CHAPTER-IV
METHODOLOGY

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METHODOLOGY

4.1.Introduction

This chapter discusses the details of the methodology used to achieve the required objectives of the study. The chapter is divided into three main sections namely Sampling, Data and Methods. The first section discussed about the type of Sampling and technique of sampling used in the study. In the second section the type of data collected and the process of data collection are discussed in detail. The last section of the chapter deals with the description of the tools, technique, econometric model and methods used to carry out the analysis.

Socio-economic Status (SES) can be derived by using a single measure or by multiple measures by using composite variables. But instead of following the traditional method of measuring socio-economic status, multiple measures is nowadays given more preferences and considered more meaningful as it gives a better result rather than deriving the result by using a single dimension. Multiple measures of socio-economic status of a household or community or individual can be derived from numbers of factors such as occupation and educational attainment, income, possessions, housing condition, and home ownership.

The measurements of SES differ from one region to region and country to country. Traditionally, in United Kingdom, socio-economic status is measured mainly using a single variable the occupation. In the US, the Census Bureau uses a scoring regime based on occupation, monthly household income and education. In South Africa, there has always been a very high focus on income to measured socio-economic status. From earlier period several methods or scales have been proposed for classifying different populations by socioeconomic status. In India, various scales to measure socioeconomic status were also developed. Some of the socioeconomic scales in India are as follows: Rahudkar scale (1960), Udai Parikh scale (1964), Jalota Scale (1970), Kulshrestha scale (1972), Kuppuswamy (1976), Shrivastava scale (1978), and Bharadwaj scale (2001). However, social transformation and fast growing economy have rendered these scales to be ineffective in measuring the socio-economic status over the years. Moreover there are hardly attempts to study the socioeconomic status

of women. So through this study, a reliable method and technique to measure specifically the socio-economic status of women is developed by the researcher.

4.2. Sampling Design

The sampling design is the layout of the sample selection. It is very important part in the research work. Sampling can be defined in a simple way as a process of selection of units from the population to estimate the characteristic of the population in the study area.

The Multistage, Purposive and Stratified Random Sampling are used for the purpose of this study. The first stage of sampling starts with the selection of the Churachandpur district purposively with the rational that higher numbers of Kuki women are inhabitant there. In the next stage of sampling, out of the Tribal Development Blocks, three Tribal Development blocks are selected with the highest number of habitant. Thereafter, when block selection is done, the villages in the each block are stratified as village with Kuki population and village with Non-Kuki population. Villages are selected purposively with same number of Kuki village and Non Kuki villages. In the final stage the respondents were randomly drawn from the villages by using a random number table. In order to collect information about the Kuki women, the Chief or Head of each village are taken into confident and with their help the survey is conducted.

4.2.1 Sampling Procedure for the Selection of the District

There are altogether nine districts in Manipur namely Imphal-East districts, Imphal-West district, Thoubal district, Bishnupur district, Churachandpur district, Ukhrul district, Tamenglong district, Senapati district and Chandel district. From these nine districts, the Churachandpur district is selected for the study considering the fact that higher number of Kuki population inhabitat in the district. Therefore, the study is carried out in Churachandpur districts to know the present scenario of the Kuki women and to find out the differences in the living standard relative to the Non Kuki women.

