Chapter 1

Introduction

1.1 Statement of the Problem

Education is a process whereby new knowledge is transmitted as acquired by man. But the new knowledge must be perceived and it must alter future behavior patterns for the betterment. Education promotes economic growth and development mainly in two ways: through changing the attitudes relevant to economic development and by acting as an economic output (Kothari and Panchamukhi, 1980). Economic growth and development depends to a large extent upon alterations in human behavior patterns because man is the primary catalyst in the productive process through managerial ability. He (the labourer) is also a key factor in production through his physical labour. The economic value of education in the process of economic development is broadly assessed by the resources involved in the formation of human capital and the corresponding increments in productivity of labour force. This is what the present study aims to do. The study tends to highlight the role of education in human capital formation. This chapter is the first chapter of the study. The present chapter has been organized into eight sections. First section aims to give an idea of the problem under consideration. The next section gives objectives of the present study while the subsequent section gives hypotheses of this study. The fourth section deals with the various terms and concepts used in the study. Besides, this section also gives information about various data sources and the methodology adopted in the study. The fifth section of the
The ultimate objective of development is the welfare of the people which becomes manifest in the qualitative as well as quantitative changes that it brings about in the social, cultural and economic spheres of life (Pigou, 1956). On the basis of this objective, an important test for development may imply a decent standard of living. Moreover, in the developing countries specially like India where more than 25 percent of total population are poor (Kundu, 1991), welfare of the masses largely depend on the levels of basic needs, satisfaction in food and nutrition, water supply and sanitation, education, health and housing (Mundle, 1991).

Many thinkers have also believed that education would be one of the surest and most important means of accelerating the economic development and some like James and Benjamin (1987), have hoped that it would have a strong leveling effect on the economic structure. Because uneven distribution of income mainly originates from the unequal distribution of the skills, therefore, the expansion of education in itself could do much to reduce the inequalities in income levels. It is more plausible to argue that the spread of education will raise the income of low-income groups at the expense of high-skilled income groups. We know, indeed, that income differentials between high-skilled and low-skilled groups are markedly less in the developed countries than in
developing countries. Education has been treated as an investment in human capital, which confers benefits on individual and on society. Therefore, expenditure on education must be enhanced by the government. In addition to the direct contribution of education to increase an individual's productivity, it has been argued that education can also yield various positive external benefits in production. Static externality benefits arise when the education of an individual causes the productivity of other workers in the same generation to rise, as in the famous growth model of Lucas (1988). When dynamic externality effects arise, then the knowledge created due to the education of one generation enhances the productivity of future generations (Weale, 1992). Educated parents may enable their children to produce 'human capital' more efficiently, so that the education received by one generation can increase the human capital stock of the next generation, causing an-inter generational externality (Swift and Weisbrod, 1965 and Spiegelman, 1968).

With the conceptualization of the problems as above the present study would attempt to undertake an in depth study of positive role of education in human capital formation in context of Punjab. Further, the quality of main workers in Punjab will be examined on the basis of educational attainment levels. Employment structure of Punjab will also be an important part of our study.

1.2 Objectives of the Present Study

The study has been taken up with the following objectives:

1. To grasp the trend of human capital on employment structure of Punjab.

2. To highlight the role of education in human capital formation.
3. To examine the criticality of human capital in the present era of globalization.

4. To examine the human capital base of Punjab’s workforce with reference to education.

5. To find the inter-district variations in human development in Punjab.


7. To suggest some policy implications regarding the issue.

1.3 Hypothesis of the Study

The study has been taken up with the following hypothesis:

1. Human development leads to human capital formation.

2. Education has a key role in human capital formation.

3. Over the period of time 1981-2001, there has been development of education in Punjab leading to human capital formation.

4. Globalization and development has led to occupational shift from primary sector to secondary and tertiary sectors in Punjab over the period 1981-2001.

5. District-wise variations in literacy rates, teacher-pupil ratio and in other important indicators of education are present.

