CHAPTER I

INTRODUCTION

1.1 INTRODUCTION

Issues pertaining to SOCIAL SECTORS have been the focus of greater attention by researchers in the recent times. A number of academic as well as policy measures have contributed to this phenomenon. At the academic level, there has been a rediscovery of importance of human capital in explaining the growth performance of countries (Prabhu, 2001). The connotation of the term social sector varies depending on the user and the occasion on which it is used. Conventionally, the term is used to denote education, health and nutrition sectors. Apart from the lack of a clear delimitation, social sectors are rarely considered an analytical category, and most of the analysis is generally confined to identifying the determinants and problems relating to individual components such as education, health and nutrition. Thus, a critical appraisal of the problems relating to social sector as an integrated whole is often missing. The theoretical underpinning of the analysis on social sectors has not always been made clear. Consequently, the prescriptions to reform social sectors are often piece-meal in nature, undermining the possibility for a coherent alternative social sector policy to emerge (Prabhu, 2002).

Prabhu (1998) defined the social sectors with two approaches, viz., the human capital approach and human development approach. In the present chapter, these approaches have been analysed thoroughly. The term human resource development and its alternative human development have come into popular usage in development literature in the last three decades. Prior to that emphasis in development literature had mostly been on the term 'human capital'.

1.2 HUMAN RESOURCE DEVELOPMENT (HUMAN CAPITAL) APPROACH

Following this approach, social sectors may be defined as all those sectors, which contribute to an enhancement of human capital (Prabhu, 2005). This approach
emphasises investment in education, health and nutrition as a means of enhancing the quality of human capital.

Capital broadly is anything that yields a flow of services over time. It is a produced means of production. In this sense, knowledge can be treated as capital (Alex, 1983). Economic theories of capital and investment tended to concentrate on investment in physical capital, such as buildings, factories and machines, which generate income in the form of production of goods and services. However, many economists have pointed out that education and training create assets in the form of knowledge and skills which increase the productive capacity of manpower in just the same way as investment in new machinery raises the productive capacity of the stock of physical capital (Woodhall, 1987).

The concept of human capital refers to the fact that human beings invest in themselves by means of education, training, or other activities, which raises their future income by increasing their lifetime earnings. In other words, human capital formation rests on the proposition that people enhance their capabilities as producers and consumers by investing in themselves through schooling, health, on-the-training, searching for information about job opportunities and by investing in migration (Schultz, 1962). Schultz has made a distinction between human resources and other resource, while the latter is passive, the human resources are active agents in the field of economic activities. Schultz has also suggested that while undertaking the economic analysis of human resources, a distinction be made between their preferences including motives, feelings and aspirations and their attributes including health, energy, efficiencies, skills and knowledge, which contribute to the possibilities of realising their preferences. Schultz, thus, defines human resources as “...those attributes of a people – physical, biological, psychological and cultural that account for both social values, determining preferences consumer services that a people renders, whether they come to them as earnings or directly as a personal satisfaction” (Schultz, 1972).

According to Rosen (1978) “human capital is also largely defined as the stock of skills and productive knowledge embodied in people”. World Development Report
(1980) argues, "Human resources are the source of ideas, decisions and actions on investment, innovation and other opportunities". According to Nandwani (1989) "human capital refers to the man's productive skills, talents and knowledge"

1.2.1 ORIGIN OF ECONOMICS OF HUMAN CAPITAL

Just as Adam Smith is considered to be the father of modern economics, Cournot regarded as the founder of mathematical economics, Moore is thought of as the originator and inventor of econometrics, Schultz is thought to be the initiator and innovator of human capital revolution in economic analysis and thought. It is however, almost improbable to identify one single analyst either as the first or original profounder of any idea, concept or theory. Every concept and theory has its antecedents and forerunners in one form or another. Each new concept or theory could be found to have been formulated at least in an embryonic form and discussed in one or the other context by some analyst(s) preceding the emergence of the concept or/and theory as a distinct conceptual or theoretical category or branch of analysis. It is even more difficult to discover one single source in the form of book, research paper or monograph from which any new subject or even a branch of analysis could be envisaged to have emanated. Consequently, it is not practically possible to precisely and accurately date the birth of any independent subject of branch of analysis and apportion credit to one single book or article and its authors as the founding father or originator and inventor of the same. A subject or its fully developed branch emerges gradually as a result of sustained and persistent researches of several scholars. Contributions of numerous less known and less prominent analysts to the chiselling and refinements of concepts and the formulation and finalisation of theories furnish the mortars and bricks lying at the base as foundation of new disciplines. It will naturally be erroneous to trace the point of take-off or origin of economics of human capital, economics of education and economics of health to any particular treatise or article or author (Prakash, 1989)

Economics of human capital as an area of research is at least 45 years old. Though the idea of human capital finds its origins to Adam Smith and Johann Von Thunen of the 18th and 19th century respectively and was more clearly pronounced in the early part of
the 20th century by John Walsh and Irving Fisher, who even used the concept of 'specialised' human capital to refer to skilled and higher educated individuals. 'Economics of Human Capital' was born as a formal area of study only four and half decades ago with the presidential address by Theodore W. Schultz (1961) to the American Economic Association in 1960 on "Investment in Human Capital". The human capital theory was a great contribution to economics and it created 'the human investment revolution in economic thought' as aptly described by Mary Jean Bowman (1966) (Tilak, 2006).

Economics of human resource comprises of educational economics and health economics. These are comparatively new and young disciplines, having emerged only recently as distinct and independent areas of economic analysis. Between these, economics of education has been relatively more dominant. However, human capital development and social welfare themselves are important rather than their origin.

1.2.2 IMPORTANCE OF HUMAN CAPITAL FOR DEVELOPMENT: SOME THEORIES AND EVIDENCES

The importance of human capital for economic growth was recognised since early times through the formal induction of the concept into economic analysis is much recent phenomenon. Among the early economists, William Petty undertook a monetary evaluation of human beings by capitalising the wage bill to perpetuity at the market rate of interest. Though a crude measure, this marked the beginning of efforts to place a monetary value on the lives of labourers. A more scientific procedure was used by William Farr (1853) to calculate the present value of individual's net future earnings. Dublin and Lotka (1930) devised a method for capitalising an individual's earnings in order to estimate a mean's economic value to his family so as to provide some basis for calculating amount of life insurance a person has to carry. J.B. Say (1932) asserted that some skills and abilities that are acquired at a cost, should be classified as capital. J.S. Mill (1938) paid attention to the acquired skills of human beings and classified these as capital. Von Thunen (also recognised the value of human beings as capital and urged for an inclusion of expenditures that raised labour productivity in human capital framework
so that it may eliminate social injustice. Later on, Irving Fisher (1943) conceptualised capital as including specialised human capital and urged that a skilled individual should be placed in the category of capital. Adam Smith (1876) recognised the importance of education in economic development, included the acquired and useful abilities of all members of society in the definition of fixed capital. He argued that division of labour led to an improvement in dexterity and skill of workers thereby contributing to production in the economy.

Among neo-classical economists, Marshall (1962) seems to have recognised that capital consists a great part of knowledge and organisation, and of this some part is private property and other part is not. Knowledge is our most powerful engine of production; it enables us to subdue nature and force her to satisfy our wants (Marshall 1960). Investment in improving the quality of human resource (Schultz (1962) in particular; Kuznet, Leontif and many others) was thought useful in augmenting productivity, thus, total output. Myrdal (1964) may be credited for drawing attention to the fact that investment in human capital and or social sector provides some measures of social security to weaker sections of the population, and is essential to break the stagnation cycles.

