ABSTRACT

Human capital development is being globally recognized as a key factor for economic growth in modern economies. Education in general and higher education in particular plays a vital role in developing this human capital. Economic success for countries and individuals relies increasingly on human capital—their knowledge, skills learning, talents and abilities. India’s rapid economic growth which is mainly driven by its services sector, largely depends on its human capital supply, which in turn is a product of India’s higher and professional education system. Higher education is critical to India’s aspirations of emerging as a major player in the global knowledge economy. India needs to review its higher education policy and align its objectives with the economic development goals of the nation. This paper aims at objectively discussing literature review focusing on the role of tertiary education in human capital development and economic growth of India.

Keywords: Literature Review, Higher Education, Human Capital Development, Economic Growth

Introduction

The rising GDP, especially in the last two decades, has been vital in announcing India’s arrival on the global stage as a key emerging economy. India to a large extent owes this economic growth and success to its large pool of human resources which a few years back was perceived as its prime liability. “The basic resource in any company is the people. The most successful companies and the most successful countries will be those that manage human capital in the most effective and efficient manner” says Garry Becker (Becker, 1993). Human capital is a valuable concept because it recognizes that people should be treated as assets, rather than as an expense. Today, the value of skilled, complex and creative work is growing fast, and India as the world’s second largest population has an immense human resource to be developed. As a result, economic success for countries and individuals relies increasingly on human capital— their knowledge, skills learning, talents and abilities.

The concept of human capital is defined broadly in the economics literature to include education, health, training, migration, and other investments that enhance an individual’s productivity. Human capital is a broad concept which identifies human characteristics which can be acquired and which increase income. It is commonly taken to include peoples’ knowledge and skills, acquired partly through education, but can also include their strength and vitality, which are dependent on their health and nutrition. Human capital theory focuses on health and education as inputs to economic production. The health, education, and growth relationship is dynamic and complementary; health capital increases the efficiency with which individuals produce education, and presumably, other forms of human capital. Indeed, Hanushek and Dongwook (1995) and Schultz (1999) suggest that health improves an individual’s mental and intellectual capabilities, leading to better educational outcomes. Given that long-term growth is fueled by technical progress—itself the product of increased health, education, and training—increased health can raise the growth rate of income through technical innovation.
The development of human capital has been identified as the most important component of all the factors employed in production economics. In the global knowledge economy, people's skills, learning, talents and attributes - their human capital - have become a key to both their ability to earn a living and to wider economic growth. Education systems can do much to help people realize their potential, but when they fail it can lead to lifelong social and economic problems (OECD, 2007).

Education is a public good that is undeniable; however whether higher education is also a public good, has long been a subject of scholarly debate among experts. Several scholars argue in favor of higher education as a private good and state that economic benefits of higher education mostly go to private individuals rather than to society in general. Private individuals should therefore share a larger portion of the cost of higher education, as they benefit much more from it economically (Freeman, 1980). The logic of this view asserts that public funds should not be allocated in large proportion to higher education, as it produces mainly private economic benefits. George Psacharopoulos and Harry Patrinos (2008) have analyzed returns on investment in education by income in both developed and developing countries. In developing countries returns on investment from higher education for the public and private returns are 11.3 percent and 19.3 percent respectively. Similarly, in developed countries the share of public and private returns on investment in higher education is 10.8 percent and 19.0 percent respectively. But the gap between the two is much wider in low-income countries with less than $1,000 of average earnings, accounting for 11.2 percent and 26 percent respectively. However, contrary to this view Bloom, Hartley, & Rosovsky (2006), argue that higher education significantly contributes in building human capital and prepares a workforce for productive participation in the economy as well as providing other national benefits such as higher per capita incomes, competitive research, development and innovations, improved participation of citizens in social and political processes.

