Introduction

Section I

1.1 Introduction

When asked about the major determinants of economic development in an international perspective, the average economist, or the World Bank, is likely to point to the important role of human capital formation (Enrich, 1996). Why are some countries rich and others poor? Why is there a difference in the digits of growth rates? Why living standards of countries vary differently? These had been the grand questions in economic and historical research over the decades (Leeuwe, 2007). The quest of answering such questions has posed an intellectual challenge ever since the beginning of systematic economic analysis.

Different countries of the world used different strategies to achieve the highest possible growth rates and were measured by different methods. Gross national product was and is one of the measures of the economic performance of the countries. Increasing gross national product (GNP) was the main measurement to classify the country as developed and underdeveloped. As Robinson observes, "GNP per capita has been treated as the primary measure of development objectives, economic success, and people's national welfare" (Robinson, 1979, quoted by Haque, 2004). In addition, according to Hoogvelt, it is largely the measure of GNP per capita that has been used to determine a country's economic status and rank in the overall global hierarchy of levels of national development (Hoogvelt, 1982 quoted by Haque, 2004). However, the fact remains that

the measure of GNP not only continues to dominate development studies and policies, it has gained new significance in recent decades due to the global rise or revival of market-biased neoliberal ideology and new economic policy, which tend to prescribe the realization of economic growth and efficiency while ignoring the non-economic spheres that are equally critical for authentic human development (Haque, 2002).

For developing countries, the GNP measure seems to be more realistic, because in these countries, profits or incomes made by foreign investors are much more common and significant than profits made by their residents in foreign countries (Cobb, Halstead, and Rowe, 1995).

In any case, the GNP measure has come to represent the "principal measure of economic progress" and the "criterion of success" (Robinson, 1979). As mentioned above, the measure is used to categorize nations along the continuum between most developed and least developed nations, with other categories (such as high-income, middle-income, lower middle-income, and upper middle-income countries) between the two (Gonzalez, 1988, Haque, 2004).

Although the use of GNP to assess the level of development has expanded and globalized, there are some criticisms of this development measure. It has been pointed out that the valuation of goods and services in terms of GNP requires the existence of perfect market competition, and since such a condition hardly exists, there is certain scepticism about the use of this measure as an indicator of economic welfare (Bannock, 1975).

Another limitation of the GNP measure is that it is incapable of measuring non-economic (social) dimension of human welfare, which

constitutes an essential part of overall development. Also, this measure assumes all outputs as beneficial, without making any distinction between "productive and destructive activities" (Cobb, Halstead, and Rowe, 1995).

In opposition to parochial economist view of development held by mainstream economists, it is emphasized by some scholars that there is no direct compatibility between GNP growth rate and actual human development. As Daly points out, "Limits to growth do not imply limits to development" (Daly, 1989). Similarly, for Trainer, "identifying development with sheer economic growth certainly does wonders for GNP, but it does very little for the poor majority" (Trainer, 1989).

Alschuler mentions, "that sometimes economic growth may lead to national disintegration, internal colonialism, state repression, and thus, mal-development" (Alschuler, 1988). Another scholar Shiva, points out how the GNP measure may eventually imply mal-development. According to Shiva, "there are indeed certain developing nations with high GNP growth rates (especially the Newly Industrialized Countries), which have achieved such high growth rates often at the expense of internal state control and external dependence" (Shiva, 1989, Quoted by Haque, 2004).

Based on the market value of production it has been also pointed out that most measures of "economic growth", especially GNP, tend to put emphasis mainly on the market value of production, and thus on "the rate at which resources are converted to commodities", without taking into account all the goods and services that are not exchanged in the market (Mander and Barker, 2001).

According to Shiva in this regard, "when people eat self-produced foods, live in self-built house, and wear handmade garments, they are considered poor since these products have not been assigned with monetary values, but when they eat processed food, live in rented house, and wear machine-made garments available in the market, they are considered rich" (Shiva, 1989).

In the case of India, according to Chopra, "the unorganized barter economy" of rural India was largely excluded from the national income account (Chopra, 1983). However, with the deeper incorporation of many developing societies into the world market, and the proliferation of the money economy into every sphere of life, the GNP figures may show considerable progress, but often without much improvement made in actual quality of life. In some cases, a considerable portion of increased GNP may have nothing to do with real increase in goods and services, except the process of their marketization and valuation in monetary terms (Bjonnes, 2002).

Another shortcoming suggests that GNP measure fails to include unpaid labour involved in household activities such as caring for children and elderly parents at home, growing and preparing foods for family consumption, providing voluntary services to the community, and so on (Cobb, Goodman, and Wackernagel, 1999; Mander and Barker, 2001, Quoted by Haque, 2004).

In modern market economies, a considerable portion of economic growth (in terms of GNP) are based on activities and goods and services that hardly contribute to human well-being in any form. As pointed out by

Cobb, Goodman, and Wackernagel, "the GNP or GDP is simply the total amount of money spent on goods and services irrespective whether they increase or diminish actual well-being" (Cobb, Goodman, and Wackernagel 1999). Another item that adds to GNP but cannot be consumed or do not improve human well-being, includes the production of military hardware and lethal weapons which represents one of the biggest sources of government expenditure in the world (Mander and Barker, 2001).

On the other hand, the opportunity costs of expansive military budget in developing countries are significant, because the huge defence budget reduces the funds available for the education, health, transport, and housing sectors that are so critical for the well-being of poor population.

The GNP figure is flawed because while it takes into account the depreciation of industrial plant, it fails to consider the depletion of "natural capital" like fossil fuels and forest resources (Brown, 1990). Similarly, scholars agree that the damage to environment caused due to economic activities are also excluded from the measurement of GNP which leads to under estimation and over estimation of GNP due to externalities.

In order to overcome some of the major limits or shortcomings of GNP, there have emerged some alternative measures for assessing development. For example, Physical Quality-of-Life Index (PQLI) developed by Morris D. Morris and his associates, that covers issues like life expectancy, infant mortality, and adult literacy (Barnett, 1988).

On the other hand, the UN Expert Group covered a broader range of items in defining the "level of living", including health, education,

nutrition, housing, employment, transportation, security, freedom, recreation, etc. (Estes, 1988). Very similar list of items was considered by the OECD in its concept of "social well-being" which, according to Estes, reflects the living status in developed nations rather than developing countries (Estes, 1988),

Based on such a critique of existing measures of socio-economic development, Estes himself presents a separate index called "Index of Social Progress" (ISP) in order to assess human welfare—it consists of 44 social indicators that are classified into eleven sub-indices, including health, education, defence, demography, geography, economics, political stability, and so on. Some other authors present indicators such as Happy Life expectancy, Genuine Progress Indicator, International Human Suffering Index, and so on (Yeh et al., 2001).

On the other hand, Gonzalez offers the so-called "socioeconomic development index" (SEDI) that consists of four factors, including income, diet, health, and education. He compares the above four measures (GNP, PQLI, ISP, SEDI), and explains how socioeconomic ranks of different countries vary when these diverse measures are used (Gonzalez, 1988).

However the difference in the growth digits led to many other more intellectual debates and this situation changed in the 1960s when scholars stopped seeing development solely in terms of physical capital and GDP. This increased the importance that was placed on factors as consumption, life expectancy, health, and human capital. Economic development in 1950's had been identified with the GNP/GNP per-capita (Debraj, 1998).

The United Nations in the resolution set targeted rate of five per

cent GNP of lower developed countries (LDC's) for the development decade of the 1960's. To achieve this target less developed countries suggested rapid industrialization along with urbanization based on the Rostow's stages of growth. Problems of poverty, unemployment and inequality were given secondary importance. It was believed that GNP will "trickle down.

The linear view was further strengthen by Nurksian dictum of "vicious circle" and it was believed that removal of its elements will set free the natural forces which would lead to higher growth. For this Rosenstein Rodan advocates "Big Push", Nurkse, the "Balanced Growth", Hirschman the "Unbalanced Growth", and Leibenstein, the "Critical Minimum Effort". David Morawetz estimates showed that as a result of these development strategies, GNP of developing countries grows at an average rate of 3.4 per cent (Morwatez, 1977).

Todaro called it the traditional concept of economic development i.e. "the capacity of an economy to generate and sustain an annual increase in its GNP at the rate of 5-7 per cent or more" (M. Todaro, 1985). It virtually implies the capacity of an economy to expand its output at a faster rate than the growth rate of its population. However the economic development as an increase in GNP doesn't "trickle down" and many issues remain hidden.