6. Districts with high literacy rates are accompanied by low percentage of workers in agriculture and higher percentage of workers in industry and service sectors of the state and vice-versa.
1.4 Terms and Concepts, Data Sources and Methodology of the Study

Various technical terms have been used in this study. In order to have a clear grasp over the different aspects of the study, it is imperative to make the meanings of these terms clear. The following are the meanings of these technical terms:

1.4.1 Human Development Index (HDI): The Human Development Index (HDI) is a composite index of human development in education, longevity or health and in access to opportunities measured in per capita incomes. This index is calculated with the present status of districts in these parameters related with certain absolute achievement positions or some desirable achievement positions. This index is a measure of how far a district has traveled, from a minimum level of achievement and the path still left to travel.

The index is calculated by the following formula:

$$\text{HDI}_{ij} = \frac{\text{Target}_j - \text{Value}_{ij}}{\text{Target}_j - \text{Min}_j}$$

- $\text{HDI}_{ij}$ = Index of deprivation for the $i_{th}$ district for the $j_{th}$ criterion.
- $\text{Target}_j$ = This is the maximum achievable target for the $j_{th}$ criterion (for example, it is 100 percent for literacy).
- $\text{Value}_{ij}$ = This is the value of the $i_{th}$ for the $j_{th}$ criterion.
- $\text{Min}_j$ = This is the minimum value for the $j_{th}$ criterion (it is 0 percent for literacy).
1.4.2 **Education Index (EI):** United Nations Development Programme (UNDP) uses literacy rate as one of the two parameters. Recently it has changed the second indicator from mean years of schooling to school enrolment. Both these are used as parameters for the education index.

Literacy denotes the most basic and essential criterion. Literacy levels are available for each district from the Census of India, 2001 and these figures are used for the construction of education index. Literacy rate for the population was calculated as percentage share of all literates in a district over the population of people above 6 years in the district.

For the target maximum figure for the purpose of calculating the index of development in literacy, we use 100 percent. The minimum rate is 0 percent.

The second component of education index is the combined school level enrolment. Enrolment rates have been derived from the data on enrolled children from the Directorate of Public Instruction (DPI Schools) and estimated number of children in school going ages from population projections and age group based on Census of India 1991 and 2001. The target maximum for this figure is difficult to assess, since the age group 6-14 includes ages at which many children would have passed out of the school after fully completing it and would, therefore, not be counted. However, as we have no estimates to arrive at an acceptable figure for a target maximum for calculating the index of deprivation in school enrolment, as we use 100 percent as the maximum and 0 percent as the minimum value.

The two indices of literacy and school level enrolment were combined to get the value of education index. These indices were combined in a
weighted average, with 2/3 weight for literacy and 1/3 weight for all children in schools (enrolment ratios). A higher weight for literacy was taken to give importance to this most essential criterion and keeping in mind the problems of data in enrolment figures.

1.4.3 Health Index (HI): Life expectancy is the single criteria used by the UNDP to assess health status. The Census of India has released fertility tables and estimates for Infant Mortality Rates (IMR) for 1991. The Census fertility tables for 1991 permit us to arrive at indirect estimates of life expectancy at birth for the districts for 1991. The indirect estimates have been arrived at using the methodology applied by the Census for calculating mortality tables for 1981. These estimates are subject to corrections, after final fertility tables are released and Census publishes estimates for life expectancy based on this data. Census has also released estimates for child mortality. 

The life expectancy at birth has been calculated using Census figures for fertility data on total number of children born and surviving of ever married woman, given by Census. Based on these data IMR is calculated using the methodology suggested by the Census of India. Motpak Lite, a UNDP’s programme for demography, was used for calculations. While the estimates for IMR match well with the 1991 Sample Registration Scheme (SRS) estimates, they are subject to modifications, due to need to smoothen the population tables. Thus, the estimates may become modified, but for the purpose of comparative analysis, and a fairly accurate picture of longevity, the figures are very useful. 