The development of human resources into meaningful capital to foster social and economic development has become an increasing role of higher education (Etzkowitz, H., Webster, A., & Healey, P. (Eds), 1998). Higher education, specifically, contributes to economic growth through a number of distinct yet interacting functions. Firstly, research and creative activities that take place within major universities and colleges contribute to economic growth through the production of knowledge (Becker, 1993). Secondly, it is generally acknowledged that colleges and universities contribute to national growth through diffusion of knowledge, which may result from the external service activities of their faculty, staff and students (Becker & Lewis, 1993). Finally, the contribution of higher education institutions, to national growth, through transmission of knowledge as a result of extensive and varied teaching activities is universally accepted (Becker & Lewis, 1993).

**Objective**

To objectively describe and discuss the review of literature focusing on the role of higher education in human capital development and economic growth.

**Objective Discussion of Review of Literature**

Long-term economic welfare of a nation is strongly related to its rate of economic growth. Compounded over many years, seemingly small differences in annual growth rates can lead to vast differences in standards of living (Barro & Sala-i-Martin, 1995). Traditionally, economic theory has emphasized physical capital accumulation as the most robust source of economic growth, at least in the short-run, with exogenous technical change being the long-run determinant of growth. However, attempts to make the long-run source of growth endogenous, rather than exogenous, led to the
emergence of the concept of endogenous growth (Lucas, 1988). This concept has emphasized the importance of human capital as an endogenous factor of production to explain economic growth.

Existing growth literature accepts education as one of the primary components of human capital since education, other than improving productivity of labor, has certain spillover benefits meaning that over and above benefiting the individuals who receive it, it also benefits society. Research on economic growth has exploded in the past two decades. Empirical studies on economic growth across countries have highlighted the correlation between growth and a variety of variables. Endogenous theory of growth is an economic theory which argues that economic growth is generated from within a system as a direct result of internal processes. More specifically, the theory notes that the enhancement of a nation’s human capital will lead to economic growth by means of the development of new forms of technology and efficient and effective means of production (Barro & Sala-i-Martin, 1995).

Human capital development is being globally recognized as a key factor for economic growth in modern economies. Human capital refers to the stock of competences, knowledge and personality attributes embodied in the ability to perform labor so as to produce economic value. Human capital comprises of individual talents and knowledge acquired through education, training, experience and cognition. Human beings are the active agents who accumulate capital, exploit natural resources, build social, economic and political organization and carry forward national development. Human capital are thus the attributes gained by a worker through education and experience and a qualitative improvement in it is what determines the character and pace of economic development (Sullivan & Sheffrin, 2003). The development of human capital through creative and effective utilization of the skills of the people should form a part of any modern development strategy. In this new age global economy it is the speed at which the human and material resources are gainfully employed that would determine the economic growth rates of nations.

Education in general, and higher education in particular plays a vital role in developing this human capital. The principal instrument for effecting qualitative improvements in human capital is the formal education system. Knowledge based competition within a globalized economy is prompting a fresh consideration of the role of higher education in human capital development and economic growth. Higher education is an important form of investment in human capital development. Higher education’s contribution to human capital development is significant to the growth and development of knowledge driven economies (Becker, 1993). It is rightly regarded as the ‘engine of human capital development and economic growth in the new world economy’ (Ozsoy, 2008).

The physical and human capital of a nation has a significant role in stimulating, nurturing and sustaining its economic growth and prosperity. Though for a long time researchers have focused mainly on relationship between physical capital and economic growth, role of human capital has attracted the attention of several economic researchers and social scientists in recent times. The key assumption of human capital theory is that “schooling raises earnings and productivity mainly by providing knowledge, skills and a way of analyzing problems” (Becker, 1993). Based upon the work of Schultz (1961), Psacharopoulos & Woodhall (1985) and Becker (1993) human capital theory explains the highly instrumental role that formal education plays in developing production capacities of the people of a nation. In general terms, human capital represents the investment made in people that enhances their economic productivity. Schultz argues that investment in human capital must focus on supporting individuals in acquiring an education, since it is skill and knowledge that affect one’s ability to do productive work. He believes that an investment to enhance these capabilities leads
to an increase in human productivity, which in turn leads to a positive rate of return. He argues that investments in education and training open up opportunities and choices that otherwise would be unavailable to many individuals. Schultz criticizes those who see investment in human capital as a cost. He argues that while in the short-term there may be a cost (i.e., cost of facility, loss of earnings for workers while in school, etc), in the long-term the yield from the investment will far outweigh the cost (Schultz, 1961). Human capital theory emphasizes how education increases the productivity and efficiency of workers by increasing the level of cognitive stock of economically productive human capability which is a product of innate abilities and investment in human beings - the provision of formal education is seen as a productive investment in human capital, which the proponents of the theory have considered as equally or even more equally worthwhile than that of physical capital. Psacharopoulos and Woodhall (1985) assert that “Human resources constitute the ultimate basis of wealth of nations. Capital and natural resources are passive factors of production, human beings are the active agencies who accumulate capital, exploit natural resources, build social, economic and political organization, and carry forward national development.”