The contribution of Schultz (1961) makes the beginning of formal induction of human capital concept into the mainstream of economic analysis. Becker (1962) added another dimension of on-job-training to the formation of human capital and influenced the analysis of firm-specific investments in training, labour relations and contracts. Blauge (1976) highlighted the inadequacies of human capital theory even in its own terms. Lucas (1988) emphasised investment in human capital more directly and linked it to long term rates of economic growth. Their definition of human capital represented the set of skills that increased the individual's value in the market place. All of them have highlighted the viewpoint that education, health and nutrition cannot be considered merely as consumption goods; investment in these sectors is emphasised as a 'means' to higher productivity of labour force and justified on the basis of either financial rate of returns (as in case of education) or elasticity estimates emerging from production function (as in case of health) (Prabhu, 2002).
The importance of investing in human capital has become much clearer in recent years because of the mounting evidence on the extent to which such investment and its links with other factors in development act as an engine of change. In fact, that the case for increasing emphasis on human capital now need retelling.

a) **IMPORTANCE OF HUMAN CAPITAL FOR ECONOMIC GROWTH**

A number of studies, notably including Barro (1991) and Mankiw, Romer and Weil (1992) conclude that growth in human capital is a centrally important contributor to economic growth. Mankiw, Romer and Weil (1992) used the fraction of the working-age population attending secondary school as a measure of human capital investment at any point in time. Whereas a model using only physical investment variables performed poorly in explaining economic growth, the same models performed well when human capital was included. Human capital has been emphasised particularly in explanations of the strong long-term economic growth experienced in East Asian Nations (Jung 1992; Woo 1991).

In a cross-country study, Hicks (1980) found that the rapidly growing developing countries were those that had above the average performance in both literacy and life expectancy. Growth, of course, can add to the resources available for making improvements in health and education. In order to circumvent this cause and effect problem, he examined the growth of a sample of 75 developing countries for the period 1960 to 1977 and their respective levels of achievement in 1960 for life expectancy (an assumed health measure) and literacy. He finds that literacy levels and growth are related. The top twelve countries had an average per capita growth rate of 5.7 percent during the period, compared to 2.4 percent for all countries. These fast growing countries started the period with above-average literacy levels: 65 per cent compared to an average of 38 per cent. However, the fast-growing countries also have above average income levels, and one would expect higher than average levels of literacy. But even if one adjusts for differences in income, those countries had literacy rates 12 percentage points higher that would have been expected at their income levels (Hicks 1987).
b) **Education and Economic Growth**

Benavot (1985) studied this phenomenon for the years 1930-1980, and found that education had a significant positive impact on the economic growth of 110 developed and developing countries. For the period 1945-80 Lau, Jamison and Louat (1991) found economic growth powerfully affected by primary education in twenty-two East Asian and Latin American countries and by secondary education in fifty-four East Asian, Latin American, African, and Middle Eastern countries.

The studies, which focus on the contribution of education in economic growth (e.g. Schultz, 1961; Denison, 1962), both for developed and developing countries, found that differences in human resources explain a significant part of the variation in gross national product per capita. Studies in USA show that less than two third of the growth of the GNP could be explained by the traditional factors like capital and labour. Most of these studies have adopted the growth accounting approach, which tries to account for the residual growth not experienced by conventional factors like labour and physical capital.

Marris (1982) using data of 60 developing countries for the period 1965 to 1979, estimated a model that confirmed previous findings (Wheeler's work) on the importance of education for growth in developing countries. Furthermore, he found relatively weak role for investment, as normally measured in terms of the construction of fixed tangible assets. The estimated cost-benefit ratios for the education (measured by primary enrolment rate) ranged in his model, between 3.4 and 7.4, depending on one's assumptions on costs. By contrast, the cost benefit ratios for investments in non-human capital ranged between 0.4 and 1.0.

Peaslee (1965, 1969) examined the relationship between growth in primary school enrolment and gross national product (GNP) per capita over a 110 year period (1850 – 1960) for thirty-four of the richest countries. He found that none of the countries had achieved significant economic growth before attaining universal primary education.
c) **Health and Economic Growth**

Health is an important component of human capital. It can enhance worker's productivity by increasing their physical capacities, such as strength and endurance, as well as their mental capacities, such as cognitive functioning and reasoning ability. A positive relationship exists between health and productivity for both unskilled and skilled workers. (Savedoff and Schultz 2000; Schultz 1999a, 1999b, Schultz and Tansel 1992; Strauss and Thomas 1998).

A link also exists between health and income at the macroeconomic level. Strong cross-country correlations between measures of aggregate health, such as life expectancy or child mortality, and per capita income are well established (Preston 1975; World Bank 1993). Social scientists commonly regard these correlations as reflective of a causal link running from income to health (see, for example, McKeown 1976; Pritchett and Summers 1996). Higher incomes promote access to many of the goods and services believed to produce health and longevity, such as a nutritious diet, safe water and sanitation, and good health care, but this standard view has been challenged in recent years by the possibility that the income-health correlation is also explained by causal link running the other way, from health to income.

There are plausible pathways through which health improvements can influence the pace of income growth via their effects on labour market participation, worker productivity, investments in human capital, savings, fertility and population age structure (Bloom and Canning 2000; Bloom, Channing, and Sevilla 2002a; Bloom, Canning, and Graham 2003; Commission on Macroeconomics and Health 2001; Eastern 1999; Hamoudi and Sachs 1999). A common empirical approach towards studying the effect of health on economic growth is to focus on data for a cross-section of countries and to regress the rate of growth of income per capita on the initial level of health (typically measured by life expectancy), with controls for the initial level of income and for other factors believed to influence steady-state income levels. These factors might include, for example, policy variables such as openness to trade; measures of institutional quality, educational attainment, and rate of population growth; and geographic characteristics.
Barro and Sala-Martín (1995) describe the theoretical framework that underlines the specification conditional convergence model. Nearly all studies that have examined economic growth in this way have found evidence of a positive, significant, and sizable influence of life expectancy (or some related health indicator) on the subsequent pace of economic growth (see, for example, Barro 1991, 1996; Barro and Lee 1994; Barro and Sala-I-Martín 1995; Bhargava and others 2001; Bloom, Canning, and Savilla 2004; Easterly and Levine 1997; Gallup and Sachs 2000; Sachs and Warner 1995, 1997). These studies differ substantially in terms of country samples, time frames, control variables, functional forms, data definitions and configurations, and estimation techniques. Nevertheless, parameter estimates of the effects of life expectancy and age structure on economic growth have been reasonably comparable across studies. While the results of empirical growth equations are generally not completely robust, Levine and Renelt (1992) and Sala-I-Martin (1997a, 1997b) found that out of more than 32,000 regressions involving permutations of over 60 variables, initial life expectancy is a positive and significant predictor of economic growth during 1960-92 in more than 96 percent of the specifications. This makes initial health one of the most robust predicts of subsequent economic growth.

A study by Bosta et al., (1979) on the rubber plantation workers in Indonesia revealed that treatment of anaemic workers with iron Tablets for a period of 60 days (at a per capita cost of $0.80) resulted in an increase in productivity by 15 to 20 per cent as compared to control groups. It has been estimated that output increases by about 10 to 20 per cent for every 10 per cent rise in haemoglobin level (Levin, 1986).

Fogel (1994, 1997) argues that a large part of British economic growth during 1780-1980 (about 0.33 percent of a year) was due to increase in effective labour inputs that resulted from workers' better nutrition and improved health. Using a similar methodology, Sohn (2000) argues that improved nutrition increased available labour inputs in the Republic of Korea by 1 percent a year or more during 1962-95.