The chart below shows the proportion of Kuki women population inhabiting in the entire nine districts in Manipur.
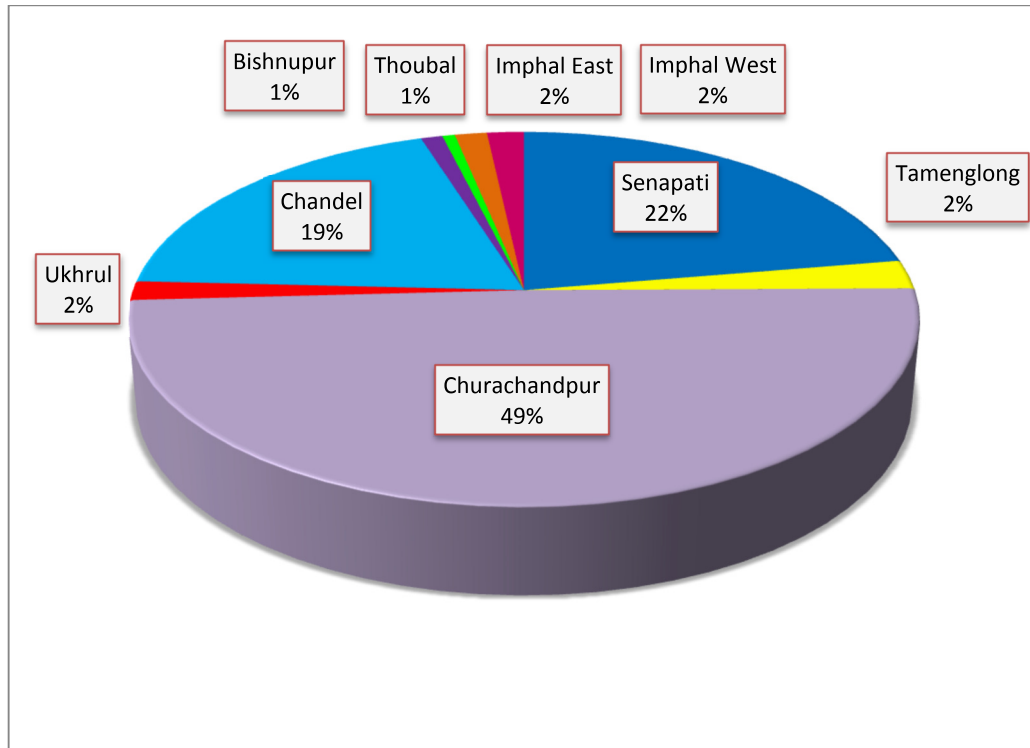

Figure-4.1: Pie chart representing the population of Kuki women in the Manipur

Source: Compiled by the Researcher from Census 2001

The Churachandpur district is divided into 5 sub-divisions, namely Churachandpur, Singngat, Thanlon, Parbung (Tipaimukh) and Henglep sub-divisions. There are altogether 10 Tribal Development Blocks. They are: (i) Tipaimukh Tribal Development Block (ii) Vangai Tribal Development Block (iii) Thanlon Tribal Development Block (iv) Henglep Tribal Development Block (v) Samulamlan Tribal Development Block (vi) Tuibong Tribal Development Block (vii) Saikot Tribal Development Block (viii) Lamka Tribal Development Block (ix) Sangaikot Tribal Development Block (x)Singngat Tribal Development Block.

4.2.2. Selection of Tribal Development (TD) Blocks and Villages

Out of the 10 Tribal Development Blocks, 3 Tribal Development Blocks namely Tuibong Tribal Development Block, Lamka Tribal Development Block and Henglep Tribal Development Block is being selected on the basis of higher habitant of the population among the blocks. There are 123 villages in the Henglep Tribal

Development Block, 74 villages in Tuibong Tribal Development Block and 40 villages in the Lamka Tribal Development Block. The villages are classified into villages with Kuki Population and villages with Non-Kuki population. And randomly, 12 villages with Kuki population and 3 villages with Non-Kuki population are selected from the 3 Tribal Development Block Blocks. So, 15 villages in total are taken under consideration during the primary data survey.

4.2.3. Selection of Sampling Units

For the sample size, altogether 300 Kuki women respondents are surveyed. From the above selected 12 Kuki villages, 100 Kuki women from each of the block will be selected randomly for the purpose of this study. Out of 300 respondents, 150(50 respondents from each three block) respondents are ever married women and 150(50 respondents from each three block) respondents are unmarried women.

