

HUMAN CAPITAL AND ECONOMIC DEVELOPMENT: A SURVEY OF CONCEPTUAL RELATIONSHIP AND EXPERIENCE

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I. Introduction

The role of human capital in economic development is often questioned in development economics. This is because it contradicts the concept of capital and its role in economic development. By conventional definition, capital means money, credit and shares that can be invested in production of further income and other outputs, over a long period of time¹. In contrast, human capital refers to the capacities of human beings as income producing agents (Eatwell et al., 1987: 681). Becker (1993: 15) noted, that education, training, medical care, and lectures on the virtues of punctuality and honesty are also capital in the sense that they improve health, raise earnings, increase productivity or add to a person's appreciation of literature over his or her lifetime. Therefore, it is compatible with the traditional concept of capital to say that expenditure on education, training, medical care etc. is investment in capital. Becker further argues that these investments produce human, not physical or financial capital, because one cannot separate a person from their

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1 See Becker (1993) for detailed information on differences between capital and human capital and their role in economic development.

knowledge, skills, health, or values the way it is possible to move financial and physical assets independent of the owner. These arguments imply that a country can only achieve economic development from the available material resources and financial capital, when it attempts to enhance its people's knowledge skills, and attitudes of or so-called human capital. This means that human capital is another *sine qua non* for achieving sustainable economic development. This study of human capital development (HCD) limits its scope to the enhancement of human potential achieved through imparting the necessary knowledge, skills, and attitudes through higher education and training institutions. The assumption is that proper knowledge, skills, and attitudes affect the ability to organize non-human resources and accelerate economic and social growth.

Although it is understood that human capital is a major contributor in boosting productivity and economic growth, Pritchett (1996: 1) argued that the growth of educational capital per worker has had no positive impact and perhaps even a mildly negative impact on the rate of growth of labour productivity. He further stressed that the growth of education has a strong negative association with conventionally constructed growth-accounting measures of Total Factor Productivity (TFP). Despite these disagreements, education and training are accepted as leading factors in economic growth in developing countries. Economic growth is considered the best strategy to mitigate poverty, inequality and unemployment in developing countries. For this reason, international organizations and major donor countries have focused exclusively on human capital development to reduce poverty and promote economic growth in developing countries.

The present study will investigate the relationship between human capital and economic growth, analysing results from various studies undertaken in developed and developing countries. It will also investigate

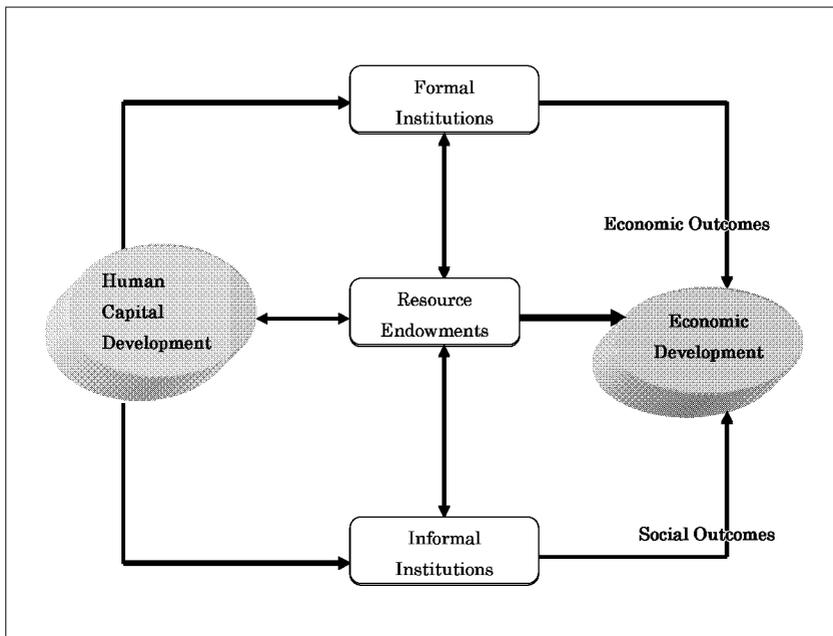
the findings of empirical studies of arguments concerning human capital while providing some relevant performance from the Asian experience, especially from Japan and Sri Lanka.