Seer's was the first who raised the question of unemployment, inequality and poverty and defined economic development as, "sustained reduction in all the three" (Seers, 1998). Seer's purpose of the development is to reduce all the three. The essential components were

education, health and equality of opportunities to all were improving. World Bank realized the need of these components and covered them under one term welfare and opines development as the well-being of the people (World Bank, 1992).

Sen looked at the development in terms of expansion of freedom, reducing deprivation and broadening choice (A. Sen, 1996). Deprivation represents a multi-dimensional view of poverty that includes hunger, illiteracy, illness, insecurity, humiliation and lack of access to basic infrastructure (E. Wayne, 2005).

Given different approaches to Economic development, no one denied the fact that economic development is the goal of every country (developed as well as developing countries). The policy goal of every country is to increase the welfare of its citizens. All countries strive to raise or sustain their level of development, following different strategies which sometimes extents to the realm of politics.

Different strategies followed by different countries to develop depend upon different thoughts. The knowledge of different sources of growth, different policies to follow and forms of growth lead us to discuss the views of different philosophers. The philosophers used their different intellectual to define the path of growth in different way. The views of different scholars are briefly discussed in the following section.

Section II

Theories of Economic Growth – Old and New

Ever since the inception of systematic economic analysis at the time of the classical economists from William Petty to David Ricardo the problem of economic growth – its sources, forms and effects – was high on the agenda of economists. In the real world the problem and the fact of economic growth are, of course, of much longer standing (Kurz, H.D., Salvadori, 2003). In this section an attempt is made to summarize the contributions of different scholars and philosophers to the theory of growth.

1.2 Adam Smith

Adam Smith viewed the growth process as strictly endogenous placing special emphasis on the impact of capital accumulation on labour productivity (Kurz, H.D., Salvadori, (2003). He began his enquiry into the *Wealth of Nations*, first published in 1776, by stating that, "income per capita must in every nation be regulated by two different circumstances; first, by the skill, dexterity, and judgment with which its labour is generally applied, thus focusing on the factors determining the growth of labour productivity; and secondly by the proportion between the number of those

who are employed in useful labour, and that of those who are not so employed" (Adam smith, 1776).

According to Smith there is no upper limit to labour productivity. This is why Smith maintained that an investigation of the growth of income per capita is first and foremost an enquiry into 'the causes of this improvement, in the productive powers of labour, and the order, according to which its produce is naturally distributed among the different ranks and conditions of men in the society (Adam smith, 1776).

Smith's conviction was that the key to the growth of labour productivity is the division of labour and specialisation which in turn depends on the extent of the market and thus upon capital accumulation. The greatest improvement in the productive powers of labour, we are told, seems to have been the effects of the division of labour both within given firms and industries and even more significantly between them (Adam Smith, 1776).

Smith's analysis foreshadows the concepts of induced and embodied technical progress, learning by doing, and learning by using. The invention of new machines and the improvement of known ones is said to be originally due to the workers in the production process and 'those who had occasion to use the machines (Adam Smith, 1776).

According to Eltis, "Smith clearly believed that growth would eventually cease when a country's potential for development was fully realised. However, in Smith's analysis it is not sufficiently clear how a country's potential is defined. Ultimately, a falling trend in the rate of profit

is taken to indicate that the potential is getting exhausted. Yet, Smith's explanation of that trend is difficult to sustain" (Eltis, 1984).

1.3 David Ricardo

Ricardo was one of the first to stress that technological progress can take several forms associated with different implications for the performance of the system its growth, employment and the sharing out of the product between wages, rents and profits (Kurz, H.D., Salvadori, 2003).

Like Smith, Ricardo thought that saving and investment, that is, accumulation, would largely come from profits, whereas wages and rents played a negligible role. Hence, as regards the dynamism of the economy attention should focus on profitability. Ricardo set aside what may be called "statically and dynamically increasing returns". As capital accumulates and population grows, and assuming the real wage rate of workers given, the rate of profit is bound to fall; due to extensive and intensive diminishing returns on land, 'with every increased portion of capital employed on it, there will be a decreased rate of production' (Ricardo 1817, edi1951).

Since profits are a residual income based on the surplus product left after the used up means of production and the wage goods in the support of workers have been deducted from the social product (net of rents), the 'decreased rate of production' involves a decrease in profitability. On the assumption that there are only negligible savings out of wages and rents, a falling rate of profit involves a falling rate of capital accumulation. Hence,

Ricardo's 'natural course' of events will necessarily end up in a stationary state.

According to Ricardo "the natural tendency of profits then is to fall; for, in the progress of society and wealth, the additional quantity of food required is obtained by the sacrifice of more and more labour. This tendency, this gravitation as it were of profits, is happily checked at repeated intervals by the improvements in machinery, connected with the production of necessaries, as well as by the discoveries in the science of agriculture which enable us to relinquish a portion of labour before required, and therefore to lower the price of the prime necessity of the labourer" (Ricardo 1817, edi1951).

1.4 Linear Classical Models of Production

Central elements of classical analysis are the concept of production as a circular flow and the related concept of surplus product left after the wage goods and what is necessary for the replacement of the used up means of production have been deducted from the annual output. This surplus can be consumed or accumulated. With constant returns to scale and setting aside the problem of scarce natural resources, the notion of an economy expanding at a constant rate of growth was close at hand.

1.5 Robert Torrens

In his Essay on the External Corn Trade clarified that the concept of surplus provides the key to an explanation of the rate of profit. He put forward a 'corn model' in which the rate of profit can be determined as the ratio of two quantities of corn: the surplus product and the corn advanced as seed and as food in the support of workers (Torrens, 1820).

Torrens made it clear that the physical schema of the production of commodities by means of commodities is not only important for the determination of the rate of profit and relative prices – it also provides the basis for assessing the growth potential of the economy. As Torrens stressed, 'this surplus, they [that is, the cultivators and manufacturers] might employ either in setting additional workers to work, or in purchasing luxuries for immediate enjoyment' (Torrens, 1820).

1.6 Karl Marx

Growth in the model by Torrens is both linear and endogenous; the rate of growth depends on the general rate of profit and the propensity to accumulate (Kurz, H.D., Salvadori, (2003). The same can be said of Marx's theory of accumulation and expanded reproduction in chapter twenty one of volume II of Capital (Marx, 1885 edi. 1956). Marx studied the conditions under which the system is capable of reproducing itself on an upward spiralling level. The expansion of the economy at an endogenously determined rate of growth is possible. This rate depends on the proportion of the surplus value ploughed back into the productive system to increase the scale of operation.

Marx stressed that the accumulation of capital is 'an element immanent (existing) in the capitalist process of production' For, the aim and compelling motive of capitalist production' is 'the snatching of surplus-value and its capitalization, i.e., accumulation' (Marx, 1956).

1.7 Models of Exogenous Growth

The marginalist or 'neoclassical' school of thought seeks to explain income distribution in a symmetrical way via the relative scarcities of the

factors of production, labour, capital, and land. Interestingly, the idea of exogenous growth which classical theory did not entertain is the starting point of important early works in the marginalist tradition.

1.8 Alfred Marshall

The idea of an economic system growing exclusively because some exogenous factors make it grow has variously been put forward in the history of economic thought as a standard of comparison. For example, in chapter V of book V of his Principles, first published in 1890, Alfred Marshall introduced the 'famous fiction of the "Stationary state" ... to contrast the results which would be found there with those in the modern world' (Alfred Marshall, 1890, edi. 1920).

By relaxing one after another of the rigid assumptions defining the stationary state, Marshall sought to get gradually closer to the 'actual conditions of life'. The first relaxation concerned the premise of a constant (working) population: The Stationary state has just been taken to be one in which population is stationary. But nearly all its distinctive features may be exhibited in a place where population and wealth are both growing, provided they are growing at about the same rate, and there is no scarcity of land: and provided also the methods of production and the conditions of trade change but little; and above all, where the character of man himself is a constant quantity. For in such a state by far the most important conditions of production and consumption, of exchange and distribution will remain of the same quality, and in the same general relations to one another, though they are all increasing in volume. (Alfred Marshall, 1890, edi. 1920)

Prior to Cassel, Knut Wicksell had dealt with the problem of growth and income distribution in volume I of his Lectures. Wicksell assumed that production is carried out by means of labour, land and capital, that is, produced means of production, and that there was the possibility of substitution between these factors (Wicksell, 1934).