Health is a vitally important form of human capital and deserves the same level of attention in the development process as is currently paid to the accumulation of physical
capital and education. In particular, public health measures in developing countries, such as vaccination and antibiotic distribution programmes, can lead to large improvements in health outcomes at relatively low costs (Commission on Macroeconomics and Health 2001; World Bank 1993).

d) **HUMAN CAPITAL AND PRODUCTIVITY**

Studies in countries like Brazil, Kenya, Malaysia and South Korea show that primary education results in increased crop productivity for farmers (World Bank, 1980). This is because educated farmers are in a better position to adopt improved technology. One study relating to Africa indicates that farmers with four years of education (the minimum for achieving literacy) produce about 8 percent more than farmers who are illiterate (World Bank, 1990). A number of such examples are found in Comia, Jolly and Stewart, (1987) and Haddad et. al., (1990).

Studies by Griliches (1964) and Welch (1970) suggest that a 10 per cent increase in farmer education raises productivity by 3 to 5 percent, compared to only a 1 to 2 per cent increase to be gained from a 10 per cent increase in either land / fertilizer or machinery.

Lockheed (1987) in his study surveyed the finding of 18 studies and concluded that in low-income concerning the degree of the educational level of small farmers is reflected in their production efficiency. The 18 studies included analysis of 37 sets of farm data that allow, with other control variables a statistical estimation of the effect of education. In six of these data sets education was found to have a negative (but statistically insignificant) effect, but in remaining 31 the effect was positive and usually statistically significant. Though combining the results of disparate studies must be done with caution, the overall conclusion is that farm productivity increases, on the average by 7.4 per cent as a result of a farmer's completing 4 additional years of elementary education rather than none; that 7.4 percent is a weighted average of values from those studies for which an estimate could be computed. A number of studies showed evidence
of a threshold number of years (4-6) at which the effect of education became more pronounced.

The effect of education was much more likely to be positive in modernizing agricultural environments than in traditional ones, as has been ascertained both by inspection and by regressing (across studies) the measured effects of education on productivity as against the degree of modernisation of the environment and other variables.

There are numerous studies showing that higher average education levels in a workplace are associated with higher productivity (Horowitz and Sherman 1980; Buxton 1977; Black and Lynch 1996). There are also a number of studies, cited by Chapman and Chia (1989) showing that higher education levels contribute to willingness and ability to adopt new technology. Chia (1990) estimates that the investment in a bachelor’s degree in Australia yields a private rate of return of 9.6 per cent for males and 12.6 per cent for females. (Miller 1982). Maani (1996) provides similar estimates for New Zealand.

e) RETURNS TO HUMAN CAPITAL

A number of studies analysed the impact of human capital on earnings. Psacharopoulos (1978) has reviewed attempts to measure the social and private rate of return to investment in education in 32 countries in 1973 and has upgraded this survey of research on the returns to education by analysing the results of cost-benefit analysis of education in 44 countries in 1981. Estimates of social and private rates of return to educational levels in 44 countries in the period from 1958 to 1978 reveal, according to Psacharopoulos, four underlying patterns: (a) The returns to primary education (whether social or private) are the highest among all educational levels. (b) Private returns are in excess of social returns, especially at the university level. (c) All rates of returns to investment in education are well above the 10 per cent common yardstick of the opportunity cost of capital. (d) The returns to education in less developed countries are higher relative to the corresponding returns in more advanced countries.
Psacharopoulos (1978) examined estimates of the returns to physical capital in both developed and developing countries and concluded that: (a) the returns to both form of capital are higher in developing countries, which reflect the differences in relative scarcities of capital in either form in developed and developing countries; and (b) human capital is a superior investment in developing countries.

1.3 HUMAN DEVELOPMENT APPROACH

The alternative approach to social sectors is that of human development approach, also known as the human capabilities approach. Following this approach, “social sectors could be defined as those providing social securities” (Prabhu 2005). The term social security is used in its broader connotation. The human development has been defined by the UNDP as ‘the process of enlarging people’s choices’ (UNDP, 1990). The concept encompasses empowerment, co-operation, equity in basic capabilities and opportunities, sustainability and security. In this approach people occupy centre stage, and measures such as education, health and nutrition are emphasised for their intrinsic value and for their role in enhancing the basic capabilities of people.

An important feature of this approach is that it considers the acquisition of minimum levels of education, health and nutrition as basic rights of people and therefore assigns a key role to the state in providing these rights (Dreze and Sen 1995). Thus, there is greater emphasis on the supply of public services as compared to the reliance placed on rise in general affluence to enhance basic capabilities. The state is not only a regulator but a provider of services as well. The focus of attention is not merely on workers who contribute to production but also the old and infirm who may not be in a position to make an economic contribution. Importantly, the approach needs no justification such as rates of return to investment to justify public expenditure on social sectors.

The human development approach is based on the premise that economic growth does not automatically lead to higher attainments and that the pattern of growth and social sector attainments. Income poverty, particularly, acts as an inhibiting factor in achieving desirable levels of social sector attainments. The role of the state, in this
paradigm, extends from being a facilitator to that of investmenting directly in social services. This investment is sustained over decades in recognition of the long gestation period involved for reaping its benefits. More importantly, investment in social services is not a 'stand alone' policy measure. It is part of a redistribute ethos that permeates all policies, an essential tool for empowering the people and ensuring that the benefits of growth are equitably distributed. Specific measures to alleviate income poverty are seen as necessary interim measures to correct structural inequities (UNDP 1990).

1.4 LINK BETWEEN HUMAN RESOURCE DEVELOPMENT AND HUMAN DEVELOPMENT

While the two concepts represent different approaches to the role of social sectors in economic development, they are linked together by the fact that the broad-based concept of human development provides the necessary conditions that enable human resources to contribute to economic growth. The social capability concept referred to earlier, which emphasises institutional and attitudinal characteristics in an economy, is a general illustration of this linkage.

More specifically, the linkage can be illustrated from the field of education, which has been discussed extensively by the advocates of human resource development. Empirical studies in this sphere stress the fact that productivity increases from education are more pronounced with the attainment of 4 to 6 years of schooling (Lockheed, et al., 1980; Coclough, 1980). It has been acknowledged that the East Asian approach of emphasis on universal high quality primary education had important pay-offs both for economic efficiency as well as for equity. The excess demand for secondary and tertiary education generated by rapid attainment of universal primary education was met in these countries largely by a meritocracy oriented public secondary system and a self-financed private system. Vocational training, a facet of education that is emphasised by the human resource developers, is found to be effective if trainees have a solid base of primary and secondary education (World Bank, 1993).
A more important reason for emphasising acquisition of basic education in the present milieu of globalisation is that it imparts the much sought after flexibility in labour skills and enables the economy to adapt to the changing market conditions and thereby maintain its competitive edge. In developing countries with iniquitous structures, the access to education is likely to be limited to the elite. The restricted social base narrows the scope for the emergence of innovators, which, in times of rapid technological change is likely to be detrimental to economic growth. As Stiglitz (1995) points out, new ideas are generated not so much by individuals working in isolation but through a process of interaction of skilled people who learn from each other. This interaction is facilitated by appropriate organisation and management of research and development institutions. Examples of socialist countries are frequently cited to illustrate how the mere existence of engineers and scientists does not lead to generation of innovation. The variety of institutions, economic, political and social, should together foster the generation of new ideas. Dreze and Sen capture the essence of the argument in their more recent work (1995) when they term state intervention to reduce illiteracy, mortality and morbidity as 'market complementary interventions'. Dasgupta (1993), arguing in a similar vein, talks of the need for complementary services provided by the state to enable investment in human capital to yield higher rates of return and proposes a social contract that pre-commits the access to commodities such as nutrition, shelter, primary and secondary education, basic health care and legal services, to people as components of their ‘positive rights’.

