ENHANCING ECONOMIC GROWTH THROUGH HUMAN CAPITAL DEVELOPMENT: A GLOBAL CHALLENGE

Zainal Abidin Hashim*

Introduction

Economic growth is an explicit economic, social and certainly political goal in almost every nation. However, comprehensive and independent research and scientific findings provide compelling evidence that the growth of the global economy is not sustainable because it consumes many of the environmental services that underpin the production of goods and services (Tietenberg,1998)). There is a growing realization that economic growth does not necessarily go hand-in-hand with growth in the well-being of people. Standard measures of economic output such as Gross National Product (GNP), in most cases, do not reflect the growing disparity between rich and poor in most nations (UNDP, 1996) or the environmental degradation which diminishes the health of the people, communities, ecosystems and the economy (Daly, 1998).

To most people, capital means a bank account, one hundred shares of PROTON, a factory, or a Mercedes Benz. These are all forms of capital in the sense that they yield income and other useful output over long periods of time. However, the notion of human capital in the perspective of economic development entails investing in human mainly through education and training to enhance the propagation of more and better output in perpetuity for the individual and nation.

* Dr. Zainal Abidin Hashim is an Associate Professor at Faculty of Economics and Business, Universiti Kebangsaan Malaysia

Its definition by OECD (2001) in which human capital consists of all forms of knowledge acquiring which as "the knowledge, skills and competencies embodied in individuals that facilitates the creation of personal, social and economic well-being". The outstanding economic records of Japan, Taiwan, China and several Asian economies in recent decades dramatically illustrates the importance of human capital growth. These so-called Asian Tigers grew rapidly by relying on a well-trained, educated, hard-working and conscientious labor force.

Cited are several compelling evidence of the link between human capital and technology. In agriculture, farmers in countries with traditional economies are among the least educated members of the labor force. By contrast, modern farmers with education and training deals with hybrids, breeding methods, complicated equipments and intricate futures markets and commodities. Similarly, education and training is useful in coping with changing technologies and advancing productivity in the manufacturing and services sectors (Welch).

Global economic, social and political landscape through the years has changed the world today from the one which experience during world wars. Advancement in science and technology along with the establishment of broadly-based governments and strengthening of institutions have led to significant socio-economic progress and improvement in vast majority of people. As mentioned earlier, still many others are lagging behind. Profoundly, in the Asian region, existence of significant differences in the state of economic development and social well-being. For instance, when GNP per capita income is taken as an indicator of economic development, both Asian Least Developed countries (Bangladesh, Bhutan, Cambodia, Laos, Nepal) and South Asian Developing countries

(India and Pakistan) are still below US$500 where as those for East Asian Developing countries (Malaysia, Korea, Thailand) range from over US$2,000 for Thailand to as high as about US$8,500 in the Republic of Korea in 2000 (Table 1.0).

As a fact, the vastly divergent economic development among the group of countries, it make sense to presume that the discrepancy in development is somehow inherited by the respective groups of countries. Contrary to this general perception, it is quite uncertain to note that, this had not been the case in the past. In fact Table 1.0 distinctly shows that economic development measured in terms of GNP per capita in the 1960s for all these countries was quite similar and comparable to the extend that all the countries, with the exception of Malaysia, were below the US$ 200 mark. Not only that, the Republic of Korea had a per capita income of only US$ 130 in 1966, which is even lower than that of Cambodia at that time as shown in Table 1.0.

In light of the above, the pertinent question is : what factors led to this exceptional economic development for some countries, especially East Asian Developing countries, in the last three decades in terms of increasing their GNP per capita income by as much as over 65 times for the republic of Korea, 13 times for Thailand and about 10 times for Malaysia which during the same period for Asian Least Developed countries and South Asian Developing countries, only an increase of 2 to a little over 5 times. Obviously the factors are numerous ranging from social to cultural, from economic policies to institution development, geographic location to opportune time. Thus this paper will focus on socio-economic factors, in particular the human capital dimensions, across the group of countries to establish the possible role and linkages of human capital with economic development.