1.9 Robert Solow, Trevor Swan and James Meade

Focusing attention on the models with a single primary factor (labour), in steady-state equilibrium

$$sf(k) = gk,$$

Where

s is the (marginal and average) propensity to save,

$f(k)$ is the per unit of labour or per capita production function,

k is the capital-labour ratio (where labour is measured in terms of efficiency units), and g is the steady-state growth rate of capital (and labour, and income etc.).

In steady-state equilibrium output expands exactly as the exogenous factors make it grow. Assuming $s > 0$ presupposes that the exogenous factors are growing at some positive rate. In these models the steady-state rate of growth is exogenous. Outside steady-state equilibrium the rate of growth can be shown to depend also on the behavioural parameter of the system, that is, the propensity to save (and invest), but that parameter plays no role in determining the long-term rate of growth.

1.10 The 'new' models of endogenous growth

One of the key properties of the new growth models emphasized by their advocates is the limitation of diminishing returns to capital. The first

generation of new growth models defined the confines within which subsequent contributions to new growth theory were carried out. The attention focuses on the mechanism that prevents the returns to capital from falling (Kurz, H.D., Salvadori, 2003).

The first class of models set aside all non-accumulable factors of production such as labour and land and assume that all inputs in production are accumulable, that is, 'capital' of some kind. The simplest version of this class is the so-called 'AK model',

In the two-sector version in Rebelo it is assumed that the capital good sector produces the capital good by means of itself and nothing else. It is also assumed that there is only one method of production to produce the capital goods. Therefore, the rate of profit is determined by technology alone. Hence, in the model the rate of profit is determined by technology alone and the saving-investment mechanism determines the growth rate (Rebelo 1991).

King and Rebelo essentially followed the same avenue. Instead of one kind of 'capital' they assumed that there are two kinds, real capital and human capital, both of which are accumulable. There are two lines of production, one for the social product and the real capital, which consist of quantities of the same commodity, and another for human capital. The production functions relating to the two kinds of capital are assumed to be homogeneous of degree one and strictly concave. There are no diminishing returns to (composite) capital for the reason that there are no non-accumulable factor such as simple or unskilled labour that enters into the

production of the accumulable factors, investment goods and human capital (King and Rebelo, 1990).

As in Rebelo's model the rate of profit is uniquely determined by the technology (and the maximization of profits which, because of the non-substitution theorem, implies that only one technique can be used in the long run); the growth rate of the system is then endogenously determined by the saving-investment equation. The larger the propensities to accumulate human and physical capital, the larger are the growth rate.

The second class of models preserves the dualism of accumulable and non-accumulable factors but restrict the impact of an accumulation of the former on their returns by a modification of the aggregate production function. Jones and Manuelli for example, allow for both labour and capital and even assume a convex technology, as the Solow model does. However, a convex technology requires that the marginal product of capital is a decreasing function of its stock, not that it vanishes as the amount of capital per worker tends towards infinity (Jones and Manuelli, 1990).

Finally, there is a large class of models contemplating various factors counteracting any diminishing tendency of returns to capital. Here human capital formation and knowledge accumulation gain significance. In both kinds of models positive external effects play an important part; they offset any fall in the marginal product of capital.

1.11 Human capital and its components

Given the goal of the country to develop and different strategies at the disposal, one important debate remains is the sources of growth or

development or the channels through which a country can raise development. Among the different sources human capital remains an important factor in the process of growth. Human capital is widely accepted as an important determinant of economic growth and the importance of human capital accumulation is unconditionally acknowledged in the existing exogenous and endogenous growth theories (Mankiw et. al. 1992, Bergheim. 2005 and Howitt, 2005). By improving the human capital the economic attributes for the welfare of the people increases.

However what is still debatable is the factors that should be considered as components of human capital. The exclusion and inclusion of different components of the human capital to relate it empirically with other variables such as growth leads to the discussion of concept of human capital.

The difference in the various definitions of the human capital arises only because of differences in the inclusion or exclusion of different components. Human capital is represented by the aggregation of investments in activities, such as education, health, on-the-job training and migration that enhance an individual's productivity in the labour market (Behrman and Taubman, (1982), Kiker, (1966), Becker (1964), Schultz, (1961, 1962). More recently, this concept has been extended to include non-market activities.

Talking about the components of the human capital, education and health remain the priority. Education which is probably the most important determinant of human capital affects the output through various channels.

It increases knowledge which helps to produce more output in relatively smaller time and also it is intuitionally suggested that an educated person could learn much faster (Bergheim, 2005).

Increase in the level of education also leads towards better health due to an increase in the awareness of the benefits of healthy living, which in turn increases the output. Moreover, education also enhances the labour force participation in an economy particularly in the case of female participation and output increases further, due to the higher labour force participation rate. Along with education, the role of experience is also very important in productivity growth. Experience generally reduces the chances of errors and increases the output in a given time period.

Health and nutrition are also important elements of human capital. A healthier worker can contribute more in the production process than the unhealthy counterpart. There are several channels that define the contribution of health in production and output. Like a healthier worker can produce more output than an unhealthy worker because of his/ her higher physical and mental capabilities, vigour and stamina. In the same way, for a given level of all other factors, the economy can produce higher output if it has higher level of healthy workers. Health is an important factor for determining the level of returns from education because a healthier person can learn more than an unhealthy one from a given level of education. In this way, improvement in health increases output due to increased strength and also due to more learning from a given level of education.

Nutrition has a strong link with productivity, output and economic growth. The person whose intake of nutritious food is high is likely to be more productive due to high vigour and strength. In this way providing good nutrition is considered as an investment in human capital. Especially in the case of economic growth, education and health reinforce each other; being healthy is as important for economic growth as being educated (Taniguchi; Wang, 2003).

Human capital is defined by OECD as "the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being" (OECD 2001). There are eight specific aspects of any broad definition of human capital that make it mandatory to qualify as human capital (Folloni 2010).

First, this broad definition affirms that human capital comprises an innate and an acquired component. Innate abilities are defined as all physical, intellectual and psychological capacities that individuals possess at the time of birth. While innate abilities represent the individual's potential for human capital accumulation, human capital also includes knowledge and skills, which help actualize this potential. These skills are acquired over one's lifetime through inter-generational transfers of knowledge, personal contacts, work experience, on-the-job-training, education and socialization.

Second, human capital is a non-tradable good. Whether innate or acquired, skills and knowledge are embodied into human beings. As long as human beings remain non-tradable goods (no slavery), there exists no market that would permit the exchange of human capital assets.

Third, individuals do not always control the channels and pace by which they acquire human capital. When young, they cannot make rational decisions about their needs for human capital, nor can they assess the potential of their innate abilities. Consequently, during the first years of life, human capital decisions are not made by its owners, but by their parents, teachers, governments, and by society as a whole through its educational and social institutions. As individuals are able to make independent decisions, they will internalize the decision process on human capital investments. However, since the owners' ability to invest further in human capital depends on past investments and on the social environment, the influence of their peers and of the institutional context in which they live continually shapes their acquisition of human capital, both in type and amount.

Fourth, human capital can be acquired either formally or informally. Formal acquisition is generally done through established institutions and programs, where knowledge and skills are transmitted in educational environment. Human capital can also be acquired informally, through a variety of social organisations, personal contacts, work experience (learning by doing), and through self-teaching.

Fifth, human capital has qualitative as well as quantitative aspects. Although one can easily quantify an individual's total years of schooling or daily caloric intake, it cannot be assumed that human capital investments are qualitatively homogeneous.

Sixth, human capital can be either general or specific. Knowledge

and abilities are said to be general if it is possible to use them in a variety of activities and if they are easily transferable from one employer to another without any significant loss of value. Conversely, human capital is specific if it can only be used in a limited number of activities and if the dissolution of employment relationships between workers and firms represents considerable losses of value for that can only be regained through costly investments.

Seventh, the stock of knowledge and abilities embodied in every human being may not always be fully utilized. This gap may arise from a mismatch between acquired skills and those demanded by the labour market, from economic fluctuations, from labour market distortions or from individuals' conscious or unconscious decisions not to use and exploit their full potential.

Finally, the definition of human capital also contains the notion of external effects. These spill overs take into account the influence that individuals have on the productivity of others and of physical capital, as well as the fact that individuals will be more productive, for any given level of skills, in an environment containing a high level of human capital. This facet of human capital highlights the determinant role that highly concentrated human capital centres, such as universities, cities, research centres and agglomerations of high technology firms have in the development and advancement of knowledge, technology and growth (Jacobs, 1984).