Estimates of life expectancy for the districts from 1981 ad 1991 were projected, and then sensitized to regional and state life expectancies
projected by SRS to get estimates of life expectancy for 2001. For the maximum
target, a figure of 85 years was taken, and for the minimum value, a figure of
25 years was applied to calculate the Health Index.

1.4.4 Income Index (YI): The UNDP uses ‘adjusted per capita income for
countries’ to calculate the income index. For Punjab’s income index, a same
criterion has been used. For district level incomes, latest estimates have been
calculated and provided by the Directorate of Economics and Statistics,
Government of Punjab.

Estimates of per capita incomes alone do not give a idea of the distortions in
distribution or the levels of poverty in the districts or the depth of deprivation of
the poor. UNDP used Aitkinson’s formula to adjust their incomes for the
income component of HDI. It is based upon marginal utility of incomes. This
adjustment reduces the impact of very high incomes in some districts, and
makes districts more comparable to each other to assess relative levels of
achievement in incomes. However, the problem with this method is that it
discounted incomes above the minimum level quite drastically. The UNDP now
uses a different method of adjusting poverty. The same method has been used
to discount incomes for district human development indices.

Income is discounted by using the following formula:

\[
\text{Income Index} = \frac{\log Y - \log Y_{\text{min}}}{\log Y_{\text{max}} - \log Y_{\text{min}}}
\]

Where \(Y\) = Income of the district

\(Y_{\text{min}}\) = Minimum income

\(Y_{\text{max}}\) = Maximum target income
For a minimum income level, we took the minimum per capita income required to be above poverty line.

The three indices of development i.e. education index, health index and income index are then combined in a simple average to get the Human Development Index.

1.4.5 Economic Activity: Any activity resulting in production of goods and services that add value to national product is considered as an economic activity. Such activities include production of all goods and services for market (market activities), i.e. production for pay or profit, and the production of primary commodities for own consumption and own account production of fixed assets, among the non-market activities. (Census of India, 2001).

1.4.6 Work: Work is defined as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. It even includes part time help or unpaid work on the farm, family enterprise or in any other economic activity. (Census, ibid).

1.4.7 Workers or Employees: Persons who are engaged in any economic activity or who despite their attachment to economic activity have abstained for reason of illness, injury or other physical disability, bad weather, festivals, social or religious functions or other contingencies necessitating temporary absence from work constitutes workers. Unpaid helpers who assist in the operation of an economic activity in the household farm or non-farm activities are also considered as workers. (NSSO 61st Round, Report No. 515, p.12).
1.4.8 **Main Workers:** A person who has worked for 6 months or more during the last one year is termed as ‘Main Worker’. Even if a person has worked in different capacities during the last one year, whether with or without break, all the spells of economic activity are taken into consideration for calculating the total period to classify the worker as main or marginal worker.

1.4.9 **Marginal Worker:** A person who has worked for less than 6 months (may be even for one day) during the last one year is termed as ‘Marginal Worker’.

1.4.10 **Non-Worker:** A person who has not worked at all during the last one year is termed as ‘Non-Worker’.

1.4.11 **Labour Force:** Labour force of a country consists of all those in its working age population, who are employed or seeking employment.

1.4.12 **Work Force:** Work force consists of all those persons who are actually working, whether in the formal or in the informal sector, i.e. labour force less unemployed.

\[
\text{Work force} = \text{Labour force - unemployed} \\
\text{Unemployed} = \text{Labour force - work force}
\]

1.4.13 **Work Participation Rate (WPR):** Work participation rate is defined as the percentage of total workers to total population.

\[
\text{Work Participation Rate} = \left( \frac{\text{Total Workers}}{\text{Total Population}} \right) \times 100
\]
1.4.13 **Female Work Participation Rate (FWPR):** Female work participation rate is defined as the percentage of total female workers to total female population.

\[
\text{Female Work Participation Rate} = \frac{\text{Total Female Workers}}{\text{Total Female Population}} \times 100
\]

1.4.14 **Usual Status Considering Principal and Subsidiary Status taken Together:** Usual status approach with a reference period of 365 days preceding the date of survey. This is written as usual status (Ps+Ss). According to the usual status (Ps+Ss), workers are those who perform some work activity either in the usual principal activity status or in the subsidiary activity status.