Table 1.0 GNP Per Capital Income (in US$)

Countries	GNP per capita income (US$)				
	1966	1980	1990	2000	2004
Bangladesh	68	220	300	420	440
Bhutan	80	260	490	510	760
Cambodia	143	NA	NA	285	NA
Laos	92	NA	200	220	390
Nepal	58	140	200	200	250
India	90	270	390	485	620
Pakistan	115	330	420	505	600
Malaysia	334	1,830	2,420	3,550	4,520
Korea	130	1,810	6,000	8,570	14,000
Thailand	143	730	1,540	2,100	2,490

Source : *Asian Development Bank,* various issues.

Theoretical Perspective of Growth

Uncertainty arises pertaining to the role of human capital and other social variables in economic growth and development of an economy. The traditional neoclassical growth models by Robert Solow and Trevor Swan in the 1950s emphasize the fact that savings determined the rate of growth and the output of an economy grows in respond to larger inputs of capital and labor, thus all physical inputs. Essentially, as society acquired more and more equipment, the marginal return to additional investment would diminish conforming to *law of diminishing returns,* which consequently after a point incentives to save and invest would disappear. This demonstrate that, non-economic variables such as human capital or human variables have no function in these models. As such, the neoclassical growth models afford some implications to the economy; as the capital stock increases growth of the economy slows down and in order to keep the economy growing it must

capitalize from infusions of technological progress. It is known that this type of mechanism in the neoclassical growth model is neither inherent nor does it strive to explain much, in economic term, this simply means that the technological progress is exogenous to the system.

The so called 'new' growth theory comes back to investment as the key ingredient for growth but the traditional concept of capital has been generalized to include human capital, that is, investment in education, training and related activities. With technology and productivity spinoff embodied in investment, new growth theory largely unhitches the constraint of diminishing marginal returns to capital thus highlighting the contribution of human capital to the production process.

Studies suggest that, investment in human capital leads to increased investment in physical capital. With more education and training, people adapt more effectively to new technologies, thereby raising productivity and economic growth. Spinoffs can occur where for example increased investment in one group of workers raises the productivity of other workers. As for the East Asian Developing, where the economies kept growing well over three decades. It implies that not only technology was the main driving force in maintaining such high growth performance, there are other factors which are outside the realm of neoclassical growth model.

Concurrently, a new paradigm was developed which is now commonly known as endogenous growth model. By broadening the concept of capital to include human capital, the new endogenous model argues that the law of diminishing returns to scale phenomena may not be true as is the case for East Asian

economies. As mentioned earlier, by investing in capital and also employs educated and skilled workers who are healthy, then not only will increase productivity but also enhance efficiency.
However, there are numerous other variables that can represent human capital and health conditions, for simplicity and capturing the basic broad thrust of these two variables, discussions will take into account literacy and life expectancy at birth and several related variables.

Level of Literacy

This is a measure of the ability to read and write among the population for the various groups of the Asian countries as depicted in Table 2.0. It is rather interesting to note that East Asian Developing countries were far ahead of both Asian Least Developed countries and South Asian Developing countries. In fact the total literacy rates for East Asian Developing countries in the 1960s were as high as 71% for the Republic of Korea, 68% for Thailand and even Malaysia over 50%. In case of all Asian Least developed countries and South Asian Developed countries, the total literacy rates were as low as 9% for Nepal and 15% for Pakistan with Cambodia with 38%.

After three decades, Asian Least Developed countries And South Asian Developing countries have somewhat improved their human capital, the total literacy rates still far below 50% especially for Bangladesh, Nepal and Pakistan (Table 2.0)

Table 2.0 : Total Literacy Rate By Countries (%)

Countries	Literacy Rates			
	1960	1990	1998	2005
Bangladesh	23	42	42	47
Cambodia	38	63	63	74
Laos	26	56	62	69
Nepal	9	31	41	49
India	26	49	55	61
Pakistan	15	35	44	50
Malaysia	53	88	89	90
Korea	71	96	97	98
Thailand	68	92	94	95

Source : World Bank, *World Development Report 1982* and UNESCO, *Statistical Yearbook* 2005.

In 2005, the East Asian Developing countries have more or less achieved the formidable task of educating most of their people. As a result, the total literacy rate for Korea has reached 98% and Malaysia managed to achieve a rate of about 95%.