Section III

Human Capital and Economic Growth

To have a starting point for any serious discussion of the role of human capital in economic growth, it takes a combination of an explicit theory about economic growth and empirical evidence based on this theory. A useful theory of economic growth would predict the quantitative impact of human capital formation by identifying parameters that can be measured. Applied research then has to show whether the theoretical predictions are more or less in line with the empirical evidence (Abass, 2000). If so, the theory may be used as a framework for discussing the role of human capital formation as an engine of growth.

Human capital in nature encompasses knowledge, information, ideas, skills, and health of individuals. Technology may be the driver of present day modern economic growth, especially for the science based sector and advanced economies of the world, but human capital is certainly the energy required to drive the vehicle of modern economic growth (Becker, 2002).

There exist extensive sources and theories for the studies of human capital development in relation to economic growth. Varying growth theorists have various approaches to human capital as an important component of economic development. Both theoretical and empirical researches have substantiated the fact that investment in human capital formation of a country plays a fundamental role in improving the efficiency and productivity of human beings, and through them the various

factors that complement and supplement the production process.

1.12 Human Capital in growth theory

There are two main theories of growth discussed in the economic literature. The first, neo-classical approach treats technological progress as being a residual after the effects of increases in labour and capital have been accounted for. This residual was initially quite large (accounting for more than 85 per cent of output growth in Solow's 1957 estimates) but its magnitude was reduced by gradual improvements in measurement that took more account of quality of labour and capital. In the process, the effects of education, research and development, and variations in the type and age of capital came to play a greater role in the model (Abass, 2000, Folloni (2010).

A limitation of the neo-classical approach is that the process of growth is exogenous to the model and is simply assumed to take place spontaneously through time. While it focuses on accounting for the components of growth, nothing is said about the possible causes of growth and productivity increases.

The Neoclassical growth model of Solow (1956), which has been for the past thirty years the central framework to account for economic growth, focuses on exogenous technical population factors that determine output-input ratios. The model was response to the failure of Malthusian model. Neither Malthus's nor the Neo classicists approach to growth pays much attention to Human Capital. Yet the evidence is quite strong of close link between investments in human capital and economic growth (Thirwal, 2000).

The second and more recent 'new growth' view, gives improvements in human capital an important role in the process of growth through greater innovation and the adoption of new technologies. The so called endogenous growth models allow causal elements to be incorporated as inputs to the production function. Of particular interest are educational investment decisions and their potential external benefits since human capital is both a source of new knowledge and an essential input into research activity. The implication is that any investment in education would result in a persistent and continual improvement on technical change and economic growth by building up an economy's capacity for greater innovation. The magnitude of this effect is less clear, but the theory has been attracting increased attention in the literature.

Among the supporters of the new growth view Schultz noted that the growth rate of output exceeded the growth rate of relevant input measures (employment and physical capital) suggesting that investment in human capital generates a growth of productivity (Schultz, 1961). The new technologies don't have a high value in countries with poor human capital (lack of know-how and skills to use them). The healthy employee adapts to working conditions and is capable of generating maximum productivity. Therefore, prevention of illnesses, including occupational ones, and promoting health should be a major goal of any society, which translates into an increase of productivity and life standards. Good health reduces the depreciation of human capital and therefore has a positive effect on economic growth. Investments in human capital must be made at an early age. A generation of malnourished children, deprived of the most basic

health services and education, when mature, won`t be able to properly perform in a competitive labour market.

Uzawa and Rosen also stress the importance of human capital in driving economic growth (Uzawa, 1965 and Rosen, 1976). According to Nelson and Phelps the ability of nation to adopt and implement new technology from abroad is function of its domestic human capital stock (Nelson and Phelps, 1966).

Recent models of economic growth by authors such as Romer and Lucas emphasize that investment in human capital is an important factor contributing to economic growth (Romer, 1986 Lucas, 1998). These models generate persistent growth endogenously from the actions of the individuals in the economy. An additional role for human capital may be as an engine for attracting other factors such as physical investment, which also contribute measurably to per capita income growth.

Recent experience with attempts to accumulate physical capital at a rapid rate in poor counties bears out the necessity of due attention to human capital because it has become evident that the effective use of physical capital itself is dependent on human capital. Human capital and physical capital are complimentary in achieving growth in productivity and therefore in achieving generalized economic growth. If there is underinvestment in human capital, the rate at which additional physical capital can be productively utilized is limited since technical, professional, and administrative people are needed for the effective use of physical capital.

Lucas suggested that physical capital fails to flow to poor countries

because of their relatively poor endowment of complementary human capital (Lucas, 1990). The large proportion of empirical evidence on the effect of human capital on growth are studies that use data on cross-section of countries and try to link some initial level of human capital with subsequent real output growth. In general, the results from the existing theoretical models suggest a positive impact of human capital on real growth. However, the individual empirical studies, though they provide numerous intriguing findings, differ substantially on their predictions, there is no consensus on the overall implications of the results.The empirical importance of human capital and economic growth can be analysed under the following linkage of human capital components and economic growth.

1.13 Education and Economic Growth

From the early 1990s, various studies have attempted to identify the determinants of economic growth; long-run growth is endogenous rather than exogenous (Romer, 1986; Lucas, 1988; Mankiw et. al. 1992). Lucas's (1988) interpretation of human capital seems closer to population wide education - a social activity not directly related to the knowledge on the frontier of science and technology as argued by (Romer, 1986).

The contribution of education to economic development has mainly relied on cross-country estimates of gross enrolment rates or average years of schooling, which may be grossly inadequate if rates of return to investment in education or quality of education differ substantially across the countries.

The weak correlation between growth and increases in educational attainment across the countries is observed by (Benhabib and Spiegel,

1994 and Pritchett, 1997). Using panel data, Caselli find a negative and significant correlation between output growth and secondary enrolment ratio (Caselli et al. 1996). Knowles and Owen find that education is not statistically significant in a range of models that include life expectancy and base period output per capita (Knowles and Owen 1995).

In contrast to these findings, Barro and Sala-i-Martin (1995), Sala-i-Martin (1997), McMahon (1998), Temple (1999), Bils and Klenow (2000), Self et al. (2004) find schooling to be positively correlated with the growth rate of per capita Gross Domestic Product across countries. The differential outcome of education at the cross-country level is due to the existence of influential outliers and measurement errors of the model (Temple, 1999; Hojo, 2003).

Most empirical research so far relies on rather traditional models of growth and development, which ignore some of the crucial aspects of the new growth models taking into account the dynamic feedback of the growth affecting variables. The indirect effect of education on economic growth is measured through productivity improvement. The productivity of labour is influenced by the investment in human capital. This line of thought has not only caused reawakening of the field of endogenous growth but has also established the significance of human resource development through the spill over benefits of education in achieving fast economic growth in many countries including the countries in Asia and Africa (McMahon, 1998; Brempong et al., 2004).

1.14 Health and Economic Growth

The importance of health as human capital to economic growth is supported by different empirical evidences. It is commonly believed that economic growth leads populations to live better, have longer life and good health. Firstly, economic growth means rising per capita income and part of this increased income is translated into the consumption of higher quantity and better quality nutrients. Through nutrition, health as measured by life expectancy responds to increases in income (Fogel, 1997).

Secondly, economic growth is fuelled by technological progress and part of this progress is reflected in improvements in medical science (Rosen, 1993). The state of health in a country affects its economic growth through various channels. When health improves, the country can produce more output with any given combination of skills, physical capital and technological knowledge. One way to think about this effect is to treat health as another component of human capital incorporated in formulating the endogenous growth models (Thomas et al., 1997, Bloom et al., 2001).

The effects of human capital variables (namely, health and education) imply that the investment rate tends to increase as levels of education and socioeconomic status of health rise. Longer life expectancy encourages larger investments in human capital, which in turn accelerates the per capita income. The explanation of larger investments on human capital due to longer life expectancy is offered by Stark in terms of intergenerational transfer of assets. The provision of public resources for better health in a developing country can assist the poor to release resources for other investments, such as in education, as a means to escape poverty (Stark 1995).

The long-term relationship between income and health is examined by Arora, considering the developed countries in the world and has observed the hypotheses that health of the population has influenced economic growth and that it should be an integral component of the productivity of economies and supporting the endogenous growth models. A similar study made by Arora (2001) provides that in the co-integrated relation between health and income, innovations in health lead to economic growth and not vice versa. Arora's findings is found to be similar to those reported by Fogel (1994; 1997) who has carried out a study on Western Economies over the past two centuries, from 1780 to 1979. Health and demographic variables play an important role in determining economic growth rates (Bloom and Sachs, 1998).