1.4.15 **Usual Principal Activity Status (Ps):** The usual activity status relates to the activity status of a person during the reference period of 365 days preceding the date of survey. The activity status on which a person spent relatively longer time (i.e. major time criterion) during the 365 days preceding the date of survey is considered as the principal usual activity status of a person.

1.4.16 **Usual Subsidiary Activity Status (Ss):** A person whose principal usual status is determined on the basis of the major time criterion could have pursued some economic activity for a relatively shorter time throughout the reference period of 365 days preceding the date of survey or for a minor period, which is not less than 30 days. The status in which such economic activity is pursued is the subsidiary economic activity status of that person.
1.4.17 **Primary Sector:** The primary sector of the economy extracts or harvests products from the earth. The primary sector includes the production of raw materials and basic foods. Activities associated with the primary sector include agriculture (both subsistence and commercial), mining, forestry, farming, grazing, hunting and gathering, fishing and quarrying. The packaging and processing of the raw material associated with this sector is also considered to be a part of this sector. In developed and developing countries, a decreasing proportion of workers are involved in the primary sector.

1.4.18 **Secondary Sector:** The secondary sector of the economy manufactures finished products. All of manufacturing, processing and construction lie within the secondary sector. Activities associated with the secondary sector include metal working and smelting, automobile production, textile production, chemical and engineering industries, aerospace manufacturing, energy utilities, engineering, breweries and bottlers, construction and shipbuilding etc.

1.4.19 **Tertiary Sector:** The tertiary sector of the economy is the service industry. This sector provides services to general population and to businesses. Activities associated with this sector include retail and wholesale sales, transportation and distribution, entertainment (movies, television, music, radio, theater etc.), restaurants, clerical services, media, tourism, insurance, banking, healthcare and law. In most developed and developing countries, a growing proportion of workers are engaged in tertiary sector. In the U.S., more than 80 percent of the total labour force is engaged in tertiary sector.
1.5 **Statistical Tools:** Various statistical tools have been used to check the authenticity of the work.

1.5.1 **Arithmetic Mean:** Arithmetic mean of a given set of observations is their sum divided by the number of observations. Symbolically,

\[
\bar{X} = \frac{1}{N} \sum_{i=1}^{N} X_i
\]

The study is based on secondary data. The major sources of the data are Census Reports of India for the period 1981, 1991 and 2001. Besides, in order to study the aforementioned objectives, we have used various reports and documents of Indian and Punjab government, various official reports of the same, data sources of various rounds of NSSO (National Sample Survey Organization) and other authentic works of various scholars.

In the present study, the scenario of human capital formation has been studied taking Human Development Index (HDI) as an indicator. This is because variables taken in consideration while calculating HDI are exactly the same those are supposed to be the most significant in human capital formation. Therefore, it is safe to take these variables as determinants of human capital formation. Further, the role of education has been examined in human capital formation by applying Correlation Test.

1.5.2 **Coefficient of Correlation:** The coefficient of correlation is a statistical device which helps us in analyzing the covariation of two or more variables. When the relationship is of quantitative nature, the appropriate statistical tool for discovering and measuring the relationship and expressing it in brief formula is correlation. Symbolically,
\[ r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{(N \sum X^2 - (\sum X)^2)(N \sum Y^2 - (\sum Y)^2)}} \]

Where \( r \): Coefficient of Correlation.