From the Henglep Tribal Development Block, 25 respondents from Henglep village (12 married Kuki women & 13 unmarried Kuki women), 25 respondents from N.Ningthiching village (12 married Kuki women &13 unmarried Kuki women), 25 respondents from Molphei Tampak(13 married Kuki women & 12 unmarried Kuki women) and 25 respondents from Teijang(13 married Kuki women &12 unmarried Kuki women)

Similarly from Tuibong Tribal Development Block, 25 respondents from Zolzam village (12 married Kuki women & 13 unmarried Kuki women), 25 respondents from Teiseng villages (12 married Kuki women & 13 unmarried Kuki women), 25 respondents from Molnom village (13 married Kuki women & 12 unmarried Kuki women) and 25 respondents from Tuibong village (13 married Kuki women& 12 unmarried Kuki women).

From the Lamka Tribal Development Block , 25 respondents from Chengkonpang village (12 married Kuki women & 13 unmarried Kuki women), 25 respondents from Lingshiphai villages (12 married Kuki women & 13 Kuki women), 25 respondents from Bungmual village(13 married Kuki women & 12 unmarried Kuki women) and 25 respondents from Mata village(13 married Kuki women & 12 unmarried Kuki women).

The selections of the Kuki women from the three Tribal Development Blocks are explained below with help of the chart in Figure-4.2.
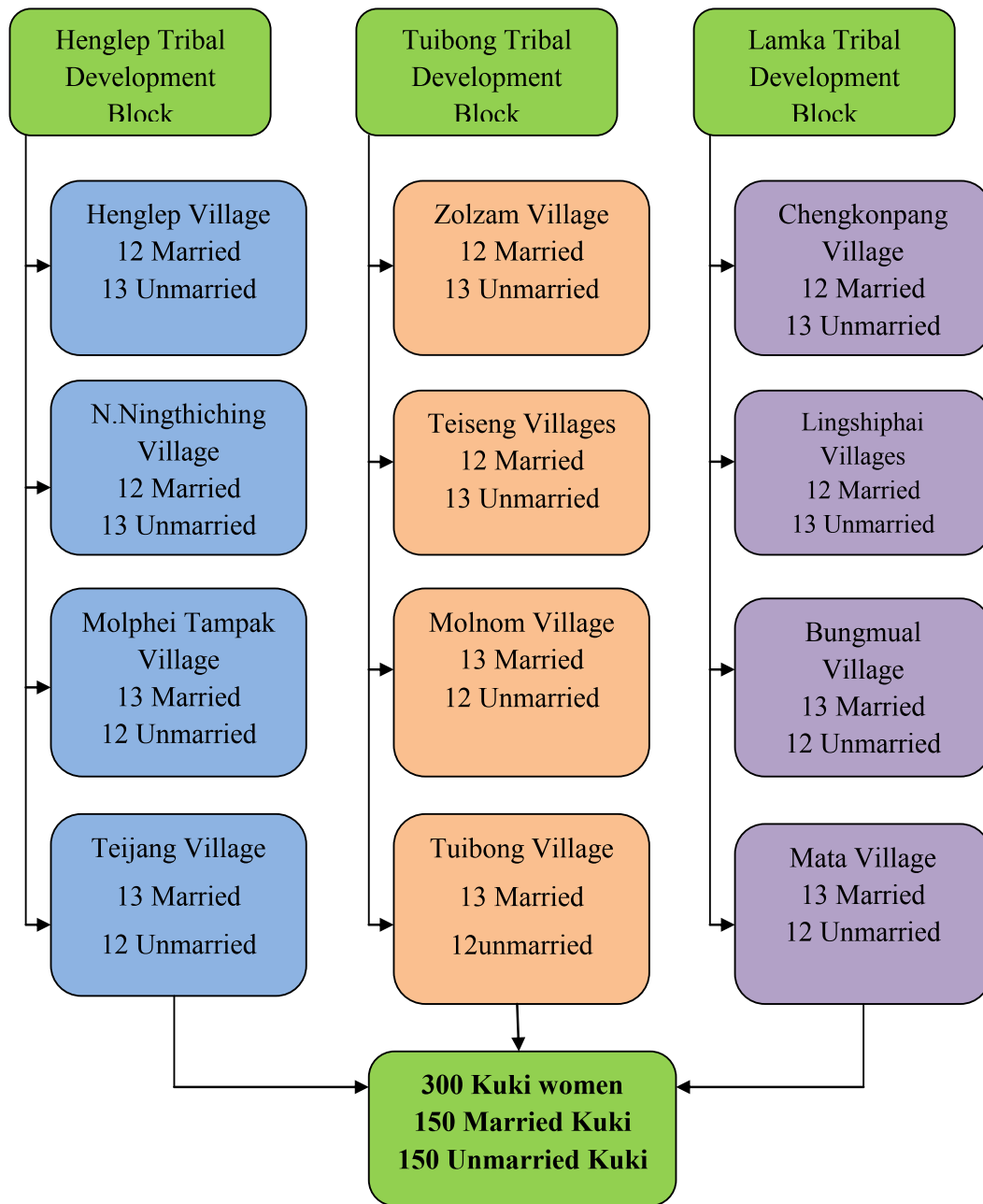