More recent studies have examined the effects of life expectancy on economic growth in the subsequent 15 to 25 years, which have consistently been found having strong positive direct effects as well as indirect ones operating through rates of investment in physical capital or demographic profiles of the populations (Barro, 1997; Sachs and Warner, 1997)

An initial health status on growth is positively correlated but has even strong correlation more in low-income countries. A series of macroeconomic cross-country studies have also found evidence for a significant impact of health (measured by life expectancy) on economic growth (Mayer-Foulkes, (2001); Caselli et al., (1996), Gallup and Sachs, 2000).

There is significant long-term impact (25-30 years) of life expectancy on economic growth. (Mayer-Foulkes et.al. 2001). In the very

recent period, the empirical validity of the theoretical model on income, health and health expenditure is examined in India by Haldar, at the disaggregate level (state level) using Granger Causality tool and has found different types of results at the state level (Haldar, 2008).

Section IV

Human capital scenario in Jammu and Kashmir

Human capital is an important factor used in converting all resources for the benefit of mankind. Economists have observed that the development and utilization of human capital is important in a nation's economic growth. The scenario of human capital of Jammu and Kashmir is provided under the education and health as two components of human capital.

1.15 Education as component of Human capital

Education is the most important lever for social, economic and political transformation. A well-educated and skilled population not only drives economic and social development but also ensures personal growth. The spread of education in society is at the foundation of success in today's globalized world, where the real wealth of a country or state is not in its tangible natural resources but in knowledge.

At the time of Independence the literacy rate of the state was only five per cent. Census 1961 put the literacy rate of the State at 11.03% which increased to 18.58% during 1971 census. In 1981, the literacy rate was recorded at 26.67% and the projection for 1991 was made at 45% as no census was carried out during latter period. During the decade 2001-

2011, literacy rate increased from 55.50% to 68.74% in the State as shown in table 1.1. Category-wise also, the rate of increase in literacy percentage both among males and females is better in the State.

The Gross enrolments ratio at the primary level was 86.32 in 1995-96 in Jammu and Kashmir. It increased to 100.49 in 2005-06 and stood at 103.09 in 2006-07. The gross enrolment ratio at primary level stood at 117.25 in 2009-10. The year with highest gross enrolment ratio was 2011 accounted for 119 and the year witnessed with lowest gross enrolment ratio at primary was 2002-03 accounted for 71.52 as presented in table 1.2

The gross enrollment ratios at the secondary level estimated here takes under consideration the class from secondary to higher secondary in the Indian standard. The continuous increasing the students on roll increased gross enrollment ratios at secondary level from16.3 in 1995-96 to 42.24 in 2001-02 but started decreased to 33.38 in 2002-03. The gross enrollment at secondary level stood at 41.14 in 2007-08 and reached 52.8 in 2011-12. The gross enrollment ratio was highest in the year 2010-11 stood at 53 but reached to 49.21 in 2015-16 presented in table 1.2.

Table 1.1 Literacy rate

Year	Jammu and Kashmir		
	Male	Female	Total
1961	16.97	4.26	11.3
1971	26.75	9.28	18.58
1981	36.29	15.28	26.67
2001	66.60	43.00	55.50
2011	78.26	58.01	68.70

Source: Computed from various Census reports

Higher education represented the backbone of the human capital to be utilized in the near time than the primary and secondary. The mere possibilities arise after higher education to get back the gains or returns on investment incurred in the form of gaining primary or secondary education. It is higher education after that the utilization for achieved skills gained during time came into being. As far as the higher education gross enrollment in the state are concerned they are quite low in fact the gross enrollment ratios have never gone beyond 27 which is shown in table 1.2.

The expenditure on education has been increased in the state of Jammu and Kashmir. The expenditure on education is taken as all government spending's of state as actual expenditure from time period 1995-96 to 2015-16 shown in table 1.3. The rough data glimpsed that the expenditure on the education was 382 in 1995-96 and it reaches to 3754.3 in 2015-2016 showing that the expenditure on education in absolute terms increases. However the share in total expenditure was between 9 to 14 per cent during the entire time period of 1995-96 to 2015-16. The share of education expenditure of GSDP also goes down from 5.48 in 1995-96 to 3.95 in 2004-05 and jumped to 8.6 in 2015-16 as shown in table 1.3.

Table 1.2 Gross Enrolment ratios

Year	GER Primary	GER Secondary	GER Higher
1995-96	86.32	16.3	1.89
1996-97	79.33	18.9	2.01
1997-98	80.3	17.29	2.1
1998-99	87.12	24.9	2.54
1999-00	93.11	29.52	3.89
2000-01	92.5	34.35	3.27
2001-02	89.85	42.24	3.17
2002-03	84.39	33.38	4.95
2003-04	71.52	32.6	5.3
2004-05	83.72	35.38	6.2
2005-06	100.49	35.74	7.2
2006-07	103.01	27.47	7.9
2007-08	100.46	41.14	8.4
2008-09	103.2	45.1	10.36
2009-10	117.25	44.11	18.2
2010-11	119	53.2	16.8
2011-12	115	52.8	23.7
2012-13	89.2	51.9	24.1
2013-14	84.3	47.11	25.2
2014-15	85.3	51.12	26.2
2015-16	88.3	49.21	26.39

Source: Computed from various Reports of MHRD

Table 1.3 Expenditure on Education

Year	Total expenditure on education	Percentage share of total expenditure on education	Expenditure as Percentage share of GSDP
1995-96	382.311	10.7	5.48
1996-97	446.331	11.1	6.09
1997-98	513.765	10.5	6.63
1998-99	608.296	10.4	7.46
1999-00	719.3296	10.12	4.59
2000-01	869.019	11.1	5.36
2001-02	933.8	11.6	5.64
2002-03	952.442	10.9	5.48
2003-04	978.687	11.1	5.35
2004-05	1079.319	9.7	3.95
2005-06	1252.431	9.3	4.34
2006-07	1387.7	10	4.54
2007-08	1568.232	9.2	4.81
2008-09	1875	10	5.40
2009-10	2528.714	11.3	6.98
2010-11	3031.744	12.7	7.92
2011-12	3131.478	12.6	7.60
2012-13	3141.523	12.1	6.85
2013-14	3423.16	13	7.59
2014-15	3677.43	14.79	7.87
2015-16	3754.3	14.46	8.6

Source: Handbook of statistics on Indian states (2014-15), RBI

1.16 Health as component of Human capital

Health indicators of any State are important determinants of the socioeconomic development as well as of the human capital. Better health leads to the personal economic gain by working. The goal of every economy remains to keep the human resource which is main driven of the economy in healthy conditions. Health is the fundamental human right and necessary for individual well-being at micro level, and indispensable prerequisite for economic growth and development in a country/state at the macro level.

With a view to meet the growing healthcare needs of the people especially those living in rural areas, the State Government is according priority to health sector. In its endeavours to provide preventive, primitive and curative healthcare facilities at the door steps of the people which are accessible, affordable and acceptable to all the citizens, lot of efforts have been made by the Government to strengthen and upgrade the healthcare institutions.

One of the important features of the present decade is that 2001-2011 is the first decade since 1961 which has actually added lesser population in the State compared to the previous decades. The average life span has increased over the years in the country as well as in the State which reveals decrease in death rate and improvement in the quality health services. Increasing life expectancy is also leading to increasing number of elderly persons in the population, for which specific health facilities are required to be provided.

As per the estimation made by the Registrar General on the basis of Sample Registration System (SRS- 2011), the crude birth rate of the state

is 17.8. The crude death rate of the State is quite good as compared to national average and the neighbouring states. It stood at 5.5 as against the national average of 7.1 in 2011. Infant Mortality rate is better in the state as compared to the all India average. As per SRS 2011, the State's IMR was registered at 41 as against the national level figure of 44 (Economic survey, 2014).

The Infant Mortality Rate (IMR) of the State is showing a consistent downward trend and is indicative of fruition of host of child health programmes and activities undertaken by the Department especially under national rural health mission since 2006.