Education in general and higher education in particular plays a very significant role in building human capital. This study would focus on India, a country that has a large pool of human resources awaiting opportunities that would lead to further economic growth of this nation. Higher education is critical to India’s aspirations of emerging as a major player in the global knowledge economy. The global competitiveness of Indian industry and also its employment generation potential is clearly dependent on availability of human capital with required skills and trained personnel. Tertiary education system in India has played a vital role in developing the human capital for the nation. Broad access to higher education and the rapid growth of enrollment at its universities and colleges have played a key role in India’s rapid, sustained economic advances. In other words, the success of the Indian economic model owes much to India’s investment in higher education (Tilak, 2007). However, according to a World Bank report, India will require 23 million professionals by 2010; the current shortfall is 500,000. India is only half way toward attaining the enrolment rate it needs in professional and technological personnel training to sustain its rapid economic development (Dutz, 2007).

Role of higher education in building human capital

Higher education significantly contributes in building human capital and prepares a workforce for productive participation in the economy as well as providing other national benefits such as higher per capita incomes, competitive research, development and innovations, improved participation of citizens in social and political processes (Bloom, Hartley, & Rosovsky, 2006). Higher education, which to a great extent has been delivered in universities and colleges, is directly linked to development of human capital and significantly contributes to the economy by creating a well trained and highly skilled workforce which includes the training and education of skilled personnel like scientists, lawyers, doctors, engineers, teachers and other professionals. It can make nations leap-frog into advanced stages of development. With better tertiary education a nation’s workforce develops the ability to access and exploit vital information and derive benefits from the digital revolution (Kasozi, 2008). An educated citizenry is more capable of participating in the local, regional and national government. There are many reasons to educate population beyond developing their potential productive capacity. In a changing world that demands more ability from its workers, the national necessity for better higher education is more pressing than ever. Increasing the local creation and use of human capital through educational and policy institutions is critical for a nation’s success in a world of economic shift characterized as the information, high tech, or new economy.
Historically, low levels of tertiary education have not created much concern within national development initiatives, since there had been little empirical evidence of economic benefits for the population as a whole, let alone the poor specifically. Most studies found higher returns to individuals from primary and secondary schooling than the returns from higher education. However, new research and evidence suggests that higher education can significantly increase incomes and the rate of economic growth (Bloom, Hartley, & Rosovsky, 2006). In addition to the common contribution of human capital to productive potential a second channel works via technological upgrades. In a knowledge economy, tertiary education can enhance graduates’ awareness of and ability to use new technologies and thus participate more effectively in the global economy. Countries thus empowered with highly skilled human capital are more globally competitive. As the expansion of tertiary education promotes faster technological advances, a country is better able to maximize its economic output (Bloom & Canning, 2006). There exists a correlation across countries between economic growth rates and schooling enrollment rates including enrollments in higher education (Table 1). In United States the industries that have made rapid technological progress are those that have been able to make most use of well-educated work force. The rate of economic growth is thus facilitated by a sound supply of well educated labor. Thus there exists a close relationship between demand and supply of college educated workers, their pay, and the rate of economic growth (Pencavel 1991).