Forgoing analysis defined social sector through the two approaches viz., human resource development approach, and human development approach. The analysis also discussed the theories and empirical evidences of human capital for economic growth. The next section deals with Indian studies relating to the present research work.

1.5 SOCIAL SECTORS IN INDIA

There are several studies on social sector in India, mostly confined to discussing the issues and identifying / analysing the determinants of the social sector. Moreover, a
good many of them have concentrated mainly on the components of social sector rather than social sector as an integrated whole.

a) **SOCIAL SECTOR EXPENDITURE**

Social sector expenditure is one of the important issues for the present study. In India, the head “social services” was introduced in 1973-74 budgetary classification. Before 1973, there were studies relating to education and health expenditure but not on social sector as a whole. The Education Commission (1964-66) headed by D. S. Kothari recognised education as an investment and its contribution to development, and recommended that 6% of GDP be spent on education. Subsequently, many studies evaluated state as well as central government expenditure on education namely, V.K.R.V Rao (1964, 1970), Singh (1967), Kothari (1966a), Pandit (1969), woodhall (1969), Panchamukhi 1975, Varghese 1989, Baghavati 1973 Tilak (1987). All the studies showed that public expenditure on education as well as health is very low, they suggested many policy measures, and supported the Kothari committee’s recommendations for higher outlay for educational development. After the UNDP publication of the Human Development Report in 1990, the studies on public expenditure on social sectors have increased considerably. An important study in public expenditure on social sector in Indian states is by Prabhu and Charttarjee (1993), which found that the social allocation ratio of India is lower than the UNDP recommended ratio. Inter-state disparity is also high in social sector spending. The study indicated that the success of human development strategies in the country depends on the initiative, direction and thrust that the central and state governments give to social services. This is particularly apparent in case of states of – Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh, a – states which have large population and low levels of human development. An enhanced allocation with focus on primary level facilities combined with sustained efforts at the level of the states is the main ingredients of success in the human development sphere.

Gaur (2006) examined the growth of inter-state expenditure on education, medical and health sectors for the period 1980-81 to 2001-02. Using regression analysis, the study found that per annum growth in expenditure (in total as well as in per capita terms) on
medical and public health and education, in case of poor states, has gone down during post economic reform period. For instance, expenditure on education except of Punjab in the category of rich states – Haryana, Gujarat and Maharashtra have shown poor performance during the post-economic reform (1992-2002) period. Similarly, the category of poor states like Bihar, Madhya Pradesh, Rajasthan and Orissa have also shown poor performance in terms of expenditure on education during post-economic reform period. The declining expenditure of states on education and health especially during the post reform period has adversely affected the level and structure of human development among Indian states. The study suggested an urgent need to augment the volume of state expenditure on social sector in order to ensure better standard of life.

Tilak (2002) found that public expenditure on education in India experienced rising trends in the 1960s, followed by a steep decline in the 1970s, and then a slow and steady increase in the 1980s, followed again by severe cuts in the 1990s. Such serious fluctuations may not ensure building a strong and sustainable education edifice. The study reiterated the Kotari commission’s recommendation for 6 per cent GDP to be spent on education as against the present outlay of 3.5 per cent. Singh and Nandakeoliyar (2006) have also stressed the importance of expenditure of 6 –7 per cent of GDP of education.

b) ECONOMIC REFORM AND SOCIAL SECTOR EXPENDITURE

At the cross-country level a number of studies are there on the impact of structural adjustment on budgetary spending; while the studies on social sector spending are few. However, studies of public expenditure on social services, pattern of spending and their outcomes across regions, and at times even within regions, have shown vastly differing results during the period of the study. Bourguignon and Morrison (1992) reported that the inter-country picture with respect to social expenditures is more diverse in respect of African countries, as compared to the Latin American and Asian countries. In Morrocco, Social expenditure as a percentage of GDP fell in the adjustment years (1983 to 1986), although the share of social expenditure in the total government spending did not decline. In both Indonesia and Malaysia, social expenditure was protected during the reform
period. The study presents an ambiguous picture regarding the impact of reforms on the social sector, apparently because of the choice of one and the same period for all the three sets of indicators, i.e. expenditure, maintenance of services, and outcome indicators. According to Hicks and Kubisch (1984), in general, the social sector was comparatively less vulnerable (subject to smaller reduction as compared to that in the total expenditure) to public expenditure reduction in several countries during the seventies and eighties. Social sector expenditure increased in Brazil, Indonesia, and the Philippines during this period, despite cuts in government spending. In the case of Turkey, Guyana, and Sudan, social expenditures were found to be vulnerable. In times of austerity, social sectors, administration, and defence generally saw large reductions. Taylor (1993) observed that countries affected by shocks adjusted in significantly different ways, depending on both internal and external factors such as institutions, macroeconomic structures, and their socio-economic environments (Bourguignon and Morrisson 1992; Sahn 1987).

In India too, number of studies have examined the impact of Economic Reforms on social sector spending. Prabhu (1996) points out that social sector expenditures by the state governments (crucially) depend as much on their success in additional resource mobilisation as on the political commitment towards the goals of human development. This analysis, covering 4 years (from 1991) of structural adjustment in India, utilises 3 indicators: (i) SAR (Social Allocation Ratio - Proportion of total revenue expenditure of the state governments that is devoted to social services), (ii) SPR (Social Priority Ratio - Proportion of revenue expenditure on social services), and (iii) PAR (Public Allocation Ratio - Ratio of revenue expenditures on sectors of social priority to total revenue expenditure). The majority of states showed a declining SAR, while the trend in SPR failed to expose any significant shift in allocational pattern within the social sector favouring the priority sectors of elementary education, public health, water supply and sanitation, maternal and child health services and nutrition. However, the PAR did reveal a distinct declining trend in 9 out of 15 states sampled, including Kerala for which SAR and SPR were found to be high. The declining trend of PAR was interpreted by Prabhu as evidence of the adverse impact of structural adjustment programme on the levels as well as patterns of social sector expenditure by state governments. Further evidence for the
retargeting of social sector spending within the priority sector is provided by an examination conducted of allocational changes relating to components of education and health sectors. However, there is no clear pattern discernible in the allocational shifts. With respect to health, 6 of the 15 states showed a clear increase in the share of public health, whereas in case of education, 5 out of 15 states recorded an increase in the allocational share of elementary education. Significantly, among the low-income group states (LIG states), it is elementary education, which was found to have received significant priority attention in at least 2 states – Orissa and Madhya Pradesh, while it is only for Madhya Pradesh that the share of public health remained more or less constant. For the other Low Income Group (LIG) states, i.e., Orissa, Bihar, Uttar Pradesh and Rajasthan, the allocational share of public health declined in the adjustment period, with having recorded Bihar recording the sharpest decline.

Panchamukhi (2000), using the data from 1987-88 to 1997-98 for states as well as the Centre, found that economic reforms were unfavourable to countries like India, as it increased the inter-state disparity in social sector expenditure in the country.

A study by Dev and Mooij (2002) looked at several aspects, including overall levels of allocation, expenditure on health and education and other components and inter-state disparities. The study examined trends at three levels: Central and states combined, at Central and at State level. The study included plan and non-plan expenditure under capital and revenue accounts. The study analysed the trends as a proportion of GDP (for states GSDP), as a percentage of aggregate budgetary expenditure, and real per capita expenditure.