Level of Health

In addition to issues on low income, malnutrition, disease, and infant mortality rates, many people in the developing nations are still confronting with overcoming ill health. In analyzing the health variable measured in terms of life expectancy at birth among the three groups of countries in the Asian region. In the 1960s, all Asian Least Developed countries and South Asian Developing countries had a life expectancy at birth below 45 years with Bhutan and Nepal much less than 40 years. (Table 3.0). During the same period, the East Asian Developing countries had a life expectancy at birth well over 50 years with Korea having over 54 years, Malaysia 53 years and 51 years for Thailand.

Table 3.0 Life Expectancy at Birth (years) and Infant Mortality Rate@ By Countries

Countries	Life Expectancy (1960-2006) and Mortality Rate (1990 & 2006)				
	1960	1980	1990	2000	2006
Bhutan	36	45	51 107	59	62 67
Bangladesh	43	49	55 100	61	64 56
Cambodia	35	44	54 80	55	57 97
Laos	40	45	51 120	54	61 65
Nepal	37	48	54 100	60	62 59
India	42	54	59 84	61	63 62
Pakistan	45	55	59 100	63	65 80
Malaysia	53	67	70 16	72	74 10
Korea	54	66	72 8	75	77 5
Thailand	53	65	68 31	69	71 18

Source : World Bank, *World Development Indicators*, 2007 (Washington, D.C) @ per 1,000 live births

In late 1990s, even though the Asian Least Developed countries and South Asian Developed countries enhance their life expectancy to a level over 60 years like Bangladesh, Bhutan, India and Pakistan, nevertheless, East Asian Developing countries demonstrated far more pertinent improvement (Table 4.0). As for Malaysia and Korea, the life expectancy rate was over 72 years and Thailand reaching 69 years.

Empirical Implications

The level of literacy for the various groups of Asian countries as in Table 2.0 depicted that in the 1960s most of the countries were at similar stages of economic development. The East Asian developing countries were well ahead of both Asian Least

and South Asian Developing countries. As observed, total literacy rates for East Asian countries in the 1960s were as high as 71% for Korea, 68% for Thailand and Malaysia over 50%. In the case of Asian Least developed and South Asian Developing countries, total literacy rates were as low as 9% for Nepal and 15% for Pakistan and Cambodia 38%. After three decades, Asian Least Developed and South Asian Developing countries have somewhat improved their human capital, their total literacy rate were still far below 50% especially Bangladesh, Nepal and Pakistan. During the same period, the East Asian Developing countries have to some extend achieved the formidable task of educating most of their people. As a result, in late 1990s, total literacy of Korea has reached 98% and Malaysia managed to reach 90%.

With respect to the health variable as measured in terms of life expectancy at birth, a similar pattern was observed among the three Asian countries. For instance, in 1960s, all Asian Least Developed countries and South Asian Developing countries had a life expectancy at birth below 45 years with Bhutan and Nepal much less than 40 years (Table 3.0). During the same period, East Asian countries had a life expectancy well over 50 years with Korea over 54 years followed by Malaysia 53 years and Thailand 51 years. Later in late 1990s, although the Asian Least Developing and South Asian developing countries enhance their life expectancy to a level 60 years at least in the case of Bangladesh, Bhutan, India and Pakistan, nevertheless, East Asian countries are far more pertinent. As for Malaysia, and Korea, the life expectancy rate is over 72 years with Thailand reaching 69 years.

As for infant mortality rate per 1,000 life birth, which portray health status of the society, show much improvement for all three groups of the Asian countries especially Bangladesh, Laos

and Nepal. As for the East Asian countries, their incidence of infant mortality improve form good to better (Table 3.0)

From the above discussion there are several points to highlight; firstly, the data shows that in the past three decades, the three groups of Asian countries started with a similar state of economic development however by late 1990s and 2005 there are marked difference among them on account of their per capita incomes. The East Asian Developing countries are well beyond the reach of the Asian Least Developed and the South Asian Developing countries in terms of economic development. Secondly; although in terms of per capita income all these groups of countries were quite comparable in the 1960s, nevertheless, in the context of human capital and health sector development, there were huge difference among them. In the 1990s and 2005 most East Asian Developing countries' population were literate while Asian Least Developing countries and South Asian Developing countries still have a long way to go. Thirdly, based on the facts presented earlier, it is evident that East Asian Developing countries rapid economic progress in the 1980s occurred along with their reasonably well developed and healthy human capital endowment which started to take momentum in the 1960s or even earlier.