II. Human Capital and Economic Development: An Overview of the Conceptual Relationship and Performance

1. Human Capital and Economic Development

Although the idea of human capital and its relationship to economic growth is still considered controversial, education and training are seen as the most important investments in human capital. Literature on this subject forms two major groups: one group confirms a strong correlation between human capital and economic growth, while the other found the relationship between these two variables negative or insignificant. Researchers who support the first argument have identified two major economic and social benefits from human capital. They are defined as ‘public’ and ‘private’ benefits (Bloom et al., 2006: 15), monetary and non-monetary benefits (Hill et al., 2005) and social and economic benefits. Although the benefits of human capital are defined by different terms in different studies, it is apparent that all these approaches analyse the positive relationship between human capital and economic development. Using these approaches as a base, the present study hypothesises that human capital, particularly through education and training (hereafter human capital or human resource) benefits by the augmentation of both formal and informal institutions that contribute to the efficient use of material resources, and to good governance. The conceptual framework of this approach has been demonstrated in Figure 1.

Figure 1 Conceptual Framework: Linkage of the Human Capital and Economic Development



As illustrated in Figure 1, human capital can contribute to economic development through the strengthening of formal and informal institutions. Formal institutions comprise the political environment, democracy, government and its administration, law enforcement, leadership and private enterprises. Informal institutions include culture, ethics, ethnic heterogeneity, caste, attitudes, social responsibilities, social harmony, social status, norms of trust, people’s participation, social cohesion, collective action, and humanitarian values. The progress of developed countries has undoubtedly been closely influenced by the advancement of formal and informal institutions through the improvement of human capital. While these two institutions are interrelated and interdependent, it is difficult to quantify such relationships. This means that the strength of these two institutions,

centered on human capital development provides an environment that is conducive to a country's development. Conversely, it could be argued that a country lacking natural resources, but rich in favorable inherited formal and informal institutions can achieve economic success over time, while a country with rich economic factors, but lacking favorable formal and informal institutions, may fail to achieve significant economic development². On this basis it can be said that the enrichment of these two institutions is the other *sine qua non* for achieving sustainable development in any country.

2. Positive Arguments on Human Capital

As Becker (1993: 3) noted, interest in the economics of human capital, particularly education has increased dramatically in recent times. Many of these studies have found after conducting inter-country surveys that human capital is an essential input for economic development. For example, Bloom et al. (2006: 15) have found that education, specifically higher education is a major determinant of economic growth. It has been a principal factor, in boosting productivity, competitiveness and economic growth. They suggest that education produces 'private' and 'public' benefits: the private benefits for individuals include better employment prospects, higher wages, and a greater ability to save and invest. These benefits invariably contribute to an improvement in health and the quality of life, thus increasing life expectancy and productivity.

Public benefits also derive from the private gains. It is accepted that individual gains benefit society as a whole. Higher earnings for educated individuals raise tax revenues for governments and ease demands on state finance. They also translate into greater consumption, which benefits producers from all educational backgrounds (ibid. 2006: 15). These

2 See Ratnayake (2004) for detailed information on theoretical and empirical evidence of this approach.

findings support the World Bank's study in 1991 (extracted from Lopez et al., 1998: 3) on the same subject: 'education enriches people's understanding of themselves and the world. It improves the quality of their lives and leads to broad social benefits for individuals and society. It also raises people's productivity and creativity and promotes entrepreneurship and technological advances, as demonstrated in countries from Malaysia to Ghana'.

Knowledge gained through higher education helps countries catch up with technologically advanced countries through better use of modern technologies, and by developing new equipment and skills. It also favours entrepreneurship, which has a positive effect on job creation and increasing knowledge among co-workers. This leads to economic growth and social development (better health, decline of population growth rate, reduced crime rates, greater civic participation, higher voting rate, understanding responsibility, etc.). As Lopez et al. (1998) stated, no country has achieved economic development without investing in human capital development.