Main findings of their study are

(1) Trends in social sector expenditure: (Centre + states taken together): As a proportion of GDP, the share of social sector expenditure increased during the reform period except in 1999-00. As a proportion of total public expenditure, the share for the social sector has increased since the mid-1990s. The proportion was higher in the second half of the 1990s than in the late 1980s. The per capita real expenditure has also increased
since the mid 1990s. From the middle of the 1990s onwards, the per capita real expenditure was higher than it has been in the 1980s. **Central government expenditure:** Since 1993-94 the share of GDP devoted to the social sector has been higher than that in base year 1990-91, although not significantly different from its shares in late 1980s. As a proportion of total expenditure and as real per capita expenditure, there has been a significant increase in social sector spending since the mid 1990s which was higher than in the late 1980s. **State government expenditure:** State government expenditure on social sector as a proportion of GSDP and as a proportion of aggregate expenditure, has come down in the states. In terms of per capita real expenditure there has been some increase, except in the first half of the 1990s.

(2) Changes in composition: The most significant change, both at the centre and states has been a shift away from rural development, starting from 1996-97. Within the rural development outlay at the centre, there is a shift away from rural employment schemes to rural housing, water, and rural roads.

(3) Improvements in education and health expenditure: With regard to health, not much has changed. Neither the states nor the centre did increase their health expenditures considerably. With regard to education, the share of expenditure from all the departments put together declined from around 4.1 per in 1990-91 to 3.8 percent in 1998-99. The education expenditure of the Centre increased from 0.25 per cent of GDP in 1994-95 to 0.31 per cent in 1995-96 and to 0.36 per cent in 1998-99.

(4) Social sector expenditure as a share of budgetary expenditure in India in the 1990s was low as compared with what India spent in the 1980s; and it is also low as compared to other developing countries, and certainly less compared with the East Asian countries as also the UNDP recommended ratio. Karunakaran’s study (2003) also corroborates the same findings.

Rawat, Agarwal and Dev (2006) examined the revenue and capital expenditure of Centre, states and union territories in India from 1986-87 to 2002-03, and plan outlay of health and family welfare from the first to tenth plan. The study indicated that although,
the government has made much effort in providing health to the people since independence, a lot still needs to be done. The government should not only increase expenditure on health and family welfare but also improve the quality of services provided, in order to have an efficient and healthy society.

Sudhakar and Moss (2003) pointed out that, on an average, the share of expenditure on the social sector increased marginally from 25.34 per cent during the four-year (1987-91) pre-reform period to 25.42 per cent during the post reform period (1991-95) of the combined allocation of the centre and the state for the combined (centre and states). In case of Centre, the proportion of the total budgetary expenditure on social sector went up from 11.38 per cent during the five-year (1986-91) pre-reform period to 12.00 per cent during the post-reform period. In case of all the 26 states combined, on an average, the expenditure proportion of the social sector went down from 43.01 per cent during the pre-reform period (1987-91) to 39.96 per cent in the post-reform period (1991-95).

Mishra (2001) developed a model to examine the impact of economic reforms on public spending. The study included a revenue deficit based indicator as an explanatory variable and a reforms dummy was included to capture any shift in macro-level health sector performance; the study used only central government data. The regression results established a positive shift in health performance during the reform period. On the supply-side, in the public sector domain of health service facilities, the level of functional efficiency (defined in terms of the ratio of manpower to infrastructure) was found to be positively and strongly linked to public spending on health service. The elasticity of manpower-capital ratio in health sector with respect to government spending on health is 2.081, a figure of high statistical significance. The high elasticity value is suggestive of possible presence of unexploited scale economies in public sector health facilities. This is consistent with the low and less-than-unity elasticity estimate (0.248) of the health performance variable with respect to functional efficiency of public sector health facilities. A sub-optimal manpower-capital ratio in public sector health facilities would result in functional inefficiency and account for its weak link with the health performance. Deficits in public spending (at the central government level) are found to be
significantly and positively associated with health sector resource allocations. However, it must be admitted that, health being the state subject, more meaningful relationships would be with respect to state level data.

In the initial years of economic reforms, public expenditure on social sectors decreased as a percentage of total budgetary expenditure and as a percentage of GDP but after 1996, the social sector expenditure has been increasing. However, it is to be noted that, the growth rate was low for the period covered.

Joshi (2006) using the data from the year 1986-87 to 2002-03, found that social sector expenditure as a share of combined (centre and states) budget increased during the reform period. In case of the central government, social sector spending increased considerably after 1990-91. Whereas, the combined social sector spending of all 25 states share decreased during reform period. Education expenditure of the Centre as a share of GDP increased, while that of states decreased until 1996-97. But the implementation of mid-day meals programme resulted in considerable increase in the expenditure on elementary education after 1997-98. Thus, with the exception of expenditure on elementary education, expenditure on all other sub-sectors suffered. In case of health, centre's spending as share of budget and GDP increased significantly, while that of the states decreased. The study rightly advocated immediate and sustained steps from the government to improve the condition of education and health.

Adi (2004) studied the combined (centre and states), centre and all states expenditure on social sector from 1991-92 to 1999-00. But the study does not focus on individual states expenditure. Further the study points out that over the years, public expenditure on social sectors has increased substantially in absolute terms. However, the rate of increase during the reforms period went on decreasing until 1997-98.

Bhat (2000) found that central government expenditure on social sector increased in general, and health sector in particular increased after economic reforms. Tulasidhar and Sarma (1993) found that, in all the states, real per capita public spending on health grew faster than real per capita state domestic product.
Studies relating to plan-wise social sector expenditure are rare. Patak (1999) studied the relationship between social sector plan outlay and economic growth. He pointed out that the plan outlay of social sector grew very substantially from 1<sup>st</sup> plan to 9<sup>th</sup> plan, and that as a result of efforts made under planning through the expansion of social services, human resource development has been taking place, bringing about significant favourable change in the size and quality of population. Ahamad (2004) also examined the growth of public expenditure and its various sectors in plan period (1<sup>st</sup> plan to 8<sup>th</sup> plan). The study observes that India has not been able to eradicate poverty, or to achieve 100 per cent literacy even after spending large sums on social sector. Prasad (2005), while analysing the plan expenditure on social sector from 1<sup>st</sup> plan to 9<sup>th</sup> plan, emphasised the importance of social sector expenditure for economic growth,

There aren’t very many studies at the state level on social sector expenditures. Patnaik (2005) studied the expenditure on education and health in Orissa. The study found that expenditure on education, health and other social sectors in Orissa has increased to some extent but not satisfactorily. A study by Parmar (2005) in Himachal Pradesh also stressed the need for increase in budgetary allocations for social sector.

c) IMPACT OF SOCIAL SECTOR EXPENDITURE

Studies relating to the impact of social sector expenditure on various aspects like human development, poverty alleviation, economic development, and other aspects are also not in adequate numbers in India compared to studies for other countries of global survey.

Kaur and Misra (2003) calculated a simple rank correlation co-efficient between HDI ranking of the state and the real per capita expenditure of individual states on social services to assess the impact of social sector expenditure on human development. It is observed that the HDI and social sector expenditure are strongly positively correlated. Further, disaggregated analysis reveals that the rank correlation co-efficient between HDI and two other components of social sector expenditure, namely education and health is
high. Of the two, education expenditure seems to be playing a more significant role than health expenditure.