It is been perceived that, for human capital to spawn a perceptible impact on economic development, a nation needs to have minimum captious mass of at least 70% or more literate population. It means, if an overwhelmingly large number of people in a country are literate, even with simple basic education as being able to read newspapers, this may open up minds of the masses, possibly make them more enlightened workers and perhaps more discipline individual. These are some essential prerequisites for a large organized production to run efficiently and for leading

to rapid growth. Through mass literacy, better prepared healthy workers and conducive investment friendly government policies, East Asian Developing countries seems to have been able to furnish those essential elements of rapid growth at the early stages of their development. During the same time, unfortunately both Asian Least Developing and South Asian Developing countries were neither primed in terms of human capital endowments at large nor were their government investment policies responsive enough to allure foreign investors in sizeable quantities to trigger rapid economic growth. Thus, in a mere two decades, both Asian Least Developed and South Asian Developing countries lagged far behind the East Asian Developing countries to the extend that any catching up in the near future by the former groups of countries to the level of the later countries would be a very challenging task.

Factors Leading to Divergence in Human Capital among Nations

As illustrated above, a well developed human capital base of a nation played an important role in economic development and , on this count, East Asian Developing countries were far ahead of other two groups of the Asian countries even at the early stages of economic development. A question in mind, how the East Asian Developing countries managed their human capital base as compared to other two Asian countries when their per capita incomes were rather similar as shown in 1960s. What led to this significant divergence in the human capital development among these group of countries? Research shows that, it is the direction of a nation's priorities and commitments measured in terms of actual resources devoted towards education sector that led to such difference in human capital among the group of countries. This view is supported by the data on per capita government investment in education as well as in health for various groups of countries in the region as shown in Table 4.0.

Deliberating on Table 4.0 clearly shows that, in the 1970s (or earlier), governments in Asian Least Developed and South Asian Developed countries were spending only 40 cent to $1.60 on a per capita basis on education. At the same time, under comparable economic conditions, East Asian Developing countries' governments were investing much large sums of money on education on a per capita basis ; anywhere between $9.10 by Korea to as high as $16.40 in case of Malaysia. As for health sector, although the per capital public investments gaps in the 1970s were somewhat narrower, an East Asian countries like Malaysia was still spending over $5.50 per person as opposed to only 12 cents by Pakistan as shown in Table 4.0. Currently, the disparities in per capita expenditure on both education and health between Asian Least Developed and South Asian Developing countries and East Asian countries are staggering to the extend that for education on a per capita basis, Korea is spending over 26 times that of India and Pakistan and as high as 95 times of Cambodia. As such, the impact of higher investments on education and health were directly ruminated in terms of high literacy rates and markedly improved years of life expectancy at birth thus leading to higher per capita incomes and economic development.

Maturity Period for Human Capital Investment

Given the acceptation of human capital investments towards economic development, a pertinent question is whether the time taken or the gestation period of such investments to proliferate intended impact in terms of literate skilled workers is comparable to that of physical infrastructure investments such as roads, highways and hydroelectric dams. It need to be considered that the physical infrastructure investments may ordinarily take a long time to be completed, however, the impact period for human

capital investment could be even longer if it is to forge results. Also it may even be possible to abbreviate the gestation period of physical infrastructure investment by apportioning more resources through borrowing or foreign aid, the same cannot be said for human capital. Regardless of the size and pace of human capital investments, it needs a fixed number of years (six years for primary school and seven years for secondary school) to shape a generation of educated and skilled labor force.

Another important distinction between physical infrastructure and human capital investments that the former type of investment normally requires a one-time capital expenditure while the later category enjoins investments on an continuous basis. For instance, once the hydroelectric dam project is completed, it is expected to generate electricity for along time without entailing future heavy capital expenses. On the other hand, to mould a generation of educated workers will entail investments in human capital on a continual basis.