Many studies have shown the handsome returns received from basic education, research, training, learning-by-doing, and capacity-building. A study on the effect of education, particularly higher education on the labour force, and thus on economic growth in Taiwan over the 1965-2000 period also found that higher education provided a positive and significant effect on Taiwan's economic development (Lin, 2004). In this sense, engineering and the natural sciences played a prominent role in this process. In particular, Lin (2004: 366-370) found that the effect of higher education is positive and statistically significant at 10 percent. Bloom et al. (2006: 1) also found that India's leap onto the world economic stage was made possible because of its longstanding practice of making high-quality, technically oriented tertiary education available to its citizens. Human capital was understood to be the principal factor in boosting

productivity by generating skills that raise people's working capacity, which in turn leads to economic growth (Hill et al., 2005: 1; Bloom et al., 2006; Galiani et al., 2008: 437). These productivity gains raise the income level of individuals as well as the economy.

Individual and societal benefits are other important outcomes derived from the augmentation of human capital. According to many studies³ an individual's earnings are related to their educational attainments. Kent et al. (2005: 1-2) found in a survey in Arizona (US) that people who have completed high school earn more than those who have not; people with a bachelor's degree earn more than those with only a high school diploma; and those with graduate education earn more than those with only an undergraduate education. Although these benefits are 'indirect inputs' in the development process, their role in the development process is vital, and must not be undervalued. In conventional development approaches, it is accepted that an increase in earnings contributes to an increase in savings and thereby an increase in investment capacity and consumption levels. These lead to the further enhancement of capital accumulation, leading to the modernization or so-called industrialization of a country.

The non-monetary social benefits of human capital development are seen as the other salient input, which contributes indirectly to the development process. As Kent et al. (2005) found, the informal institutions required for fruitful development as described in Figure 1. are lower crime rates, greater participation in regional development activities, greater awareness of human achievement, an appreciation of cultural diversity and spillover of knowledge among colleagues and neighbours. Furthermore these indirect benefits will continue to develop in future generations. As seen when children of educated parents get better opportunities and support to study, than children whose parents

3 See Hill et al. (2005) for detailed information on the relationship between people's earnings and education.

didn't go to college. Thus, the findings of the studies describe the significant influence of human capital on economic well-being of a country.

3. Negative Arguments on Human Capital

Some studies found that education alone does not guarantee successful development, as shown in the former Soviet bloc, Sri Lanka, the Philippines, and the Indian States of Kerala and West Bengal (Lopez et al., 1998). In this study, although theories have suggested a strong causal relationship between education and economic growth, empirical evidence has not supported this. Similarly, Pritchett (1996) stressed that an increase in educational capital resulting from raising the educational achievement of the labour force has had no impact on the output per worker. The following summary of some studies on the negative arguments of education-growth connections provides further evidence that education alone may not guarantee a country's development.

After WWII, many economists, including Milton Friedman, Gary Becker, and Jacob Mincer, developed the 'human capital' theory to examine the benefits of education for individuals and society. Friedman and his wife Rose originally suggested that there was no evidence that 'higher education yields social benefits' over and above the benefits that accrue to the students themselves. On the contrary, they hypothesized that higher education may promote 'social unrest and political instability' (extracted from Bloom et al., 2006: 1).

These findings have created a contradiction in the conventional expectation in development economics of the importance of education as a principal component for economic development. It is true that education alone is not a guarantee of sustainable economic development.

Education has to be combined with the following two factors to ensure economic development: first, an appropriate policy environment which is strongly linked to the existence of favourable formal institutions in a country; and second, the usability and quality (i.e. disciplines, understanding, attitudes, cooperation and unity) of the education which is necessary to have favourable informal institutions in a country.

It is accepted that the contribution of education to economic growth depends on the country's macroeconomic policy environment. Lopez (1998: 5) claimed 'the policy environment determines what people can do with their education. Policy reforms to open up trade and investment and reduce distorted prices can greatly increase the returns from formal education and enhance the impact of education on growth'. For example, it is widely acknowledged that Sri Lanka's education level and its social indicators throughout the postwar period outstripped those in many low-income countries, but its contribution to economic growth was insignificant compared with that of other countries with a similar level of education, such as South Korea, Malaysia, Singapore, Thailand, and Indonesia. This was seen as a failure of Sri Lankan development policies to create a favourable environment providing opportunities to use educated people productively. In many countries the impact of education on growth is affected by the economic policy environment. Therefore, the provision of free education at huge government cost will not generate sufficient benefits even to meet the cost of that education without good macroeconomic policy reforms, which lead to opportunities for the people who received free secondary and tertiary education. The inability to create such an environment will waste tax payers' money, and will lead to low economic growth, political unrest, and unexpected social violence. This means that more education does not necessarily lead to rapid development.