Chakraborty (2003) examined the impact of social sector expenditure on human development across countries in a multivariate framework. His study selected four major countries in South Asia, namely Bangladesh, India, Pakistan and Sri Lanka. The sample included Australia, Canada, Norway, Sweden, United Kingdom and United States to represent countries with high HDI and GDI; China, Indonesia, Malaysia, and South Korea to represent Asian Countries out side South Asia, and Gambia to represent countries with low HDI and GDI out side South Asia. The data analysed related to the years 1993, 1994 and 1995. Using fixed effects model of pooled least squares for the early 1990s, the analysis of link between per capita expenditure on health and education and Human Development Index (HDI), revealed that there is a positive functional relationship between the two. The per capita income, though found significant in determining human development, is not a sole factor, which leads to human development. The study also estimated coefficients of pooled least squares revealed that per capita spending on education and health have relatively stronger impact on human development than growth in per capita income per se. The same were results when HDI (Human Development Index) was replaced by GDI (Gender Development Index). This result reinforces the view that, public expenditure on human capital formation gets transformed to desired objectives of better human development in general and gender-sensitive indicators in particular, despite the constraints of intra-household disparities in resource allocation. In other words, the public policy stance plays a crucial role in human development.

There are studies that throw light on the progress in status and facilities for education and health. They also analyse regional variations. A single indicator is inadequate to present the whole picture of education or health situation in regard to different regions. Hence, the construction of indices by using several of the indicators is the suitable method to understand the status of the education and health situations. It is also useful for inter-regional comparisons.
Dadibhavi and Bagalakoti (1994) constructed composite indices for health status and health infrastructure for the year 1976-77 and 1992, using indicators like **Health Status Index** - Infant mortality rate (urban, rural and combined) and Life expectancy at birth. For **Health Infrastructure Index**, they used Number of hospitals and dispensaries (per 1000 sq.km and per lakh population), Number of beds per lakh population and Number of primary health centres and sub-centres per million population. They found that in regard to health status and health infrastructure the gap between rural and urban is declining. This is evident in the case of states like Kerala, Punjab, Maharashtra, Andhra Pradesh, Gujarat, West Bengal, Rajasthan, and Uttar Pradesh. Further, Assam and Karnataka show positive trends. In Bihar, Orissa and Madhya Pradesh the gap has not declined considerably. The study indicated that: (1) Government should play a major role in improving the health of the people. (2) Spending on health infrastructure will have a more positive impact on health status. (3) Expansion of investment on health infrastructure in rural areas in general and rural areas of backward regions in particular will reduce the rural-urban as well as inter-state disparities in health status. (4) Universalisation of education, especially female health education will not only improve health status but will also help to solve other socio-economic problems. (5) Higher investment for overall and accelerated development is necessary to improve the capabilities of the people and capacity of the government to allocate more funds for health programmes.

Yadav and Srivastava (2005) developed an education development index [EDI] for all India and for 16 major states, using 5 parameters and 30 sub parameters for the year 1993-94. The parameters are- literacy, progress in education, quality of teaching, infrastructure facilities in education and expenditure. Sub-parameters for **Literacy are** literacy rate of male, literacy rate of female, literacy rate of scheduled castes male, literacy rate of scheduled castes female, literacy rate of scheduled tribes male, and literacy rate of scheduled tribes female. **Sub-parameters** for **Progress in Education** (Level-wise) are male enrolment ratio, female enrolment ratio, male enrolment in class VI as a percentage of male enrolment in class I, female enrolment in class VI as a percentage of male enrolment in class I, continuance rate (male), continuance rate
Sub parameters for **Quality of Teaching** (Level-wise) are teachers' pupil ratio, female teachers, trained teachers, and schools with more than two teachers (at only primary level of education). Sub parameters for **Infrastructural Facilities** (Level-wise) are rural population having primary schools within 2 Kms, rural population having upper primary schools within 3 Kms, rural population having secondary schools within 8 Kms, rural population having higher secondary schools within 8 Kms, schools with urinal facilities, schools with urinal facilities separately for girls, schools with lavatory facilities, schools with drinking water facilities, and schools with one or more rooms. Sub-parameters of **Expenditure** are public expenditure on education as a percentage of state domestic product, plan expenditure on education to total plan expenditure, non-plan expenditure on education to total non-plan expenditure, plan expenditure to total expenditure on education, expenditure on elementary (primary and upper primary) education to total expenditure on education, expenditure on secondary education to total expenditure on education, and per student expenditure on elementary education, per student expenditure on secondary education. The study made use of three methods of Education Development Index [EDI] viz., Principal Component analysis, Composite variable rank and Growth index.

The study found that, (a) Bihar is the most backward state in respect of education parameters both in urban and rural areas. (b) Karnataka state is highly backward higher secondary level followed by Bihar and Uttar Pradesh. (c) Kerala ranked as the most developed state at all levels of schooling except higher secondary. (d) At the higher secondary level Haryana scored the highest followed by Kerala, Punjab and Rajasthan.

Somannavar (2003) constructed the principle composite index for health infrastructure for the year 1960-61, 1970-71, 1980-81, 1990-91 and 1999-00 for districts in Karnataka using the variables like, number of government institutions per lakh population, number of medical institutions per 1000 sq. km. area, number of PHCs and PHU's per 1000 sq. km. area, number of beds per lakh population, number of sub-centres per lakh population, number of physicians per lakh population and number of health workers per lakh population. The study observed the reduction in inter-district disparity from 1961 to 2000. Further, health infrastructures and its impact on health status has been
analysed with the help of a two-variable regression analyses. Indicators of health status are CDR, IMR, and LEB. His study found the development of health infrastructure having positive impact on the health status of the people.

Armugam (1998) has chosen various indicators viz., life expectancy at birth [LEB], female literacy [FLIT], per capita health expenditure [PCHE], per capita state domestic product [PCSDP], all doses of vaccination [VACCINEA], infant mortality Rate [IMR], crude death rate [CDR], proportion of mothers had anti-natal care [ATENA], proportion of population below poverty line [PBPL], number of beds per one lakhs population [NOBEDDS], proportion of children under nourished [NUTRIST], and morbidity. To analyse the influence of the above shown determinants on Health status in India a multiple regression method was used, using NHFS (1992-93) data.

Finding of his study are: (1) The correlation analyses revealed that the association between morbidity and the set of independent variable, CDR, IMR, and NUTRIST, were positively correlated. (2) Female literacy has a crucial role in reducing morbidity. (3) Per capita expenditure on health, proportion of population below the poverty line, life expectancy at birth and nutritional status of the children have significant influence on morbidity. Similarly as life expectancy at birth progresses, morbidity rate declines. (4) Female literacy [FLIT] positively influences and also reduces significantly the nutritional deficiency when it is treated separately. (5) The effect of per capita health expenditure, morbidity, IMR and life expectancy at birth on nutritional deficiency is negative and significant. (6) The influence of the per capita state domestic product and percent of population below poverty line on nutritional deficiency are positive and significant. (7) When nutritional status rises, morbidity rate declines.

Manonmany (1991) studied the determinants of health status of Tamilnadu state in terms of three indicators, viz., crude birth rate [CBR], crude death rate [CDR], and infant mortality rate [IMR]. She used per capita income, public health expenditure at constant prices, number of hospitals, dispensaries, primary health centres and bed strength per million population as variables and used the time series data for the period 1981-82 and 1990-1991, to arrive at the following findings: (a) role of primary health
centre has been important in reducing infant mortality rate and (b) per capita income of people in the state and overall social development schemes worked to improve the health status.