Figure-4.2: Chart representing the sample design of Kuki Women

In case of Non-Kuki respondents, altogether 200 respondents were randomly drawn from the three villages. Two villages namely Bijang village (30 married Non-Kuki women & 30 unmarried Non-Kuki women) and Torbung village (30 married Non-Kuki women & 30 unmarried Non-Kuki women) from Tuibong Tribal Development

Block and one village from Lamka Tribal Development Block namely Thingkangphai village 80 respondents (40 married Non-Kuki women and 40 unmarried Non-Kuki women) were surveyed. There was insignificant number of Non Kuki women found in the Henglep Tribal Development Blocks because of which Non-Kuki from this block were not included for the surveyed. The procedures of selecting the Non-Kuki women from the three Tribal Development Blocks are shown in Figure-4.3, with help of the flowchart.
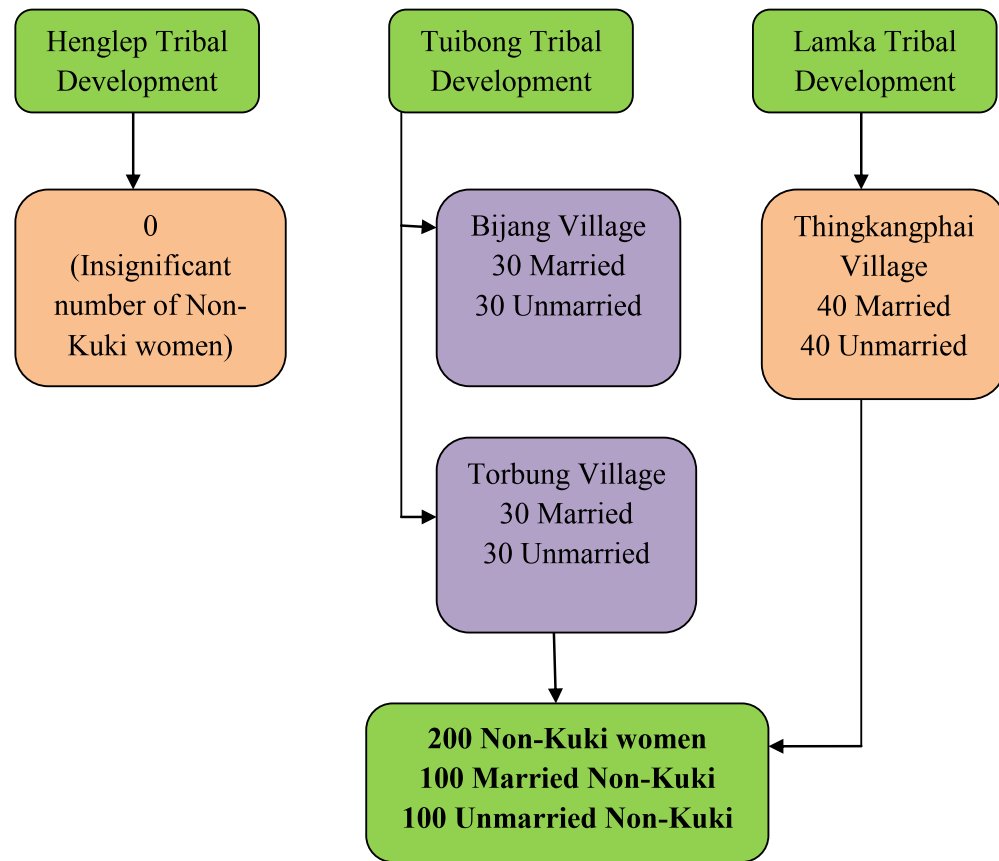