The crude birth rate of the state is 17.8 and the same is well below the national average of 21.8. While studying the pattern of crude death rate from 2006-2011, it reveals that the performance of the state is in line with the national level scenario which has dipped by 0.4 points during the period. The TRF level is also better in the State when compared with the national average which stood at 2.5. The NMR of the State remained stagnant at 39 during 2006 to 2008, and decreased to 37 in 2009 and further declined to 35 in 2010 (Economic survey, 2014).

The child sex ratio [0 to 6 years] has shown a sharp decline from 941 in 2001 to 859 as per census 2011. The overall sex ratio has also declined from 892 in 2001 to 883 as per census 2011. This shows a continuing preference for male children over females in the last decade and is a matter of serious concern.

The basic input to maintain the health status of the economy in a good condition is represented by the investment and expenditure on the

sector. As far as the expenditure on the health sector is concerned it was 146.493 crore in 1995-96 and increased to 1505.854 in 2015-16.

The expenditure on health as a percentage of total was in between 3 to 6 per cent. Expenditure on health as a percentage share of total was 4.1 per cent in 1995-96 and reached to 4.9 per cent in 2000-01, which further stood at 5.8 per cent in 2015-16. The expenditure on health as the percentage share of GSDP was 2.09 per cent in 1995-96 and stood at 3.44 per cent in 2015-16. The absolute expenditure on the health has increased but as far as the share is concerned it increased at negligible rate as shown in table 1.4.

Different policies and strategies are taken by the government to improve the health condition of the people. National rural health mission has brought a renewed emphasis on strengthening of our public health systems and achieving the goal of "Health for All". Substantial investment has been made in strengthening infrastructure, building capacity of service providers and ensuring uninterrupted flow of drugs and supplies.

Table 1.4 Expenditure on Health

Year	Total expenditure on health	Expenditure on health as Percentage share of total expenditure	Expenditure on health as Percentage share of GSDP
1995-96	146.493	4.1	2.09
1996-97	136.714	3.4	1.86
1997-98	171.255	3.5	2.21
1998-99	251.507	4.3	3.08

1999-00	326.968	4.6	2.08
2000-01	383.621	4.9	2.36
2001-02	442.75	5.5	2.67
2002-03	454.376	5.2	2.61
2003-04	484.935	5.5	2.65
2004-05	545.223	4.9	1.99
2005-06	606.015	4.5	2.09
2006-07	749.358	5.4	2.44
2007-08	903.438	5.3	2.77
2008-09	900.00	4.8	2.59
2009-10	1163.656	5.2	3.21
2010-11	1217.472	5.1	3.18
2011-12	1292.356	5.2	3.13
2012-13	1324.113	5.1	2.88
2013-14	1421.928	5.4	3.15
2014-15	1342.062	5.4	2.87
2015-16	1505.854	5.8	3.44

Source: Handbook of statistics on Indian states (2014-15), RBI

The workloads of peripheral health institutions are showing steady increase and this helps to reduce patient load on tertiary care hospitals.

The State has succeeded to a great extent to improve the healthcare scenario despite host of constraints like low density of population, difficult terrain, problem of accessibility, poor road connectivity and limited presence of private sector/NGOs.

While comparing the indicators with the national average, it can be said that the State has performed well on most of the parameters. However, still a lot more needs to be done to provide quality, accessible, affordable and acceptable healthcare services to the people in the state which is not only comparable with the neighbouring states of Himachal Pradesh, Haryana and Punjab, but with well-performing states in the country as well.

Section V

Research Methodology

In this study an effort is made to estimate and analyses the growth of human capital and its impact on the economic growth of Jammu and Kashmir economy. As the causation runs from both ways like human capital and growth it may turn economic growth and human capital. But the present study provides analysis of human capital and economic growth relation. Different scholars used to empirically investigate the relationship between the human capital and economic growth with respect to different sectors and different economies of the world. In this study the relationship is meant for the economy of Jammu and Kashmir.

1.17 Rationale of the Study

In the present globalized world the goal of every nation stands to increase the human capital. Human beings are the most important assets of every economy, their increase in abilities and their utilization remains the important priority of every state. India as the country is also in this struggle. Some states of India succeeded where others failed completely. To analyse the impact of human capital and channels to make it higher and fully utilized remains the important priority of work for scholars. In this study an effort is made for the same purpose in context of Jammu and Kashmir economy. The reasons to investigate the problem in context of Jammu and Kashmir are many. Given the changing role of the government policies for the improvement of the human capital and different strategies laid down, unemployed educated youth, lack of skills and training programs and less efforts of scholars to investigate the same problem in the context of Jammu and Kashmir economy develops interest for the study in Jammu and Kashmir.

1.18 Objectives of the Study

The present study has been carried out with the following objectives:

1. Estimate and analyse the growth rate of human capital formation in Jammu and Kashmir.

2. Examine the structure of human capital development in Jammu and Kashmir.

3. Evaluate and appraise the positive impact of human capital development on economic growth of Jammu and Kashmir.

4. Identify the relationship between human capital investment and growth of the Jammu and Kashmir economy.

5. Determine the direction of causality between government expenditure in human capital and economic growth in Jammu and Kashmir.

6. Suggest adequate channels for investment in human capital and its utilisation.

1.19 Hypotheses

1. No significant impact of human capital on economic growth of Jammu and Kashmir.

2. Human capital expenditure and Economic Growth of Jammu and Kashmir are independent of each other (Ho: $\beta = 0$)

3. Poor funding by the government is not responsible for the low development of human capital and underutilisation of it.

1.20 Sources and methods of data collection

The study is primarily based on the secondary data but to make in depth investigation of the problem, a primary survey was conducted for understanding the views of stakeholders. Secondary data was collected from various sources which included, official website and reports of RBI, MHRD various annual reports, budgetary reports, various publications and reports of Directorate of Economics and statistics, Jammu and Kashmir, department of economic planning, Jammu and Kashmir, department of education Jammu and Kashmir, and department of health in Jammu and Kashmir and Planning Commission of India.   Primary data was collected through the structured questionnaire. The questions were mainly close ended. The questionnaire was structured into two sections. Section one

pertained to the personal information of the respondents and includes questions such as sex, age and educational qualifications. Section two consisted of questions which were used in testing the hypothesis of the study and were related to the nature of respondent's compliance to investment in human capital. A total of 150 respondents were interviewed selected through random sampling from University of Kashmir, university of Jammu and SKUAST (She-re- Kashmir University of agricultural Sciences and technology Kashmir)

1.21 Research Techniques and Methods

Variables that are used in the study for the human capital included enrolment ratios, expenditure on education, expenditure on health, life expectancy, literacy rates, availability of teachers, availability of institutions, availability of hospitals, availability of man power in health sector, death rates, birth rates and medical attention to people etc.. Both Econometric and non-econometric tools are used to make the relevance of the study meaningful.

For the estimation of growth rates percentage methods and CAGR methods are used. Regression analysis is also used in the study by building a simple model by taking gross state domestic product as dependent and proxy variables like expenditure on education, health and enrolment ratios of primary, secondary and territory for human capital as independent. The OLS method was used for estimation. Granger Causality test is used to determine the direction of causality between government expenditure and national income.

Before conducting Granger causality tests, variable must be found stationary individually or, if both variables are non-stationary, they must be co-integrated. This means that the test for stationary and the co-integration test must precede the Granger causality test. We use the Augmented Dickey Fuller (ADF) test (Dickey and Fuller 1979, 1981).

For primary data the response from the respondents are analysed by using percentages, graphs and charts. Chi-square test is used for testing the hypothesis.

1.22 Chapter Scheme

The thesis is divided into seven chapters. Chapter one deals with introduction. Chapter two presents literature review of the study. Chapter three presents the profile of Jammu and Kashmir economy. Chapter four deal with estimation and analysis of the growth of human capital in Jammu and Kashmir. Chapter five provides human capital as the determinant of economic growth: An Empirical Analysis. Chapter six deal with human capital formation a Stake holder perception. Chapter seven deal with summary, conclusions and policy recommendations.

1.23 Limitations

The study has a limited scope for defining the proxy variables for human capital. The inclusion and exclusion of proxy variables makes the study limited to certain specific variables. The study has limitations, of course, related, in a great part, to the measurement of the education human capital and health human capital and the channels through which it

influences the economic output. The limitations of the relevant statistical data for analyzing the effect of the health and education status on the economic growth are a great barrier to draw further investigations on this relationship. Limited data means limited reports presented for certain variables and limited information as well. In this view, further research is needed to identify relevant statistical variables or construct data sets and explore their capacity to reflect the health status of the active population, etc.