Shariff (1995) studied the determinants of morbidity using the NCAER national household level survey (1993), consisting of various aspects of health care utilisation and health characteristics of the households. The study considered four types of estimates: (a) a reduced form multivariate model was used to know the extent to which individual attributes contributed for morbidity, (b) relative risks of morbidity, (c) determinants of hospitalised treatment, and (d) determinants of the choice of the type of treatment facility. As this study was based on household level data the findings of the study revealed the role of household and personal characteristics of morbidity, some of which are: sex, age, education, household and variables based on region and sex. Further the study concludes that India’s original health transition is still in a stage in which the individual level variables are showing considerable influence on morbidity.

Studies on the impact of public social services expenditure on national income are very few, but those on the impact of public education and health expenditure on national income are relatively more in number.

Chandrasekharan (2006) attempted to bring out the contribution of public expenditure on education to economic growth. The study reveals that the growth of public expenditure on education is brighter in nominal terms, but not so in real terms. Public expenditure on education and national income are positively correlated. The study also predicted that, had the public expenditure on education been 6 per cent of national income, its contribution to national income would have been Rs. 97244.307 at current prices and Rs. 50786.986 at constant prices. The CAGR of public expenditure on education is estimated at around 12 per cent and 5 per cent at current and constant prices respectively. He concluded that the CAGRs of public expenditure would generate an equal CAGR of national income both at current and constant prices. He suggested that the government should allocate adequate funds (at least 6 per cent of GDP) to education in order to realise the targeted increase in the rate in growth of national income.
Hariham (2006) used statistical tools like Correlation, Regression, Standard error, t test, Coefficient of Determination, F Value and Durbin Watson statistic to identify the time lag required for the government expenditure on education to make its significant influence on NSDP for the state of Tamilnadu. The model found that government expenditure on education influenced significantly the NSDP in Tamilnadu after a period of 14 years. Regression analysis also suggested that an increase in the state government expenditure on education a year by Rs. One crore, would increase the NSDP of Tamilnadu by Rs. 114 crores after 14 years. He also suggested that estimations should be done for all states and national level to frame proper policy for development.

Malhotra and Shweta (2006), Kaushik, Klein and Arbenser (2006) established the positive relationship between per capita public health expenditure and per capita net state domestic product, health indicators and literacy rate by a regression analysis. Their studies did not find positive relationship between health expenditure and health status. The study suggested that, in order to improve health indicators, the state governments will have to spend more on public health and education. In the case of poorly performing states in terms of health, the country cannot wait for the state incomes to rise and only then impact health favourably. States will have to devote more resources to promote basic health facilities especially for poorer sections. To raise public investment, policies are to be promoted to permit equitable access to preventive and curative health services.

Roy, Kamaiah and Rao (2000) used the pooled regression model for per capita public expenditure on primary, secondary and higher education for 15 major states for the years 1992-93 to 1997-98. The study found that, Gujarat and Maharashtra emerged champions for their espousal of primary education since, in these states, the actual expenditure levels are much higher than the normative levels. On the contrary, Bihar, Haryana, Uttar Pradesh and West Bengal lagged far behind the normative expenditure levels in terms of their actual expenditure. In respect to secondary education, Andhra Pradesh, Punjab and West Bengal spent significantly more than the normative levels, whereas Assam, Bihar, Madhya Pradesh, Orissa and Uttar Pradesh spent much less than the normative levels. For higher education, the states that spent significantly more than the normative levels are Andhra Pradesh, Haryana, Kerala and Punjab. Similarly, the
states that spent significantly less than the normative levels on higher education are Assam and Uttar Pradesh. The study also found that rich states spent more and poor states spent less as far as social sectors are concerned. The only exception being Orissa, where the expenditure on higher education is significantly higher than the normative level.

d) HUMAN DEVELOPMENT

UNDP has been publishing Human Development Report since 1990. After 1990, the cross-country analyses of HDI are being done in the worldwide. Indian human development has been compared with developed, developing countries and with different regions of the world. Many studies have examined the determinant factors for improved human development index. Most of the studies have found a positive relationship between public social services like education and health spending and Human Development. In India, beginning from Prabhu and Chattarjee (1993), attempts have been made to construct the human development index of Indian states as well as of districts using different indicators. Comprehensive alterations in the construction of the index have not been possible, as all the relevant data were not available. However, there are very few studies relating to the impact of public social sectors expenditure on human development.

Prabhu and Chatterjee (1993) have constructed the human development index for the year 1984-85 and 1990-91 using principal component analysis. The study found the BIMARU states (Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh) as the lowest ranking states with respect to both SDP as well as human development. Despite efforts since 1985-86 to increase levels of expenditure on education and health, these states continue to figure among the states with the lowest economic growth and human development.

Rani (1999) constructed Human Development Index for 391 Districts in the country using the 5 components namely rural literacy, male/female literacy ratio, rural IMR, per capita value of major crops (in Rs.) and manufacturing work force. The analysis brings out the importance of income variable in any composite index of development.
The district-wise human development index, developed by her, suggests that apart from the development opportunities (income), literacy in general and female literacy in particular, appears to hold the key to the attainment of high human development.

Dasgupta and Dasgupta (2006) constructed the human development index for major 15 states. They found that social sector development potential of Karnataka and Uttar Pradesh is expected to go up. But the situation of other six states viz. Bihar (including Jharkhand), Madhya Pradesh (including Chattisgarh), Andhra Pradesh, Orissa, Assam, Rajasthan still lack the immediate potential for improving their human development Index. The study prescribes that in order to raise the human development of the relatively backward states removal of the non-economic bottlenecks and economic impediments. Zaidi and Salam (2005) constructed the HDI making slight modifications to the UNDP methods to calculate the life expectancy and educational attainment indicators. However they arrived at a similar result as that of Dasgupta and Dasgupta.

Basabi (1998) estimated the HDI for the districts of West Bengal for two successive census years, 1981 and 1991 in order to estimate the changes in the pattern of relative deprivation over time. His study indicated that the pattern of relative deprivation in West Bengal has not changed over time. However, the extent of relative deprivation has slightly declined since 1991. The relative deprivation index in West Bengal indicates that more urbanised regions have higher levels of human development at the cost of less urbanised ones.

Kateja (2001) studied inter-state pattern of human development and gender development in India for 1991. Inter state comparison shows that Bihar, Madhya Pradesh, Rajasthan, Orissa and Uttar Pradesh occupy the bottom five places in both indices while Kerala tops the lists. Thus, the study also reveals that the scenario of human development and that of gender equity is dismal in India. Mahanty (2000) constructed productivity index, equity index, and human development index to highlight the importance of agriculture development in regional and human development. Joshi (2000) constructed HDI for the year 1981, 1991 and 1997, using the parameters like crude literacy rate and female literacy rate. Roy and Bhattacharya (1999) constructed HDI with 'under five
mortality rate' (U5MR) instead of life expectancy, adult literacy rate and per capita net state domestic product. (Per capita incomes at current prices converted in to PPP$ for international comparison). Rao (2000), Pedgonkar (1998), Viswanathan (1999) and others also constructed the HDI with minor changes. All studies have come to similar findings.