Two factors relating to macroeconomic policy reforms also mean

that education has a low impact on growth: first, the mismatch of demand and supply in the labour market; and second, the mismatch of the labour market requirements. The former always occurs when the supply of educated labour increases in a period of stagnant demand, which causes the rate of return on education to fall rapidly (Pritchett, 1996). At the same time, it may also make it more difficult to find sufficient labour for blue collar work like agriculture, construction and cleaning, while creating an overly large government sector. The latter often happens when the education system continues its education curriculums without considering the needs of the country and its industrial sector. In this sense, many argue that Sri Lankan higher education does not supply the necessary human capital or technical people required by its economy. The following section discusses about the second factor of education which is important to ensure development.

4. Performance of Human Capital

The usability and quality of human capital also influence the impact of education on growth. For example, Japan's postwar economic success was due to the quality and usability of its human capital much more than that of any other country. Today, it has an extensive impressive educational system that embraces all the country's development requirements⁴. From the Meiji era⁵ Japan introduced Western knowledge

4 “Nearly 40 per cent of eighteen to twenty two-year-olds attend institutions of higher education in Japan, compared to 45 to 52 per cent in the US, 26 per cent in both France and Germany, and 21 per cent in the UK. Moreover, the education is meaningful: Japanese students score extremely well in comparative international examinations; there are few dropouts; most high school programs would be the equivalent of at least one or more years of college in the US. Throughout society as a whole, there is virtually 100 per cent literacy” (Pempel, 1989: 24).

5 The formation of the modern Japanese state has begun with the Meiji Restoration, bringing far-reaching changes to the country's political and economic

through the employment of foreign teachers, sometimes offering salaries which exceeded that of the Prime Minister. The most important feature of this human capital development effort is that it has been able to create a strong, disciplined labour force while providing practical-oriented knowledge. This was initiated from pre-school education onwards. Education, which commences in kindergarten, is aimed at providing a basic knowledge of the manners and the rules needed to live properly in a civilized society. This fundamental pre-school education has been able to provide a strong base to create a highly disciplined society, and to instill patriotism, loyalty and patience. There is no doubt these social norms have helped to create a skilful labour force which has the ability to produce high quality industrial products for the competitive world market. Moreover, the social values taught in schools also fostered the ability to work hard and cooperate to achieve common objectives in the workplace.

In Japan, higher education is largely practice-oriented and has enabled students to work in their chosen fields rather than be confined to classroom education. For example, the main thrust of research work conducted in the field is to find suitable solutions to problems faced by society rather than just meeting the academic requirements to achieve qualifications. In particular, most of the socioeconomic surveys expect to contribute to socioeconomic development while fulfilling the students' academic needs. The workplace also provided practical training on top of the formal qualifications gained from universities and colleges. Unlike

structure. In 1867, Yoshinobu Tokugawa, the 15th shogun of the Tokugawa shogunate government, which, for 260 years had maintained a feudal structure, whose strength was without parallel in the world, surrendered all the powers of state to the Emperor. In December of that year, an Imperial decree was issued declaring the restoration of the Emperor as the supreme ruler of the country. A new Government was formed and in the following year the new era was named Meiji (Ogura, 1967: 3).

