $g_A$ ) enter the production function. Namely: Neutral technical progress which affect all the input equally, capital augmenting technical progress which affect only capital and labor augmenting technical progress that affect only the quality of labor used in production. Here, workers learn how to do their job better.

## Methods

### Data Collection

To achieve the objective of the paper, secondary data were collected and analyzed. Time series data for the

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attributed to technical change and other factor rather than growth in the physical quantities of capital and labor. Table 1 shows further the estimated elasticity figure of 0.43 for labor which implies that a 10 per cent increase in labor will bring about a 4.3 per cent increase in GDP. While a 10 per cent increase in capital will bring about 0.7 per cent increase in output (GDP). This means that labor has relatively a larger influence on output (GDP) than capital. However, both elasticities are less than one (unit) implying that growth in real output (GDP) is less sensitive to change in both labor and capital inputs. The total factor of production cannot therefore be solely relied upon to generate economic growth to support the development process in Kenya. Technical progress to be generated from the higher education institution must play an active role in improving the quality of human capital so as to accelerate economic growth.

## Discussion

This paper has examined the economic situation in Kenya. It has been determined that deficiency in critical skill and relevant knowledge has caused low economic growth rate. A model is built that captures the contribution of technical progress to economic growth. The empirical evidence shows that change in physical capital has a less, although significant effect on economic growth than change in labor input. This implies that labor input is among the most important factors that determine economic growth in Kenya. Well-qualified and skilled labor is therefore required to turn the economy around. Universities and colleges must provide quality education and training in order to improve the quality of the available labor force. This is because education and training play a crucial role in the growth process.

Advances in knowledge and diffusion of new ideas are necessary in reaming Kenya an economy. Work competence and motivation that are favorable to economic growth must be taught. Since effective use of physical capital depends on human capital, priority must be given to growth in the quality of human resource. Other than technical progress, low quality professional and administrative human resource will limit the rate at which additional physical capital is utilized.

Kenya's economic growth can be accelerated through emphasis on vocational, technical training, distance learning and adult education in addition to increased enrolment of formal education (Nafukho, Amutabi & Otunga, 2005). Priorities need to be established for various forms of education and training through frequent monitoring and planning. This will enable planners to meet the set target of the required manpower. Kenya must realize that unless the right kind of education and training is provided, attaining overall educational target will have little meaning. A Meier (1991) asserted, educated people who are unable to find suitable jobs not only fail to add to the GDP but also become a source of political instability. The existence of surplus labor in Kenya is due to shortage of skills as indicated by the empirical result of this study. Higher education institutions should therefore concentrate on providing informal and functional education, which are less time consuming, less costly and more related to manpower requirements than a formal educational system.

This paper argues that the declining economic growth in Kenya can be reamed through human capital development that emphasizes specific labor program targeting adult learners. The critical skill and knowledge needed to increase economic growth in Kenya must be acquired through higher education and training. It is shown in the paper that lack of critical skill and knowledge within the Kenyan labor force has hindered economic growth over time. This is blamed on the recent higher education and training system, which does not provide critical skill, that command a premium at the workplace. Lifelong learning and various degree, diploma and certificate programs offered should be emphasized (Nafukho, Amutabi & Otunga, 2005).

The higher education institutions in Kenya under emphasize science, technology and engineering programs due to the enormous cost that must be incurred while pursuing science-based education programs (Ngare & Nafukho, 2002). State universities are unable to offer adequate remuneration and research opportunities that would encourage greater commitment by professors and lecturers. In addition, the institutions are poorly equipped to handle science and technical subjects. In some institutions, equipment, laboratories and other physical assets are outdated. It is obvious that graduates of the outdated technologies cannot be expected to add value to the economy's production system.

## Conclusions and Contribution to New Knowledge in HRD Field

Given the findings of this study and the critical value of quality labor to the growth of the Kenyan economy, we conclude that institutions of higher education in Kenya have an important role to play with regard to Kenya's economic growth. Higher education institutions should encourage lifelong learning for those working in both private and public sectors of the economy since technology changes with time. This will allow workers to acquire the state-

of-the-art skill and knowledge needed for economic growth. Universities in Kenya should also address the issue of the mismatch of skills that are currently being provided and the skills needed at the workplace. It is a waste of resources and investment in human capital when an excessive number of university graduates find their knowledge and skills irrelevant at the workplace. Thus, majority of Kenyan University graduates have remained unemployed and/or underemployed and must be re-trained to fit in the labor market.

Given the revolution in technology and the change at the workplace, universities in Kenya urgently need internal change and innovation in terms of structure, curricula, teaching methods and redeployment of resources in the production of critical skills. While in the past universities professed to have already determined the content to be taught, there is a need to involve the learner and other stakeholders in designing education programs as suggested by Loeck and Rothchild (1980). The institution must learn to respond to market signals and design programs that respond to industry and societal needs (Nafukho & Burnett, 2002). The change will allow institutions of higher learning in Kenya to allocate their scarce resources to what is needed in the economy in contrast to what is merely taken for granted to reflect economic growth.

The institution of higher learning in Kenya must avoid duplication of programs, which is costly to the economy and does not add value to the production process. Programs geared toward engineering, science, information technology, medical science, and entrepreneurship should be offered by the arts and humanities. To ensure the graduate with the necessary skills, all programs should require internships/attachment components before graduation. Given the important role of adult education and the increased enrollment of adult learners in university programs (Nafukho, Amutabi & Otunga, 2005), andragogical methods of instruction should be employed in combination with the traditional pedagogical method. Thus, focus should be on meta-cognition (*learning how to learn*). This is a pioneering work which utilizes an economic growth model to determine the relationship between human capital, physical capital and economic growth in Kenya. Although the finding of the study, investment in human capital is critical to the economic growth process. The empirical finding of the study might constitute the subject of future research in HRD field in Kenya.

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