1.6 Relevance of the Study

There has never been restraint on the part of the economists through ages as to find out the factors of economic development. Smithian economists enquired the nature and causes of the wealth of the nation. The mercantilists were of the view that foreign trade is the magic wand for growth. Economists of the eighteenth century concentrated on capital formation as the way that an economy can grow. Marx formulated a labour theory of value for growth. Development of entrepreneurial ability was the key for development in Schumpeter’s writings. Prevalence of wide spread poverty and a large gap between the high and low income groups all over the world, attracted the attention of policy makers to rethink on the ‘trickle down theory’ as a growth engine. Though the level of per capita income of various countries in the world increased by manifold, still then, the magnitude of illiteracy and the people living in poor sanitary conditions, lacking all sorts of basic human necessities has swelled as well. It has been a consensus among a large chunk of economists that the growth in GDP (Gross Domestic Product) has never trickled down to the masses. Rather, the unanimous agreement has been to address the basic human capital development and poise for a growth model with a
human face. It was only in the twentieth century that the term human capital has been considered as a growth engine and has been developed in more systematic manner. This approach defines people as a capital asset which yields a stream of economic benefits over their working life.

During the past two decades or so, our perspective of the goals of development has gone under a sea change. Income levels, growth and distribution of income, are no more the sole objectives of development. Education, health and quality of life have become equally respectable objectives of development. Significantly, education and health are not only taken to be the end objectives of development, they are universally recognized as crucial means to development as well. Human capital is already surging ahead to replace physical capital as the sole mover of the growth process. This is what the study tends to highlight. In the age of knowledge revolution, a worker's intellectual capabilities are no less important than the quality of the machines installed, quality of raw materials used or any combination of the two.

Although human capital is a composite concept that encompasses, inter alia, educational attainment and health status of the workers, yet in the literature, education has reigned supreme as its most reliable surrogate. So, nothing will be wrong if we use education as a surrogate of human capital. Indeed, education is highly reflective of human capital. So, we have used educational attainment levels to measure human capital base of main workers in the state.

Investment in human capital can take many forms such as informal education, on-the-job training, health improvements, learning-by-doing and so
Formal education, however, has usually been regarded as making a fundamental contribution to human capital formation, which can be complemented but not readily substituted, by other forms of human capital investment. All this leads to a strong human capital base. Production relevant skills are assumed to be embodied to a greater extent in those individuals who have greater quantity and quality of education, with a skills hierarchy rising from the primary level education to the tertiary level. Thus, while focusing on education, as a form of human capital, if it does not fully capture the human capital formation process, it is necessarily likely to capture one of the most important components.

It needs hardly to be emphasized that human capital, most ostensibly in form of education would be an inescapable input for the future of the developing economies. The emerging technology institutional human interfaces are likely to defy the frontiers of ordinary human capabilities. As a part of world economic system, the Indian economy will also have to keep pace with the fast and vastly changing technologies. New products and new varieties, expanding and complicated information systems, new market strategies, new services are some examples. A typical worker of tomorrow has to be markedly different from his predecessor of yesterday just as production and marketing tomorrow would demand a vastly different orientation and market intelligence than say thirty years back. The worker is now operating in a totally different and diffused economic regime. His choices are plentiful but the scope for erring is no less plenteous. He is not only to keep his eye on what is happening in the domestic product and service markets, but has also to read, assimilate and
interpret the commercial happenings abroad. Tomorrow's worker will have to wear a global outfit. He has to be much more than himself.

The implications of the recent changes in economic policy aimed at economic liberalization, decontrol, globalization and the resultant free market economy should be analyzed in the context. It is a welcome change and an overdue departure from the torturous command economy with suffocating control, tariff barriers and high-cost-low productivity syndrome in a highly protected domestic environment that strifled growth. No country can survive without generating economic surplus and sustainable growth to finance its growing needs both on revenue and capital accounts, including those for human capital. Rich and poor countries compete in the global market as unequal partners. If developing countries are to compete on more equal footing, they will have to upgrade their human capital formation system. Developing countries will have to make huge investments in human capital and technological development.

All over the world, nineties have brought social, economic and technological changes. The systems are being overhauled and those found outdated are being left out. These policy measures and attempts at liberalizing the economy has suddenly made our nation to look more desperately for effective human capital formation. Economic growth is a complex process that needs much more than physical capital which is nothing but human capital.