The contribution of higher education is vital because it exercises a direct influence on individual productivity and then national productivity, which largely determines living standards and a country’s ability to compete and participate fully in the global economic trade which is now mainly driven by services sector. More specifically, tertiary education institutions support knowledge-driven economic growth strategies and poverty reduction by (a) training a qualified and adaptable labor force, including high-level scientists, professionals, technicians, teachers in basic and secondary education, and future government, civil service, and business leaders; (b) generating new knowledge; and (c) providing the capacity to access existing stores of global knowledge and adapt this knowledge to local use (Bloom, Hartley, & Rosovsky, 2006). Higher education can offer better opportunities and life chances for low-income and minority students, thereby increasing their employability, income prospects, and social mobility and decreasing income inequality. The norms, values, attitudes, ethics, and knowledge that tertiary institutions can impart to students contribute to the cultural, social and human capital necessary for constructing healthy civil societies and socially cohesive cultures, achieving good governance, and building democratic political systems (Bloom, Hartley, & Rosovsky, 2006). Higher education institutions also play an essential role in support of basic and secondary education. The training of teachers and school principals, from preschool to the upper secondary level, is the primary responsibility of tertiary education institutions. Education specialists with tertiary education qualifications participate in curriculum design and educational research for lower levels. The linkage between tertiary education and the other levels of schooling has the potential to stimulate a virtuous circle of capacity building because the quality of tertiary education affects the quality of primary and secondary school education and is in turn directly influenced by the quality of secondary school graduates. Sustainable transformation and growth throughout the economy are not possible without the capacity-building contributions of an innovative tertiary education system, especially in low-income countries with weak institutional capacity and limited human capital (World Bank, 2002).

Empirical research evidence offers support for the importance of educational attainment as a variable influencing economic performance (OECD, 1999). Investments in human capital yield returns at different levels: first, a private rate of return which will result in greater earnings to the individual; second, a social or general rate of return which will result in higher national and regional growth rates; and third, an organization specific rate of return (Lundvall & Johnson, 1994).
benefits of investment in human capital development for the state and society as a whole are both monetary and non-monetary. Human capital development has become a prominent issue of public policy. With the rise of the knowledge economy and rapid technological change, there is growing demand for highly skilled, adaptable workers. Empirical studies consistently demonstrate that future growth in GDP is directly related to the knowledge and skills of the labor force and the quality of human capital. Barro & Sala-i-Martin, (1995) found that an increase in tertiary education by 0.09 years raises the annual growth by 0.5% point. In United Kingdom a research study of relationship between index of total factor growth and levels of education attainment concluded that when higher education qualifications increased by one percent, annual GDP output grew between 0.42 and 0.63 percent (Jenkins, 1995). Similarly, a study in the United States showed a positive correlation between higher education and entrepreneurship – individuals with higher education levels were more likely to engage in entrepreneurial activity and more educated entrepreneurs created larger number of jobs than less educated ones (Bloom, Hartley, & Rosovsky, 2006). A World Bank study showed that the rates of return on research and development were 78% (Lederman & Maloney, 2003).

Investments in developing human capital with higher levels of education generate several public benefits beyond individual private gains. Besides a wide range of personal, financial, and other lifelong benefits obtained by students who attend institutions of higher education, taxpayers and society as a whole derive a multitude of direct and indirect benefits when citizens have access to postsecondary education. The typical estimates of private and social returns to higher education based on studies of 98 countries during 1960-1997 were 19% and 10.8% respectively (Patrinos & Psacharopoulos, 2008). A study that examined the impact of college education on productivity and wages found that “College educated workers are paid 26 to 36 percent more than workers who have not attended college, but college educated workers are also 51 to 75 percent more productive”(DeVol,1999). However, some researchers and scholars have argued that higher education leads to greater earnings, not because this level of education augments productivity, but rather because it serves as a screening device or credential (Winkler, 1987). College graduates may be more productive than those with less education, but they may be more productive for reasons having nothing to do with their higher education. The argument is also made that college graduates may not be any more productive than non-graduates, but employers may have a perception that they are, and so, pay them more and place them on fast track and higher positions that enables them to acquire more human capital through on the job training than others acquire.