Figure-4.3: Chart representing the sampling of Non-Kuki Women

Therefore as a whole sample size, 500 respondents are surveyed for this study. Out of which, 300 respondents are Kuki women and 200 are Non-Kuki women. The whole structure of sample design of the study is presented graphically in figure 4.4 with help of a flowchart. The first stage of sampling includes selection of sample design, in the next stage of the 3 Tribal Development Blocks. The third stage is the selection of 12 villages with Kuki population and 3 Non-Kuki villages. In last stage the sampling units of 500 respondents are drawn for the purpose of this study.

MULTISTAGE SAMPLING

MANIPUR

CHURACHANDPUR DISTRICT
10 TD BLOCKS (540 VILLAGES)

HIGHEST KUKI

HENGLEP TD BLOCK

STRATIFIED RANDOM SAMPLING

4 KUKI VILLAGES

SIMPLE RANDOM SAMPLING

100 KUKI WOMEN
0 NON-KUKI WOMEN

LAMKA TD BLOCK

4 KUKI VILLAGES
1 NON KUKI VILLAGE

100 KUKI WOMEN
80 NON-KUKI WOMEN

300 KUKI WOMEN
200 NON-KUKI WOMEN
15 VILLAGES ARE COVERED FOR THE STUDY

TUIBONG TD BLOCK

4 KUKI VILLAGES

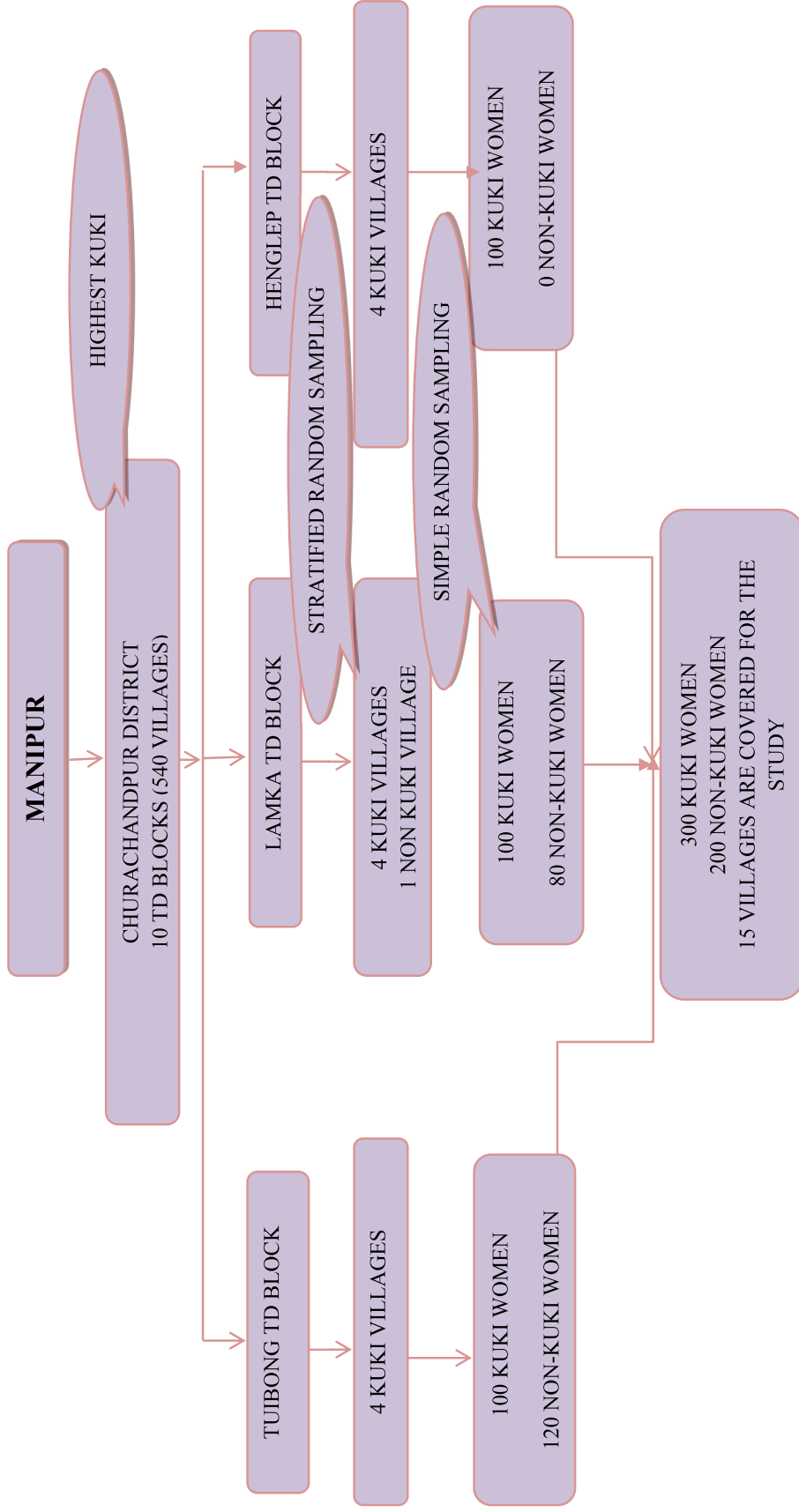100 KUKI WOMEN
120 NON-KUKI WOMEN

Figure-4.4: Sample Design of the Study

4.3. Data

For the purpose of the study, both Secondary data and Primary data are used. The secondary data is used and describe in subsequent Chapter 5 – Socio-economic status of women with special reference to Kuki women. Primary data collected from the survey are analysed and discussed in the chapter 6 which is Result and Discussion chapter.

4.3.1. Secondary Data

In order to streamline the present study, a number of books; journals; thesis and articles were reviewed. For this purpose various libraries were visited frequently and various sites on internet were explored. Relevant secondary data were collected from published reports, magazines and bulletins; issued by various local, national and international organizations.