Table 1: Trend of Social Development Indicators in Selected Countries in Asia

Country/Region	Growth Rate of Population (%)		Total Fertility Rate ^(a)		Life Expectancy at Birth ^(c)		Infant Mortality Rate ^(b)		Literacy Rate (%)	
	1965-1980	1990-2007	1970	2006	1970	2007	1970	2006	1970	2007
NIEs										
Hong Kong	2.5	1.1	3.3	1.0	69	82	19	5	77	82
Korea	1.8	0.7	4.3	1.1	60	79	51	5	88	--
Singapore	2.0	2.4	3.1	1.3	68	80	20	3	72	94
Taiwan	1.9	--	2.8	1.1	--	78	14	6	--	--
ASEAN										
Indonesia	2.3	1.4	5.5	2.2	47	71	118	34	57	91
Malaysia	2.4	2.3	5.5	2.7	64	74	45	12	55	89
The Philippines	2.5	2.1	6.4	3.3	58	72	66	32	83	92
Thailand	2.7	1.0	5.5	1.8	57	71	73	8	79	94
Myanmar	2.2	1.1	5.9	2.1	49	62	121	104	55	90 (2000)
South Asia										
Bangladesh	2.6	2.0	7.0	2.9	45	64	140	69	23	54
India	2.3	1.7	5.8	2.5	48	65	137	76	33	66
Nepal	2.5	2.3	6.4	3.1	41	64	157	59	14	57
Pakistan	3.1	2.4	7.0	3.9	49	65	142	97	21	55
Sri Lanka	1.6	0.9	4.3	1.9	64	72	53	13	78	92
Other										
China	1.8	0.9	5.8	1.8	69	73	69	24	85	93
Japan	1.1	0.2	2.1	1.4	72	83	13	4	--	--
US	1.1	1.1	2.5	2.1	72	78	7	8	--	--

Note: (a) Birth per woman; (b) Per 1000 live birth; (c) Average of male and female

Source: World Bank, *World Development Report*, Washington D.C., US, Various Issues; Asian Development Bank, *Key Indicators of Developing Asian and Pacific Countries*, ADB, The Philippines, Various Issues; UNDP, *Human Development Report 2007/2008*

Table 2: Per Capita Income (PPP)^(a) in Selected Countries in Asia (US\$ in 1990 Constant price)

	Taiwan	South Korea	China	Hong Kong	Singapore	Malaysia	Indonesia	India	Sri Lanka
1950	924	854	434	2218	2219	1559	840	619	1253
1960	1492	1226	666	3134	2310	1530	1019	753	1300
1970	2980	2167	775	5695	4439	2079	1194	868	1509
1980	5869	4114	1056	10503	9058	3657	1876	938	1849
1990	9886	8704	1839	17541	14220	5132	2526	1309	2448
2000	17007	14220	3313	23299	22258	8189	3322	1885	3646
2008	30881	27939	5962	43922	49288	14215	3975	2925	4585
Increase ^(b)	33	33	14	20	22	9	5	5	4

(a) PPP: Purchasing Power Parity

(b) Times of increase since 1950 to 2008; Source: World Development Indicators Database, World Bank, 2009

Source: UN Statistics Division

in other countries, the employees, particularly engineers, technicians and agricultural scientists, worked on the job with blue-collar workers regardless of their educational qualifications, position and social status. The Japanese experience reveals that a country which has a well developed human capital will not be able to use it productively unless its quality and usability are excellent.

Sri Lanka faces this dilemma to some extent. The Sri Lankan education system was introduced by the British during the colonial period. It gradually expanded throughout the country, though its first objective was to produce the necessary human capital for the plantation sector at a low cost. An IBRD (World Bank) mission to Sri Lanka in 1966 reported that after Japan, Sri Lanka had the best-developed education system in Asia (Wilson, 1977: 307). As a result, at the time of political independence Sri Lanka had the highest literacy rate in Asia. Moreover, it also achieved the highest social development which was similar to or sometimes higher than Asian NIEs and ASEAN countries. However, in the last 50 years development has produced poor economic performance despite the great improvement in literacy and considerably improved social indicators. Tables 1 and 2 demonstrate Sri Lanka's social indicators and economic performance compared with some Asian countries. Table 1 reveals that Sri Lanka's social indicators, especially its literacy rate, population growth rate, fertility rate, life expectancy and infant mortality rate were at the high levels compared to other countries in the last 4-5 decades. However, as depicted in Figure 1, Sri Lanka was unable to utilize these favourable conditions and achieve economic growth. For example, while the per capita income in Taiwan, South Korea, Hong Kong and Singapore grew more than 20-times in the period 1950-2008, in Sri Lanka it only increased by 4-times although its per capita income was almost similar or higher than the above countries.