In this regard, Professor T.W. Schultz (1964) has given from methods to develop human resources:

i) Availability of that kind of medical facilities which influence anticipated life, energy and enthusiasm.
ii) Extent training.

iii) To organize education on primary, secondary and higher stages and

iv) Availability of educational facilities to adult workers.

Therefore, the study has an added importance as it puts a light on two critical issues of Punjab. One is human capital base of its workforce and the other is emerging employment structure of its main workers.

Capital issues of new companies are over-subscribed if they are floated by the competent persons because investors attach more importance to human ability rather than other factors. Now the times have come when the saying ‘survival of the fittest’ will work. This change has to be managed successfully because if obsolete machinery is dangerous obsolete people are disastrous. Hence there is an urgent need to create human capital. Now it depends upon the nations how they use their human resources. They develop them or not, it entirely depends on their response. If they develop their manpower, then there will be consolidation, growth and innovations. Otherwise indifferent units will have to face decay. The following figure gives the current globalized environment and possible outcome resulting from their response.

**Figure: 1.1**

*Prevailing Global Environment*
In the figure 1.1, technological changes, trade liberalization and market competitiveness are prevailing. If the countries develop their human resources by providing them with education and training then there will be innovation and growth but if they will remain indifferent to this economic change and do not develop necessary skills in their workers, they will be ruined and decayed.

1.7 Synoptic View of Punjab with Reference to Education

The state of Punjab occupies an extremely important place in India. It is the country’s largest grain producers of India and is honored as ‘bread basket of India’. It plays a crucial role in defending India against military aggression. But above all this, Punjab has carved a niche for itself in the world economy by transforming its traditional agriculture into modern farming systems with unprecedented speed. It is one of the rarest success stories in the field of economic development. This has been made possible by the untiring efforts of its people. The Punjabis never look back. They do not wait for opportunities to design anything. So, the Punjabis went through army discipline and became very successful farmers and a potential entrepreneurial class.

People don’t progress because they do not want more goods and services. They have a state of contentment with their lot that is very disastrous for economic development. Because economic development demands active and whole-heartedly participation of the people. This pathetic contentment on the
part of the people is traceable to number of reasons most of which are connected to social and religious structure of the community, its traditional values and cultural patterns. To enable the human factor to play its role in economic development, this pathetic contentment has got to be broken and replaced by restlessness, discontentment with current economic status and conditions, desire for better economic conditions and higher level of quality of life.

The Punjabis have a distinct thinking. They are progress-loving, forward looking, less tradition bound and less conservative than various other communities inhabiting Indian sub-continent. They are open-minded and accept new ideas readily. Their enthusiasm separates them from others. They are innovative and hard-working. They love good things of life, therefore strive hard to achieve economic prosperity. They are generally not accommodative of poverty. The economic prosperity of Punjab to a very large extent is due to this way of life of Punjabis.

Attitude of Punjabis towards work is different from others. They don't shirk hard work. They are proud and self-reliant. They are accustomed to a certain standard of living and they would try their best to maintain that standard. Backward looking traditions constrain development. But Punjabis do not suffer from any such constraint. Further there is strong tendency to earn well and eat well instead of indulging in thrift and saving. These attributes of Punjabis have made Punjab famous all over the world.

