CHAPTER II

CONCEPTS AND RESEARCH DESIGN

The preceding chapter, intending to serve as a background to the present study, provided an overview of the process of development with reference to the Indian situation, broad features of economic structure of the provincial economy of the Himachal Pradesh, district economy of Bilaspur and its constituent blocks, review of related studies, and the objectives underlying the present study. The present chapter is devoted to the discussion of the various concepts used in this study, selection of area and sampling procedure of households, nature of data and tools of analyses used for investigation.

II.1 Concepts

(i) Progressive and Less Progressive Areas:

It is generally argued that different countries pass through some phases during development process, and any country can be deemed to have reached a particular stage of development on the basis of certain identifiable characteristics. Thirlwall says, "The simplest stage theory is the sector thesis of Fisher and Clark, who employ the distinction between primary, secondary and tertiary production as a basis of a theory of development....
Naturally enough in this schema, the less developed countries get identified with primary production, the more developed countries with the production of manufactured goods, and the mature developed economies with a high percentage of their resources in the service sector.\footnote{1}

The above mentioned structuralist approach is no doubt superior to the traditional per capita income approach of classifying the various countries into 'mature', 'developed', and underdeveloped/developing economies. But it leads us nowhere when applied to different regions of a national or a provincial economy inasmuch as the relevant data of identifiable characteristics are often not available. The problem gets further aggravated when a distinction has to be drawn between progressive and less-progressive areas in a developing economy where the pace of development does not reflect clearly identifiable structural changes. This was the precise problem faced in identifying the progressive and less-progressive areas for the purpose of present study.

In order to overcome this problem it was thought desirable to use some indicators of development relating to economic activity of the working population, agricultural development, extent of deprived sections, literacy, and socio-economic infrastructure.\footnote{2} The block which was better placed in terms of these indicators (see Table I.4) was
categorised as progressive and the block which appeared to be far behind was termed as less progressive block.

(ii) Assets:

Everything that the household owns and which has a money value is classified as an asset. In the present study household assets have been divided into two categories, viz. (a) productive assets, and (b) unproductive assets (i.e., household durables). All household assets such as land, livestock, poultry, rented out buildings, etc. are productive assets. These provide gainful employment to the family human labour and add directly to the household income. The household durables constitute those assets which have no direct effect on household income but they indirectly help to raise the efficiency and the level of living of the households.

(iii) Household:

The household is the ultimate unit for sampling purpose for the present study. It is defined as a group of persons, at least some of whom are inter-related who normally live together and generally share a common kitchen. A single person is treated as a household provided he or she maintains a kitchen.
(iv) Household Income:

Household income includes current income of all members of household from all sources, in cash and kind, during the reference period of twelve months preceding the data of data collection. It consists of both farm and non-farm income. For deriving net income from agriculture and self-employment in business, profession and service, depreciation charges are deducted from gross income.5

(v) Household Consumption Expenditure:

Consumption implies utilization of goods and services to satisfy the human wants. For the purpose of this study consumption expenditure implies all expenditure incurred by a household exclusively towards its non-productive domestic consumption, thus excluding all expenditure towards the enterprise activities of the household, transfer payments in kind like loans advanced, charities and gifts.6

(vi) Literacy:

Literacy is defined here as the ability to read and write with understanding in any language and a person who can merely read but cannot write is not a literate.7

(vii) Operational Holding:

All land which is wholly or partly used for agricultural production and is operated as one technical unit
by one person alone or with others, without regard to the title, legal form, size or location. If the whole area of a holding is not put to agricultural uses, it has not been regarded as an operational holding. The term technical unit means a unit which is under one management and has the same means of production.\(^8\)

(viii) Land Holding Groups:

In the present study a household with a land holding upto 1.00 hectare of land has been termed as marginal farming household. A household having between 1-2 hectares of land has been taken as small farming household. A household having land between 2 to 4 hectares is considered as a medium farming household. Finally, a household with more than 4 hectares of land has been placed in the size class of large farming households.\(^9\)

(ix) Engel's Laws:

The average behaviour of consumption expenditure changes fairly regularly, but the averages do not tell all the story. Within each income class, there is spread around the average. Poor families must spend their income on the necessities of life. As income increases, expenditure on many food items goes up. There are, however, limits to the amount of extra money that people will spend on food when
their income rise. Consequently, the percentage importance of expenditure on food items declines as income increases.\textsuperscript{10}

\textbf{(x) Sample and Sampling Unit:}

In order to collect data regarding characteristics of a group of individuals or objects, it is often impossible or impractical to observe the entire group, especially when it is very large. Instead of examining the entire group, called the population or universe, one examines a small, but representative part of the group called a sample.\textsuperscript{11}