During 2002, the Planning Commission of India published the ‘National Human Development Report (NHRD) 2001’. Similarly, individual states have also developed their own human development reports, which provide sufficient data to researchers and policy makers. Studies relating to inter-state disparities in human development are many. Among them, mention can be made of Jagadish Prasad (2005), Singh Ripudaman (2006), Kumar Sandeep (2004), Rahman and Pandy (2006) Pant (2006), Hemalatha (2006) Dhage and Kukale (2006), Gadage (2006), Kumar and Sharma (2006), Akthar (2006) and others. These researchers have used NHDR’s data and found that, by and large, the states had maintained their relative positions between 1981 and 2001 with a few exceptions. Tamilnadu improved its ranking from 7th to 3rd and Rajasthan from 12th to 9th. Kerala (1st), Punjab (2nd) Haryana (5th) and Bihar (15th) remained at their relative positions during 1981-2001. The position of Maharashtra, Gujarat, Karnataka, and Andhra Pradesh declined from their respective positions during 2001 but the highest deterioration recorded is in the position of Assam, which shifted to 14th position in 2001 from 10th in 1981. During 2001, Punjab, Tamilnadu and Maharashtra obtained HDI value above 0.500 while Madhya Pradesh, Uttar Pradesh, Assam and Bihar showed values less than 0.400.

Some studies have suggested policy prescriptions for social sector development. Lakdawal (1978) argued that the provision of enhanced social services leads to improvement in productive capacities of the economy through raising the consumption
standards, which in turn improves the productivity of labour. The study suggested that proper planning at local levels should be made for development of social sector. Tej (1984), Varughese (1982), Seeta Prabhu (2002) and many others have suggested various policies for the social sector reforms in India.

1.6 RESEARCH ISSUES

Many studies on social sector expenditure in India have examined the trends and pattern of public expenditure on social sectors, inter-state disparities in social sector expenditure and also the impact of economic reforms on social sector spending. The coverage of time period of these studies is limited. Time period considered by many researchers is different; Dev and Mooij (2002) from 1987-88 to 1999-00 (8 years), Joshi (2006) from 1987-88 to 2001-02 (14 years), Prabhu (1996) from 1991-92 to 1994-95 (4 years), Panchamukhi (2000) from 1987-88 to 1997-98 (11 year), Sudhakar and Moss (2003) from 1987-88 to 1995-96 (9 years) and so on. Very few studies on growth rate of social sector expenditure have been done for pre and post reform periods. Moreover, the period of study considered is too limited to cover the dynamics of either reform periods. In the present research work an attempt has been made to fill this research gap. 15 years of pre-reform period (1976-77 to 1989-90) and 15 year of reform (Post Reform) period (1990-91 to 2005-06), have been analysed in the present study.

Kaur and Misra (2003), Prabhu and Chattarji (1993), Chakraborty (2003), Chandrashekarn (2006), Hariharn (2006), Malhotra and Shweta (2006) and others have studied the impact of public expenditure on human development, poverty, state/national income and education as well as health conditions in different regions. But the specific
studies on impact of public social sector expenditure are few, and the coverage of the
time period and sectors are also limited. An attempt has been made to fulfil this gap with
regard to examination of the impact of social sector expenditure on education, health,

Status of education and health are not examined with a single indicator and hence,
there are apparent differences in the indices. In the present study, four indices have been
constructed using appropriate indicators.

In the present work the relationships between the following variables are traced:

Table below gives the overall structure of research issues of the present study.
While column one shows the key variables, which largely covers the whole study area,
column two shows its relationship with the former.

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1.7 OBJECTIVES

- To analyse the trends and pattern of public expenditure on social services in India.
- To study the impact of public expenditure on education.
- To study the relationship between public expenditure and health.
- To study the association between social services expenditure and human development index.
- To examine the relationship of social services expenditure with economic development and poverty.
- To study the association between education status and economic development, education status and poverty, health status and economic development, health status and poverty.

1.8 HYPOTHESIS

- Inter-state disparity in per capita public expenditure on social services has increased after the economic reforms.
- Growth rates in social sector expenditure have decreased after economic reforms.
- Expenditure on education and education development are positively associated.
- Expenditure on health and health development are positively associated.
- Expenditure on social services and economic development are positively associated.
- Expenditure on social services and poverty ratio are negatively associated.
- High education and health status have positive impact on economic development.
1.9 METHODOLOGY

In this section, tools and techniques, indicators for the construction of indices, coverage of period, data source, selection of states as well as limitations of the study are analysed. Analysis of the data and hypotheses testing in the study have been done using some simple statistical techniques i.e., regression, coefficient of co-relation, coefficient of variation, growth rate etc.

1.9.1 CONVERSION OF CURRENT PRICES TO CONSTANT PRICES*

In order to remove the impact of price rise, the growth and composition of public expenditure has been considered at constant prices with reference to 1993-94 as the base year. By using the GDP deflator method, the current expenditure items were converted into constant (1993-94) prices. The GDP deflator is the ratio of nominal GDP to real GDP. In other words, it is equal to nominal GDP divided by real GDP. To get a value in constant prices we need to multiply the value of current prices with GDP Deflator.

1.9.2 SELECTION OF STATES

15 major Indian states have been selected for the analysis as they cover around 90% of the Indian population. The states covered in the study are, Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamilnadu, Uttar Pradesh and West Bengal.

1.9.3 COVERAGE OF PERIOD

The time period considered for analysis of trends of public expenditure on social services is from 1976-77 to 2005-06 (15 years of pre reform period [from 1976-77 to 1990-91] and 15 years of post reform period [from 1991-92 to 2005-06]). The first reason for selecting this period is that – two appropriate divisions can be done for before and after economic reform, and second is that before 1975-76, in budgetary calcification

* There are two types of methods for the Purpose of Conversion of data from current prices to constant prices, viz., GDP deflator method and Whole Sale Price Index method. Between these two GDP deflator method is widely used method that has been used. See more on Conversion of Data S P Gupta (2004) 'Statistical Methods'
the head social service has not been defined properly. Time periods taken for impact analysis are 1981, 1991 and 2001 because most of the education and health indicator are available only in census data.

1.9.4 DATA SOURCE

The study is based on secondary sources of data. The required data has been obtained from following sources: Indian Public Finance Statistics, RBI Bulletin, Education for all, Selected Educational Statistics, Health Information of India, Human Development Report (UNDP), National Human Development Report (2002), CSO, and Economic Survey.

1.9.5 SELECTION OF THE VARIABLES:

Appropriate variables are used to describe the status and infrastructure of education and health in the states. The variables are described in the relevant chapters.

1.10 LIMITATIONS OF THE STUDY

To analyse the pattern of public expenditure on social services, the present study has included plan and non-plan expenditure of revenue and capital accounts on social services; loans and advances have been excluded. The sectors of housing, labour and employment, urban development, social security and welfare, nutrition, natural calamities, welfare of scheduled caste and scheduled tribes and other backward castes etc., have been excluded, from the study of the impact of public social services’ spending. Educational expenditure as a whole is considered and various heads within education such as, education expenditure on primary, secondary and higher education etc., have not been considered for the analysis. The study does not analyse government programmes / schemes relating to social sector development. Also the allocation of central government expenditure to individual states and private and household expenditure on social sector have been excluded from the scope of this study. The present study also ignores the intra-state disparities.
1.11 ORGANISATION OF THE STUDY

The study has been structured into seven chapters. The first chapter deals with the meaning of social sector, different approaches to social sector, literature review, objectives, hypothesis, methodology and data source. The Second chapter is devoted to examining the trends of public expenditure on social services. Third chapter deals with construction of education infrastructure index (EII) and education status index (ESI). It also studies the relationship between public expenditure and EII & ESI. The fourth chapter has been devoted for construction of the health infrastructure index (HII) and health status index (HSI) and it also studies the relationship between health expenditure and HII & HSI. The fifth chapter examines the impact of public social services expenditure on HDI. Sixth chapter focuses on the impact of social services expenditure on economic development and also poverty. The final chapter consists of summary and conclusions, which emerged from the study.

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