There are many arguments concerning the poor correlation between

education and economic growth, but one of the major reasons for the country's lack of progress was the failure to indigenise (Sri Lankanise) the imported education system to meet the country's particular needs. Many independent countries have adapted their education system to meet national needs which had been ignored in the colonial period. As Pempel (1989: 25) noted, all nations seek to instill nationalism, patriotism and loyalty through their school system. Although the promotion of nationalism may not conducive to communal harmony and international relationships, creating national cohesion through patriotism and loyalty is a necessary part of achieving economic well-being. In this respect, primary and secondary education in Japan creates the disciplined labour force required for rapid growth in the modern sector. Teaching basic values and responsibilities to children at the very beginning of their education is important in creating productive human capital. In other words, it is time for Sri Lanka to introduce 'moral education' as a compulsory subject in primary and secondary education to create a disciplined labour force, and furthermore promote communal harmony.

One result of the failure to indigenise the education system was that people who studied in Sinhala⁶, but had poor English skills, were not able to contribute to Sri Lanka's economic development. Although, offering free education in Sinhala reflected Sri Lanka's attempt to provide equal learning opportunities, the reality of this policy was that it excluded rural educated youth from the development and prosperity enjoyed by the middle-class urban communities. However, unless education is provided in Sinhala and Tamil languages and the opportunity is given, without discrimination, to work in those languages, the country will not achieve successful development. This would allow all people to participate equally in the country's socioeconomic development. Unfortunately, even

6 Sinhala is a major language in Sri Lanka spoken by more than three-fourths of the people.

today, policy-makers and most intellectuals favour education and employment in English. One example of how much English has pervaded society is the fact that many English-educated Sinhalese prefer to communicate with each other in English, rather than in their mother tongue. One Japanese scholar educated in Sri Lanka said that when he talks to Sinhalese elites in Sinhala, they respond in English. He also said, 'We Japanese use only our mother tongue whenever we meet each other anywhere in the world.' This reveals how much the language barrier prevents Sinhala-educated people from participating in development activities (Ratnayake, 2004). The most serious problem is that it excludes people, in whom the country has invested a huge amount of money with free education, from participating in development activities.

Because of the language dilemma, the human capital developed under the British-style education could not be used as productively as it has been in Japan. Many educated people, particularly scientists, engineers and technicians, are largely confined to theoretical and laboratory type-work rather than practical projects. For example, Sri Lanka has produced thousands of agricultural scientists in the last fifty years, but the country still uses low-yield traditional varieties of vegetables, fruits and cereals (perhaps with the exception of paddy), failing to produce hybrid varieties.

Another negative consequence of this poor use of human capital in Sri Lanka is the attitude towards higher educational qualifications. A Japanese scholar who specializes in Sri Lankan economic and social problems made the following comments on Sri Lankan intellectuals:

Sri Lanka is rich in educated people, many of whom have received their tertiary education in prestigious universities in America and Europe. Most of them think that getting a postgraduate degree, especially a PhD, is the end or the last step in the course of study and

research. They also do not continue their research work unless someone requests them to, or unless they stand to get some gain from the work, i.e. financial benefits, promotion or postgraduate degrees. However, we Japanese, give the first priority to practical experience rather than paper qualifications like Masters or Doctoral degrees. We also think that getting such postgraduate degrees is the beginning of our work and not the end. Such qualifications have provided us with a license to commence our practical work and research. Unlike Sri Lankan scholars, we continue our practical work and research work regardless of benefits. We often think it is our duty to contribute to the economic well-being of other people, using our educational qualifications because we receive our salaries from the people's taxes.

This shows that education alone will not benefit society and the economy unless the quality of education, particularly the attitudes and understanding are improved. Sri Lankans believe free education is their right, with no obligation to return something back to the country.

III. Concluding Remarks

The relationship between human capital and socio-economic development has been understood and received support in all countries regardless of their development stages. A large number of studies have proved the correlation between these two variables. These studies have found that developing human capital benefited both economic growth and social development. They also found that the benefits of human capital invariably led to the efficient utilisation of limited material resources in the development process of developing countries. The major reason is that the augmentation of human capital contributes to the improvement

of formal and informal institutions, which are the mainstay in the utilisation of material resources and financial capital in the development process.

However, it should be stressed that development of human capital itself may not guarantee benefits to the country unless the macroeconomic policies provide opportunities to use such human capital productively. Moreover it should be noted that quality and usability of the human capital are more important in achieving benefits. These factors explain the failure of Sri Lanka to achieve its economic potential despite the high level of educated people.

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