For the collection of secondary data the researcher accessed various data sources which are as follows:

- Census Report of Manipur 2001
- Census Report of Manipur 2011
- Economic Survey of Manipur 2012-2013
- Statistical Abstract of Manipur 2008-2011
- Gender Statistic of Manipur 2007
- District level Household and facility Survey-1(1998-1999)
- District level Household Survey-2(2002-2004)
- District level Household Survey-3(2007-08)
- National Family Health Survey-1(1992-93)
- National Family Health Survey-2(1998-99)
- National Family Health Survey-3(2005-06)

In order to analyse the secondary data, simple percentage, diagrams and indices were incorporated as a tools. The Sopher disparity index, Discrepancy index and Gender Parity Index are used to highlight the status of the women in Manipur. The calculations of the indices are discussed in the methodology section of this chapter.

Besides these indices we calculate simple percentages and descriptive statistics to analyse secondary data.

4.3.2 Primary Data Collection

The survey was conducted between the months of May to October, 2013 in Churachandpur district of Manipur. Information regarding household and respondent was collected from the office of concerned Village Chief (Village Head), Church Pastors, Kuki Student union and district coordinating offices. The researcher made her first visit to the study area one week before the data collection in order to select villages and developing rapport with local people. During her first visit researcher selected the villages randomly and also got the verbal consents of Village Chief or Village Head. In this regard, local leadership and some educated people helped the researcher to a great extent. For convenience of researcher and development of better rapport with respondents, one educated person who knows the Kuki language was engage for verbal communication with the respondent.