Freeman’s (1980) observation that within advanced countries the returns to higher education were falling also led to the popular idea that there has been an overinvestment in higher education. If private returns to higher education are artificially high, brought about by the overly large subsidies to higher education, then there will be excessive private demand. This situation leads to increased political pressure for even greater subsidies and an ever increasing impetus to expand higher education in the public sector well beyond the point where it has any more net social benefit. According to the overinvestment hypothesis, to the extent that subsidized private demand for higher education takes resources away from other investments with higher rates of return, higher education actually may be detracting from the nation’s growth (Freeman, 1976). Especially in the case of developing countries, investment in higher education is alleged to slow general economic growth as more productive investment elsewhere are foregone. However, contradictory to this view, Cohn and Geske (1990) have argued that since expenditures on education by both governments and individuals are made largely at the expense of consumption and not savings, such expenditures do not necessarily detract from other physical capital formation and growth. As a consequence, additional expenditures on education can make a net contribution to growth even if the social rate of return might be lower for
education than for physical capital. The private and social returns to higher education are generally lower than those to other levels of education, but still above many other rates of return obtainable on alternative forms of physical capital investment (Becker & Lewis, 1993).

Continuous development of human capital through higher levels of education correspond to lower levels of unemployment and poverty, so in addition to contributing more to tax revenues than others do, adults with higher levels of education are less likely to depend on social safety-net programs, generating decreased demand on public budgets (Bloom, Hartley, & Rosovsky, 2006). Research studies have found a positive and statistically significant correlation between higher education enrollment rates and governance indicators, including absence of corruption, rule of law, absence of ethnic tensions bureaucratic quality, and low risks of repudiation of contracts and appropriations (Bloom, Hartley, & Rosovsky, 2006). College graduates have more positive perceptions of personal health, and lower incarceration rates than individuals who have not graduated from college. Higher levels of education are correlated with higher levels of civic participation, including volunteer work, voting, and blood donation (Baum & Payea, 2005).

The Indian Context

Education in ancient India was highly advanced as evident from the centers of learning that existed in the Hindu and Buddhist monasteries of the 7th century BC up to the 3rd century AD. The ancient education system in India slowly got extinguished following invasions and disorder in the country. In colonial era, the British set up a network of schools and colleges to impart western education in English medium (Perkin, 2006). At the time of independence in 1947, there were 19 universities and several hundred affiliated colleges. The higher education system in India grew rapidly after independence in 1947. By 1980, there were 132 universities and 4738 colleges in the country enrolling around five percent of the eligible age group (16-24 years) in higher education. Today, while in terms of enrolment, India is the third largest higher education system in the world (after China and the USA); with 18419 institutions (355 universities and 18064 colleges) is the largest higher education system in the world in terms of number of institutions. Higher education in India covers all post-secondary education beyond class twelve in different subject areas including all professional streams such as engineering and technology, medical and agriculture (UGC Annual Report, 2006). In the 1980s, there was an unprecedented demand for quality higher education relevant to the needs of business and industry, putting considerable stress on governmental resources. Also, there was a substantial increase in the population in the middle and higher income groups, which could afford to pay higher tuition fees. This made the non-subsidized higher education a viable enterprise. Faced with such a situation, the state was left with no alternative but to allow the entry of private enterprise in the area of higher education. Economic reforms in early 1990s saw the middle class grow bigger, younger and more affluent. These reforms also saw a rise in entrepreneurship in the country. The rising demand of higher education from the growing middle classes and the growing culture of entrepreneurship combined to accelerate the pace of growth of private higher education in the country (Jayaram, 2004). India’s rapid growth is closely correlated with its human capital supply, which in turn is a product of India’s higher and professional education system (Jayaram, 2004). It has consequently the globe’s third largest pool of scientific and technological personnel, between 8 and 10 million people, and it can export skilled information, communication, and technology workers (Tilak, 2007). India also enjoys a sound reputation in technological and management education. The Indian Institutes of Technology (IITs) and the Indian Institute of Management (IIMs) are regarded by employers as world-class institutions in terms of quality and the employability of their graduates. India is also an overachiever in research and development, accounting for 8% of all funding for these purposes in the developing countries and ranking first in articles published (Altbach, 1998).
In the era of globalization and knowledge economy, India faces new opportunities for development and prosperity. However, with just a gross enrollment ratio of 12% in tertiary education, India is short of the human capital it needs to sustain its economic growth (UNESCO Institute for Statistics, 2006). The country at present has inadequate human capital in the fields of technology and science. The current education system cannot meet the requirements created by its world-class IT industry and a growth pattern that is now dominated by exports based on professional and technological services. It may have one of the world’s largest cadres of science and technology expertise on an absolute level but, in relative measure, it is falling behind (Tilak, 2007). Another challenge lies in the fact that the existing structure of India’s higher and professional education system does not match the needs of its economy. About 82% of students major in arts and humanities and only 18% of students major in technology, engineering, and science (Shukla, 1991). The current shortage in human capital and professional labor is only one result; it coexists with the oversupply and unemployment of academically educated Indians. In 2001, for instance, 17% of college graduates in India failed to find jobs (Shukla, 1991). The quality and undersupply of educational infrastructure also needs immediate attention as it deprives several talented minds of an opportunity to acquire knowledge and enhance their career prospects (UGC, 2006). India is following the international trend in education by upgrading its higher and professional education from an elite system to a mass higher education system (Trow, 1973). In the process, India is facing the dilemma that can confront any country that is experiencing fast development in both economy and higher education – it needs to reallocate funds to develop higher educational infrastructure and improve enrollments and justify increased public investment in higher education. In this age of economic globalization, India is planning to boost its economic strength by using comparative advantages in its labor force and its consumption market driven by large population. The government has made strategic plans to transform its big population into huge human capital (UGC, 2006). This can only be achieved through continued investment in education in general and higher and professional education in particular. Indeed, this investment in human capital is also necessary to sustain India’s current level of growth (Onn, 2006).