Section IV

Conclusion

The chapter provides a detailed account of the introduction to human capital and sources and factors of growth from classical to new growth theories. In the chapter the human capital and its status in the Jammu and Kashmir is also provided. The methods and techniques used to conduct the study were also discussed in great detail. The chapter scheme and limitations of the study are also provided with certain limitations of the study.

References

Alschuler, L.R. (1988), Multinationals and Mal-Development, New York: St. Martin's Press. Quoted by M. Shamsul Haque 2004, The Myths of Economic Growth (GNP): Implications for Human Development, Handbook of Development Policy Studies, New York: http://profile.nus.edu.sg/fass/olhaque/gnp-myth.pdf

Arora, S., (2001), Health Human Productivity and Long-Term Economic Growth, Journal of Economic History, Vol. 61(3), pp. 699-749. https://www.cambridge.org/core/journals/journal-of-economic-history/article/health-human-product

Babbie, Earl. (2003), The Practice of Social Research. 10th ed. Belmont, CA: Wadsworth publishing.

Bannock, G. (1975), Technology and the Quality of Life, in K.J.W. Alexander (ed.), The Political Economy of Change. Oxford: Basil Blackwell, pp.45-56. Quoted by M. Shamsul Haque 2004, The Myths of Economic Growth (GNP): Implications for Human Development, Handbook of Development Policy Studies, http://profile.us.edu.sg/fass/polhaque/gnp-myth.pdf

Barnett, T. (1988), Sociology and Development. London: Hutchinson https://books.google.co.in/books?id=MtGIAgAAQBAJ&dq=.+(1988)

Barro, R. J. and Sala-i-Martin, X., (1995), Economic growth second edition MIT press, New York, McGraw-Hill.

Barro, R. J., (1997), Determinants of Economic Growth: A Cross-Country Empirical Study, Cambridge, Mass., MIT Press.

Bas van Leeuwe (2007) Human Capital and Economic Growth in India, Indonesia, and Japan: A quantitative analysis, 1890-2000, Box Press shop. http://www.iisg.nl/indonesianeconomy/humancapital/

Becker, G. S. (1964), Human Capital: A Theoretical And Empirical Analysis, With Special Reference To Education, New York, National Bureau of Economic Research. http://www.sciencedirect.com/science/article/pii/304-3932

Behrman, Jere R. and Paul J. Taubman. (1982), Human Capital, in Greenwald, Douglas (ed.), Encyclopedia of Economics, New York, McGraw-Hill Book Company, pp. 474-476. https://ideas.repec.org/f/pbe285.

Benhabib, J. and Spiegel, M. M., (1994), The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Country Data, Journal of Monetary Economics, Vol. 34(2), October, pp. 143-74.

Bergheim, S. (2005), Current Issues Global Growth Centres, Deutsche Bank Research, Frankfurt am Main, Germany. https://www.dbresearc.com

Bils, M. and Klenow, P. J., (2000), Does Schooling Cause Growth? The American Economic Review, Vol. 90(5), pp. 1160-1183. klenow.com/ BKHK.pdf

Bjonnes, R. (2002), Strategies to Eradicate Poverty: Integral Approach to Development, in UNESCO (ed.), The Encyclopedia of Life support Systems. Paris: UNESCO. http://www.sustainablevillages.org/pagesradicatingpoverty.html

Bloom, D. E., and Williamson, J., (1998), Demographic Transitions and Economic Miracles in Emerging Asia, World Bank Economic Review, Vol 12, pp. 419-455.

Bloom, D. E., Canning, D. and Sevilla, J. E., (2001), The Effect of Health on Economic Growth: Theory and Evidence, Cambridge, National Bureau of Economic Research, Working Paper 8587, pp. 26 www.nber.org/papers/w8587

Brown, L.R. (1990), The Illusion of Progress, in The World watch Institute (eds.), State of the World, New York: W.W. Norton & Company.

Caselli, F., Esquivel, G., Lefort, F., (1996), Reopening the convergence debate: a new look at cross-country growth empirics, Journal of Economic Growth, Vol.1 (3), pp. 363-389.

Chopra, P. (1983), Development and Society: An Overview of the Indian Experience, in A. Mattis (ed.), A Society for International Development: Prospectus,1984. https://books.google.co.in/books?isbn=082230562

Cobb, C., G.S. Goodman, M. Wackernagel (1999), Why Bigger Isn't Better: The Genuine Progress Indicator --1999 Update. Oakland, Calif.: Redefining Progress, https://www.google.co.in/search?q=).+Why+Bigger+Isn%E2%80%99t+Better%3A+The+Genu

Cobb, C., T. Halstead, J. Rowe (1995), If the GDP is Up, Why is America Down?, The Atlantic, October. http://www.theatlantic.com/politics/ecbig/gdp.htm

Daly, H.E. (1989), Steady-State and Growth Concepts for the Next Century, in F. Archibugi and P. Nijkamp (eds.), Economy and Ecology: Towards Sustainable Development. Dordrecht, Netherlands: Kluwer Academic Publishers, pp.73-87.

Dana Lynn Driscoll. (2011), Introduction to Primary Research: Observations, Surveys, and Interviews, http://writingspaces.org/essays

David, Morawetz. (1977), Twenty five years of economic development (1950-75), World Bank, The John Hopkins University press, pp. 23-24.

Denison, Edward F. (1962), Sources of Growth in the United States and the Alternatives Before Us, Supplement Paper 13, New York: Committee for Economic Development 1962. https://books.google.co.in/books?isbn

Dreze, Jean and Amratya sen. (1996), Indian Economic Development and Social Opportunity, Oxford University press, New Delhi

E. Wayne Nafziger, (2005), From Seers to Sen: The Meaning of Economic Development, paper presented to the UN University /World Institute for Developmen jubilee http:/ /www . rrojasd atabank. info/wideronf/Nzige

Eltis, W. (1984), The Classical Theory of Economic Growth, Palgrave, Macmillan UK.

Estes, R.J. (1988), Toward a Quality-of-Life Index: Empirical Approaches to Assessing Human Welfare Internationally, in J. Norwine and A. Gonzalez (eds.), The Third World: States of Mind and Being. Boston: Unwin Hyman, pp.23-36. https://books.google.co.in/books?isb

Fogel, R.W., (1997), New Findings on Secular Trends in Nutrition and Mortality: Some Implications for Population Theory, The Handbook of Population and Family Economics, 1,A, edited by Rosenzweig, M., and Stark, O., Amsterdam, North Holland. https://ideas.repec.org/h/eee/popchp/1-09

Giuseppe Folloni (2010), Human capital measurement: a survey, Journal of Economic Surveys Vol. 24, No. 2, pp. 248–279

Gallup, J. and Sachs, J., (2000), The Economic Burden of Malaria, Working Paper, 52, Centre for International Development, Harvard University, Cambridge, Mass.

Gonzalez, A. (1988), Indexes of Socioeconomic Development, in J. Norwine and A. Gonzalez (eds.), The Third World: States of Mind and Being. Boston: Unwin Hyman, pp.37-49 26 https://books.google.co.in/books?isbn=00491

Gundlach Erich. (1996), Human capital and economic development: A macroeconomic Assessment. WP No. 778 http://hdl.handle.net/10419/920

Gyimah Brempong, K. and Wilson, M., (2004), Health human capital and economic growth in Sub-Saharan African and OECD countries, The Quarterly Review of Economics and Finance, 44, pp. 296-320. http://www.sciencedirect.com/science/article/pii/S1062-9769(03)00055-3

Haldar, S.K., (2008), Effect of Health-Human Capital Expenditure on Economic Growth in India: A State-Level Analysis, Asia-Pacific Social Science Review, Vol. (2), pp.79- 97.

Haque, M.S. (2002), Globalization, New Political Economy, and Governance: A Third World Viewpoint, Administrative Theory & Praxis , Vol.24 (1): 103-124.

M. Shamsul Haque. (2004), The Myths of Economic Growth (GNP): Implications for Human Development, Handbook of Development Policy Studies, New York: http://profile.nus.edu.sg/fass/olhaque/gnp-myth.pdf

Hojo, M., (2003), An indirect effect of education on growth, Economics Letters, 80, pp. 31-34. http://www.sciencedirect.com/science/article/pii/S0165

Hoogvelt, A.M.M. (1982), The Third World in Global Development, London: Macmillan Education Ltd.