But there is a gloomy side of the picture as well. Development in Punjab is basically agro-based. High per capita income is also attributable to strong agricultural base of the state. But with the upcoming of new economic
reforms, this strong agricultural base has been shattered. Alternative employment opportunities i.e. industrial and tertiary sector require educated and skilled workers which is nothing but a strong human capital base. This whole phenomenon has been examined in context of Punjab. Education is the key to strong human capital base. But the state has a dismal record when it is compared to other developed states of India like Kerala which has 90.92 percent literate population against that of Punjab which has only 69.95 percent literate population according to Census 2001. The study deals with the educational developments in the state over the period of time 1981-2001. The literacy rate in 1981 was only 43.37 percent comprising 51.23 percent male literacy and 34.35 percent female literacy. The corresponding figures for rural and urban literacy were 35.20 percent and 55.63 percent in the same period. In 1991, the situation has not changed very much. The total literacy was 58.51 percent comprising 65.66 percent male literacy and 50.41 percent female literacy. This decade recorded 52.77 percent rural literacy and 72.08 percent female literacy. Some improvements are visible in the year 2001 which recorded male and female literacy 75.63 percent and 63.55 percent respectively. But still there is a long way to go. Because the study also aims to grasp the changes in employment structure of the state over the period 1981-2001. Therefore, it is imperative to take into consideration the status of vocational education as well. Vocational education is supposed to be more relevant to labour market. The state had 27 Industrial Training Institutes in 1970-71 which has risen to 49 in 2005-06 but their actual intake shows a decline which was 8214 in 1970-71 but came down to 7250 in 2005-06.
It seems that students are not interested in acquiring vocational education and training within the state as the quality of training provided in these institutes is nowhere up to mark. The curriculum and infrastructural facilities are obsolete. However, the issue has been discussed in detail in the last chapter of the study. After discussing the major developments in education in the state, the educational level of the main workers has been examined in order to bring out a broad picture of human capital base of the workers.

Both Census and NSSO data corroborate the fact that about one-third of the total main workers are still illiterate in the state. With the introduction of new economic reforms in the economy, this is a common perception that educated and skilled workers will be in a better position as compared to their uneducated counterparts. Employment opportunities will be more to trained and multi-skilled workers and the illiterate and workers with rigid or low skills will be the worst sufferers. But Punjab economy continues to be an agricultural economy. This has serious implications for its employment structure as well. The post-reforms period has witnessed a fall in agriculture’s share in both State Domestic Product (SDP) and employment structure. Industry and especially, the tertiary sector are emerging as the major employers. May it be any kind of employment i.e. agriculture i.e. agriculture, industry or tertiary sector. The education holds the key. This has become more relevant in today’s globalized economy. Low level of education among the workers reflects poor human capital base and vice-versa. It is with this background, the study has been carried out to examine the human capital base of Punjab’s main workers with special reference to education. HDI has been bifurcated into three parts i.e. Education Index (EI), Health Index (HI) and Income Index (YI) for all the 17
districts of Punjab which were available in Human Development Report, Punjab, 2004.

1.8 Organization of the Study

A brief introduction to the chapters is being presented here in order to obtain a broad picture of the present study. For analytical convenience and clarity, the study has been divided into six chapters. The first chapter gives the introduction. It gives an idea of the objectives with which the study has been taken up. The hypotheses to be tested, various terms and concepts used, data sources and methodology adopted to test the hypotheses and relevance of the study are also given in this chapter.

The second chapter presents the review of existing literature to provide a perspective to the present study and to rationalize the methodology adopted. Chapter 3 gives a picture of the human capital base of Punjab. First, a macro level picture of India in form of state level data has been given. Then, on state level, two important components of human capital i.e. education and health indicators have been used to put a light on the human capital base of the state. Further, a district-wise data has been given to analyze the existing situation more concretely.

Chapter 4 deals with the major developments in the field of education over the period 1981-2001. Both general and vocational educational indicators are given in the chapter. A NSSO based human capital categorization has been given in this chapter. Also the quality of Punjab’s main workers has been examined with reference to their education attainment levels. Both Census and NSSO data sources are used to grasp the trend of human capital
base of the workers in the state. Educational attainment levels of the main workers have been used to examine their human capital base.

Chapter 5 of the study tends to put a light on the employment structure of Punjab and the major changes that have been brought about by the globalization. A nexus has been maintained between literacy rates and employment structure. For this, a comparative analysis has been carried out between the employment structures of Kerala i.e. the most literate state, Bihar i.e. the least literate state and that of Punjab. The same phenomenon has been replicated on district-wise data of Punjab for 2001. The employment share of agriculture has been falling in favor of industrial and tertiary sectors. But still about 39.4 percent of the total workers in Punjab are engaged in agriculture. Further, the reasons for this shift of workforce are also highlighted in this chapter. The last and sixth chapter of the study concludes the whole study and gives policy implications.