From the preceding review of the literature it is clear that higher education, globally and more importantly in India has been and would continue to play an important role in building human capital - one of the most indispensable factors for economic growth, especially in this new knowledge and services driven global economy. This review of related literature also revealed that there is positive correlation between higher education enrollment levels and economic growth, governance indicators - including absence of corruption, rule of law, absence of ethnic tensions, bureaucratic quality, and low risks of repudiation of contracts and appropriations (Bloom, Hartley, & Rosovsky, 2006). The role of higher education in human capital development and economic growth has attracted attention of scholars from various disciplines. As previously cited in this chapter there is substantial empirical evidence across various regions and countries that have established the relationship between higher education and economic growth. However, major research has been focused on assessing the private and public returns of higher education and justifying the need to continue state investments in higher education. In India, several educationists and economists have supported state investment in higher education and have justified this support by providing empirical research evidence for linkages between higher education and economic growth (Tilak and Varghese, 1991).

Conclusion

The major gap that emerges from this literature review is inadequate knowledge about the relationship of higher education enrollments with growth in different sectors of the economy in India. With a large proportion of population in the age group of 16-24, it is necessary for a country like India to develop its human capital strategically through higher education thus contributing to nation’s
economic growth. Educated, skilled and talented workforce that meets most of the needs of its dominant services sector represents just a small portion of the population. Most Indians lack the skills to participate in a service economy, and continue to be employed in low-skilled, rural occupations (Joshi, 2008). There has been disproportionate growth of tertiary sector, as its share in employment has been far less when compared to its contribution to GDP. The sectoral distribution of workforce in India during the period 1983 to 2004-05 reveals that the primary sector continued to absorb 56.67% of the total workforce whereas the share of tertiary sector was only 26.62% (Joshi, 2008). Besides continuing with the economic reforms, India needs to initiate reforms in higher education. The key question is how India will continue to have enough of the right human capital to continue its growth and further build an innovative services sector that is integrated into global economy. However, with just a gross enrollment ratio of 12% in tertiary education, India is short of the human capital it needs to sustain its economic growth (UNESCO Institute for Statistics, 2006).

References