Howitt, P. (2005), Health, Human Capital and Economic Growth: A Schumpeterian perspective, Seminar paper for Pan American Health Organization. www.brown.edu/Departments/Economics/Faculty/PeterHowitt

J&K Economic Survey, Directorate of Economics & Statistics, J&K, Issues of 2011-12, 2012-13, 2013-14 and 2014- M15 Vol 1.

Jacobs, J. (1984), Cities and Wealth of Nations, New York, Random House. www.goodreads.com

Jones, L. E., and R. E. Manuelli (1990), A Convex Model of Equilibrium Growth: Theory and Implications," Journal of Political Economy, Vol.(98), pp 1008–1038.

Kiker, B.F. (1966), The Historical Roots of the Concept of Human Capital, Journal of Political Economy, vol. 74(5), pp. 481-499. http://www.jstor.org/stable/1829595

King, R. G. and Rebelo, S. (1990), Public Policy and Economic Growth: Developing Neoclassical Implications, Journal of Political Economy, Vol. 98, pp. 126-50. http://www.nber.org/papers/w3338

Knowles, S., Owen, P.D., (1995), 'Health Capital and Cross-country variation in income per capita in Mankiw-Romer-Weil Model', Economics Letters, 48, pp. 99-106. http://www.sciencedirect.com/science/article/pii/01651

Kurz, H.D., Salvadori, N. (2003), Theories of economic growth: old and new, in N. Salvadori (ed), The Theory of Economic Growth: A Classical' Perspective, Cheltenham: Edward Elgar.

Lucas, R.E., (1988), On the Mechanics of Economic Development, Journal of Monetary Economics, Vol. 22, pp.3-42.

Lucas, Robert (1990), Why does not Capital Flow from Rich to Poor Countries, American Economic Review Vol. 80, pp. 92 96.

Mander, J. and Barker, D. (2001), The Root of The Problem, Tom Pain.Commonsense, December 19. http://www.tompaine.com/feature.cfm?ID=4779.

Mankiw, N. Gregory, David Romer, and David N. Weil,(1992), A Contribution to the Empirics of Economic Growth, Quarterly Journal of Economics, Vol. 107 (2) , http://eml.berkeley.edu/~dromer/papers/MRW_QJE1992.pdf

Marshall, A. (1890), Principles of Economics, London: Macmillan (Reprinted 1920).

Marx, K. (1956). Capital, vol. II, Moscow: Progress Publishers. English translation of Das Kapital, vol. II, edited by F. Engels (1885), Hamburg: Meissner.

Mayer-Foulkes, D. (2001), The Long-Term Impact of Health on Economic Growth in Mexico, 1950-1995, Journal of International Development, 13(1), pp.123-126.

McMahon, W. W., (1998), Education and Growth in East Asia, Economics of Education Review,17(2),pp.159-172. http://www.sciencedirect.com/science/article

Mill, J.S. (1848), Principles of Political Economy, with Some of Their Applications to Social Philosophy, London: Longmans, Green (Reprinted 1926).

Nelson, R. R., and E. S. Phelps. (1966), Investment in Humans, Technological Diffusion, and Economic Growth, American Economic Review 56, Proceedings, 69–75.

OECD (1996), Measuring What People Know: Human Capital Accounting for the Knowledge Economy, Paris, https://archive.org/details/bub_gb_Mdw8yfclbEwC

OECD (2001), The Well-being of Nations: The Role of Human and Social Capital, OECD, Paris. Becker, http://www.oecd.org/site/worldforum/33703702.pdf

Pritchett, L., (1997), Where Has All the Education Gone?, The World Bank, Washington DC, PolicyResearchWorkingPaper,1581. http://documents.worldbank.org

Rebelo, S. (1991), Long Run Policy Analysis and Long Run Growth, Journal of Political Economy, 99, pp. 500-21. http://www.dklevine.com/archive/refs42114.pdf

Romer, Pual M. (1986), Increasing Returns and Long-run Growth, Journal of Political of Economy 94, 1002–37. http://links.jstor.org/sici?sici

Rosen, G., (1993), A History of Public Health, Baltimore, John Hopkins University Press. https://jhupbooks.press.jhu.edu/content/history-public-health

Roy, Debraj. (1998), Development Economics, Oxford University Press, YMCA library building, New Delhi, pp. 47-48.

Sachs, J. and Rosen, S. (1976), A Theory of Life Learning, Journal of Political Economy vol, 84, pp. 45–67.

Sala-i-Martin, X., (1997), I Just Ran Four Million Regressions', National Bureau of Economic Research (Cambridge MA), Working Paper, 6252, November. https://core.ac.uk/download/pdf/6864635.pdf

Schultz, T. Paul (1994), Human Capital, Family Planning, and Their Effects on Population Growth, The American Economic Review, vol. 84(2), pp. 255-260. 27 http://links.jstor.org/sici?sici=000

Schultz, Theodore W. (1961), Investment in Human Capital, The American Economic Review, vol. 51(1), pp. 1-17.

Schultz, Theodore W. (1962), Reflexions on Investment in Man', Journal of Political Economy, vol. 70(5, Part 2, Supplement), pp. 1-8. https://www.jstor.org/stable/pdf/1829102.pdf

Seers, D. (1979), The Congruence of Marxism and Other Neoclassical Doctrines, in Rothko Chapel Colloquium (ed.), Toward a New Strategy for Development. New York: Pergamon Press, pp.1-17

Self, S. and Grabowski, R., (2004), Does education at all levels cause growth? India, A case study, Economics of Education Review, 23, pp. 47-55.

Shiva, V. (1989), Development, Ecology and Women, in J. Plant (ed.), Healing the Wounds. Philadelphia: New Society Publishers.

Smith, A. (1776), An Enquiry Into The Nature And Causes Of The Wealth Of Nations, Edinburgh. Now in R.H. Campbell, A.S. Skinner and W.B. Todd (eds) (1976) The Glasgow Edition of the Works and Correspondence of Adam Smith (Vol. II). Oxford: Oxford University Press.

Solow, Robert M. (1956), A Contribution to the Theory of Economic Growth, Quarterly Journal of Economics, Vol. 70 (1), 65-94.

Stark, O., (1995), Altruism and Beyond: An Economic Analysis of Transfers and Exchanges within Families and Groups, Cambridge University Press. https://www.cambridge.org/core/books/altruism-and-beyond

Taniguchi, K. and Wang, X. (2003), Nutrition Intake and Economic Growth: Studies on the Cost of Hunger, Food and Agriculture Organisation of the United States, Rome, Italy. https://books.google.co.in/books?id

Temple, J., (1999), A Positive Effect of Human Capital on Growth, Economic Letters, 65, pp. 131-134 http://www.sciencedirect.com/science/article6517659900120

Thomas, D. and Strauss J., (1997), Health and Wages: Evidence on Men and Women in Urban Brazil, Journal of Econometrics, 77. https://www.rand.org/content/dam/rand/.pdf

Todaro, Michael. (1985), Economic development in the third world, Orient Longman, Hyderabad, P.85

Torrens, R. (1820), An Essay on the Influence of the External Corn Trade upon the Production and Distribution of National Wealth, 2nd edn, London: Hatchard. https://catalog.hathitrust.org/Record/006827954

Trainer,T. (1989), Developed to Death: Rethinking Third World Development . London: Green Print

Trevor W. (1956), Economic Growth and Capital Accumulation, Economic Record, Vol. 32 (2), pp, 334-361.

Uzawa, H. (1965), Optimum Technical Change in an Aggregate Model of Economic Growth, International Economic Review, 6, pp. 18-31. http://links.jstor.org/sici?sici=0020-6598%28196501%296%3A1%3C18%3AOTCIAA%3E2.0.CO%3B2-Yn

Warner, A.,and Sach (1997), Fundamental Sources of Long-Run Growth, American Economic Review (Papers and Proceedings) 87,184-188. http://www.economics-ejournal.org/economics/journalarticles/2009-1/references/SachsWarner1997

Wicksell, K. (1934), Lectures on Political Economy (first Swedish edn 1901), London: Routledge. https://mises.org/library/lectures-political-economy-volume-i-general

World, Bank. (1992), World development report, Oxford University Press, Oxford.

Yeh, J.R., S.L. Lo, L.L. Lee, J.T. Liu, J.C.S. Wang, S.L. Huang (2001), Sustainable Development Indicators for Taiwan, paper presented at Workshop on Sustainable Development Indicators, Taiwan, 17-19 November http://ngo.cier.edu.tw/policy/3.6.pdf