Table 4.0 Per Capital Expenditure On Education And Health Sectors (US$)

Countries	EDUCATION			HEALTH		
	1970	2000	2006	1970	2000	2006
Bangladesh	1.2	6.8	11.6	0.5	3.2	4.7
Cambodia	1.4	3.9	4.5	2.3	2.6	2.9
Nepal	0.4	5.8	6.4	0.3	2.0	3.3
India	1.58	13.77	NA	0.35	2.43	NA
Pakistan	0.42	14.24	NA	0.12	4.27	NA
Malaysia	16.4	226.4	344.1	5.5	61.2	107.1
Korea	9.1	371.4	417.4	0.7	17.8	NA
Thailand	11.0	88.1	105.0	2.0	25.8	41.8

Source : World Bank, World Development Report 1982 and World Development Indicators 2006

Thus, the return of the social sector investment is a long term continuous proposition and therefore its affiliation with economic growth and development should be researched deeply and analyzed within a framework which has a longer perspective. It was suggested that a shift in the investment priority to social development (ie education sector) would entail enduring positive impact on economic growth but with long lags of about eight years. Studies further suggested that, in short and medium term, the impact of human capital investment on economic growth for the country may be noticeable, however after the critical time period of eight years the economic growth for the country will be substantial and long-lasting.

Meeting the Challenges Ahead

The renewed interest in upgrading the nation's human capital reflects a number of factors, new growth theory and promoting long term growth. This is considered inevitable as the world now is more integrated and globalised. A world of many players, including among others rich in natural resources and highly technical and above all are severely competitive. Of the usual factors of production, capital and technology are now extremely mobile. Even land and labor are mobile these days, in the sense that businesses can be located almost anywhere in the world to take advantage of lower costs and/or higher skills. Nations need to develop leading edge technology so as to add value to their products thus gaining assess in to main stream of the global trade. In a world of highly mobile capital and technology, the greatest rewards will go to nations with flexible, highly skilled and knowledgeable workforce. Modern growth theory implies that governments have an important role in all this but it is not specific as to what role should be. What seems clear, however, is that the

notion of lifetime employment which was taken for granted a generation ago is no longer appropriate; more relevant today is the notion of lifetime employability. This suggest the need for more emphasis on developing broad-based and transferable skills at all levels of education – skill that will assist to problem – solving, innovate and develop.

Another general requirement is to assist people to move to activities that are world-competitive and away from those that are not. This has many facets, including further freeing up of the labor market, a strong commitment to retraining and on-going micro reform. A well educated and trained workforce will not realize its potential without the support from the relevant authorities. In today's global economy, two of the most important assets that a country possess are its people and its infrastructure.

Conclusion

Current global competitiveness demand human skills, creativity and technological innovations which entails investments on human capital and supplemented with investments on physical infrastructures. Lower labor cost is no longer sufficient to attract investments. In its place, the human capital of the local labor force is gaining momentum as labor cost differentials or proximity to raw materials become less important in decisions to locate technology-intensive facilities. As far capital is concern, commitment and priorities of the government as to education, training, health care and infrastructural development are of paramount important.

From this paper, several policy considerations can be highlighted; firstly, countries with high investment on human capital, such as the East Asian countries, tend to achieve progress

in development faster than countries with lower investment in human capital. Naturally, there is an important link between healthy human capital and rapid economic development of nations. Secondly, the commitment and priorities of the government beside other economic factors were the main success factor in acquiring the level of development countries aspired. Identification of actual resources and enhancement of affords towards specific areas of technological advancements entails priorities can ensure progress in the long run. Thirdly, there exist a distinct different between investments in human capital and physical infrastructure. To attain sustainable development, investment on human capital is a continuous process and it takes at least eight years to mature and requires constant support however its return are fundamental for improvement. Consequently, its investments stimulates long term goal of self-reliance, promoting innovations that create new ideas and entrepreneurs. Physical infrastructural investments are a strong complement towards economic growth and considered as one of the movers for developments. However, it is expected to deliver returns right after completion, with periodic maintenance along the way.

For development to bring tangible economic and societal improvements, it must encompass a larger segment of the population, sectors and profession. As such, a conscious effort should be made to promote and acknowledge new innovations and contributions by the societies. Reports by UNESCO and OECD on emerging economies in 2004 finds that investments on human capital over the past two decades have accounted a minimal of one percentage point in the annual growth rates to these countries initiated by technological break through and new innovations.
As a conclusion, there ought to establish convincing policy options by the 'lagging behind' Asian Developing countries to improve their

economic progress and to catch up with the East Asian Developing countries. Highly committed and heavily investing in human capital and health are the best policy options to achieve sustainable economic growth, global competitiveness and resilient to economic uncertainty.

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