\textbf{(xi) Standard Mandays (MD):}

The family human labour days spent in different activities have been converted into standard mandays by attaching proper co-efficient of efficiency.\textsuperscript{12} Eight working hours of an adult male in a day have been considered equal to one working day. The working days of women, children and old persons have been converted into standard mandays (MD) by attaching proper co-efficient of efficiency. One woman day (WD) is presumed to be equivalent to 0.75 MD and one child day (CD) is considered equivalent to 0.50 MD. One old man's working day is considered equal to one child day. In the present study both family and hired-in-labour has been taken into account.
(xii) Consumer Units (C.U.):

For the purpose of studying the household consumption of foodgrains, an understanding of the distribution of standard consumption units (C.U.) they contain is more helpful than the distribution of households by the number of persons in each family. With this idea, the distribution of households has been done in terms of consumer units for the purpose of analysis of disparities in household consumption expenditure. In order to calculate consumer units for each household the calorie consumer units for each household the calorie consumption scale recommended by C. Gopalan and Others of National Institute of Nutrition has been followed here. This scale differs for sedentary, moderate and heavy workers. Keeping in view the fact that our study relates to agricultural households, the conversion scale in respect of heavy workers has been used here. Accordingly:

- Adult Male (Heavy Worker) 1.6 Units
- Adult Female (Heavy Worker) 1.2 Units
- Adolescents: 12 to 18 years 1.0 Unit
- Children: 9 to 12 years 0.8 Unit
- Children: 7 to 9 years 0.7 Unit
- Children: 5 to 7 years 0.6 Unit
- Children: 3 to 5 years 0.5 Unit
- Children: 1 to 3 years 0.4 Unit
As per the above scale, a family consisting of father and mother doing heavy work and three children aged 14, 8 and 2 years will comprise of 4.9 (i.e. 1.6 + 1.2 + 1.0 + 0.7 + 0.4) consumer units.

II.2. Sampling Procedure

For the purpose of study, district Bilaspur was selected out of the twelve districts of Himachal Pradesh. Although the choice of this district was essentially purposive in nature, it was backed by two a priori considerations. In the first place, the district falls in the mid-hill zone—the zone which is inhabited by the highest proportion of population of this state. As such the results of investigation can be fairly applicable for a vast majority of population. Secondly, despite being located in the mid-hill zone this district is characterised by hills as well as wide valleys. The areas which fall in valleys have fertile land, better irrigation facilities and greater infrastructural network in contrast to their hilly counterparts. As such certain areas of the district are more progressive in terms of development as compared to the others. As has been stated earlier in Chapter I the choice of development blocks was governed by certain indicators of socio-economic development. Accordingly, out of three, two blocks were selected. Ghumarwin block happened to be the
most progressive whereas Jhandutta block came out to be least
developed or less progressive.

At the second stage all the 27 Panchayats of Ghumarwin
development block as well as 31 Panchayats of Jhandutta
development block were arranged in an ascending order
according to their respective size of population. Four
panchayats, two from each development block, i.e. Ropa and
Kot from Ghumarwin block and Kalol and Amarpur from Jhandutta
development block were selected randomly. At the third stage
the lists of all the households according to their respective
size of holdings in the four selected panchayats were
prepared. The households were categorised into marginal,
small, medium and large holding groups. The total number of
households came to 840 in progressive areas and 815 in the
less progressive areas. Finally, about 18 per cent
households from both types of areas were selected randomly in
proportion to the total number of households falling in each
holding group from out of each of the four lists. The number
of the selected households came out to 70, 40, 22 and 18 in
the marginal, small, medium and large holdings group in the
progressive areas. Similarly the number of households in the
less progressive areas came out to 76, 44, 18 and 12 in the
marginal, small, medium and large size of holdings group.
Thus a sample of 150 households each from progressive and
less progressive areas was selected for the present
investigation
II.3 Nature of Data

In order to accomplish the objectives underlying the present study, both primary as well as secondary data have been used for the purpose of investigations. The secondary data were obtained from the various published sources including those of government agencies and individuals. These have been acknowledged at appropriate places. The required primary data have been collected with the help of a pre-tested interview schedule from 300 sample households 150 each from progressive and less progressive areas.

II.3.(i) Nature of Data Collected:

The interview schedule has been used for the purpose of collecting the data in respect of households asset distribution, employment, income, and consumption expenditure. The entire data have been personally collected. The information pertaining to the family composition; literacy; occupation; quantity/number/area, value as well as the sources of household assets, i.e. land, livestock, poultry, agricultural implements, buildings, cattle sheds, furnishing articles, electrical appliances, value of equipments of households industries, machineries, etc. have been collected as it existed at the time of survey.

The data pertaining to the family labour time utilization in different activities have been collected in
terms of days. The amount of household income earned from agriculture has been collected for each agricultural season, whereas the household income earned from other sources such as services, business, wages, industries, pensions, machineries, etc. has been recorded for the month preceding the survey.

Information pertaining to household consumption expenditure, both on food and non-food items, has been collected on per month per family basis.

II.3.(ii) Analysis of Data

The primary data collected through the interview schedule were tabulated by classifying these into homogeneous categories. Appropriate tools and techniques were applied to work out the results needed for the present study. The measures applied to ascertain the inequalities in the asset distribution and consumption pattern have been discussed in the next section.

II.4 Tools of Analyses

Since the primary concern of our investigation is to examine the disparities in household assets and consumption expenditure, some measures of inequality have to be used to accomplish this task. The Lorenz curve and Ginni coefficient are two most popular summary measures for this purpose and
these have been used to explain the degree of inequality. In what follows a brief discussion of these measures has been given.

II.4.(i) Lorenz Curve:

The Lorenz curve shows the percentage of income received by the bottom x per cent of the population with x varying from 0 to 100. In Lorenz curve the size of items and the frequencies are both cumulated and taking the total as 100, percentages are calculated for the various cumulated values. If there is proportionately equal distribution of the frequencies over various values of a variate, the Lorenz curve follows the diagonal line of identical incomes. This line is called the "Line of Equal Distribution". If the distribution of items is not proportionately equal, it indicates variability and the curve would be away from the line of equal distribution. The farther the curve is from this line, the greater is the variability in series.

Atkinson highlights the importance of Lorenz curve as, "... the Lorenz curves play a key role in determining in which cases summary measures [of inequality] will agree and in which cases there is likely to be ambiguity. If we are concerned solely with comparing two distributions of income and wealth ... then the first step should be to draw the Lorenz curves." It may however be pointed out that the
main limitation of Lorenz curve is that it does not give any quantitative value of the extent of inequality.

II.4. (ii) Ginni Coefficient:

The Ginni coefficient gives quantitative value of the extent of inequality. It is used to attach some absolute measures to the degree of inequality and give some idea whether the inequality is small or large. It is just a weighted average of income levels of different people. First it may be interpreted geometrically in terms of Lorenz curve.

\[
\text{Gini Coefficient} = \frac{\text{Area between Lorenz curve and diagonal}}{\text{Total area under diagonal}}
\]

The coefficient may be seen to range from zero when incomes are equal (the Lorenz curve follows the diagonal) to one and at the other extreme (the Lorenz curve has shape). Secondly, the Ginni coefficient may be computed mathematically.

The value of the Ginni coefficient for the distribution of assets among the sample households has been calculated with the help of following formula.

\[
G(a) = 1 + \frac{1}{n} - \frac{2}{n^2} \sum_{i=1}^{n} (n + 1 - i) a_i
\]

Where, \(G(a)\) = Gini coefficient of the distribution of assets.
n = Total Population
z = Mean value of the assets
ai = Value of assets of the ith person.

The value of the Gini coefficient for the distribution of total consumption expenditure has been calculated with the help of following formula:

\[ G(c) = 1 + \frac{1}{n} - 2/z \sum_{i=1}^{n} (n + 1 - i) C_i \]

Where, \( G(c) \) = Gini coefficient of the total consumption expenditure.

n = Total population.
z = Mean value of the expenditure
Ci = Value of the consumption expenditure of the ith person.
References


3. Ibid., p. 11.

4. This definition of 'household' is more suited in our context and is different from the one used by NSSO. For latter see NSS, 25th Round: July 1970-June 1971, Number 241, Vol. III (Delhi: Controller of Publications, 1978), p. 3.


7. The same definition has been used for the purpose of 1991 Census; see, Provisional Population Totals, Himachal Pradesh, Series 9, Paper I of 1991 Supplement, op. cit., p. 8.

8. This concept has been borrowed from Report on Agricultural Census: 1985-86: Himachal Pradesh1985-86, op.cit., p. 32.

9. This grouping of land holdings is similar to the one followed in Ibid., Sec. 5.22, pp. 44-45.


15. A.B. Atkinson, The Economics of Inequality, op.cit., p. 56.

16. Dalip S. Thakur, Poverty and Inequality in Rural India, op.cit., p. 59.

17. A.B. Atkinson, The Economics of Inequality, op.cit., p. 53.