For collecting the primary data a pre-tested schedule was being used. The schedule was framed up using some Indicators which would help in revealing the socio-economic status of the Kuki women. The indicators compromise of both qualitative and quantitative natures. Thereafter, the qualitative data is converted into quantitative data by converting into numerical value. The Schedule was framed up keeping in consideration that it should be short and clear, few in number and easy for respondent to answer.

The schedule was prepared to capture the various dimensions such as health, education, income, decision making power of the respondents and also information on the demographic and socio-economic profile of the households.

Since the study deals with respondents whose age varies to a large extend, the respondents are grouped into two categorised that is 'Married women' and 'Unmarried women'. Indicators of socio-economic status among the married women may not have the same value when used to assess the socio-economic status of unmarried women.

4.4. Methodology

In this section we will discuss the various methods and techniques use to fulfill our set objectives. First we will discuss the methods, the researcher has adopted to analyse the secondary data. In the later section we will discuss the methods use to analyse the primary data collected through field survey.

4.4.1. Methods for Analysing Secondary data.

As mentioned earlier for the purpose of analysing the secondary data we have used several indices, bar diagrams, pie chart and line diagram.

In the next section we are going to discuss the methodology for calculation of Sopher Disparity Index, Discrepancy Index and Gender Parity Index.

(i)   Sopher Disparity Index(SDI)

$$SDI = \frac{log\left(\frac{X_2}{X_1}\right) + \log(Q - X_1)}{Q - X_2}$$

Where,

$$X_2 > Or = X_1$$

$$Q = 100$$

This index was developed by Sopher, (1974). According to this method, X2 is taken for the variable comparatively having higher value and X1 for that having relatively lower value. The measured value of the index is interpreted as – higher value of index, higher the extent of disparity and lower the index value – lower the disparity. In case of perfect equality that is no disparity at all then the index value will be zero.

(ii)   Discrepancy Index

The second index is known as Discrepancy index (DI) developed by Maity, (2014). The formula for calculating the index is as follows:

Discrepancy Index (DI) =

$$\left(\frac{\text{Number of Male literate -Number of female literate}}{\text{Number of Male literate +Number of female literate}}\right) * 100$$

Here, higher the index value higher will be discrepancy and lower the index value lower will be the discrepancy.

(iii)   Gender Parity Index

The Gender Parity Index is be defined as a ratio of the number of female students enrolled at primary, secondary and tertiary levels of education to the number of male student in each level. The Gender Parity Index is a socio-economic index to measure the relative access to education of male and female. It can. It is numerically presented as follows

$$GPI= \frac{Number\ of\ female\ enrolled}{Number\ of\ Male\ enrolled}$$

Near the value of GPI to value of "1" means lesser disparity in the number of enrolment of female to that of the male. Lesser GPI indicates higher disparity in the number of enrolment of female to that of the male.

(iv)   Bar Diagram

A bar diagram or bar graph is a chart is used to show comparison among categories. The bar can be plotted vertically or horizontally. Out of the two axes, one axis of the chart shows the specific categories being compared and the other axis represent a discrete value.

(v)   Pie Diagram

A Pie diagram or pie chart is a circular statistical graphic. It is divided into slices to represent numerical proportion. The arc length of each slide is proportional to the quantity it represents. It is used to show the relative size of the components of data-set, in comparison to one another and to the whole set.

(vi)   Trend line Diagram

A trend line visual representation of the general direction that a group of points are heading. It represents the pattern of time series data.

4.4.2. Methods Adopted To Achieve the Aims and Objectives of the Study

In order to achieve the set objectives, technique such as frequency distribution, indices and regression model are incorporated. For the set objective, dimensional indices namely Health Index, Income Index, Educational Index and Economic Index are self-developed by the researcher and logistic regression is applied to identify the factors which influence the socio-economic status of the Kuki women and Non-Kuki

women. The results are estimate by using the data analysis and statistical software STATA 12

4.4.2.1. Health Status

The Health Status is investigated by using the Health Index which is by nature dimensional index and incorporated with some self-chosen variables (indicators) base on literatures. The Health index (HI) is frame up separately for married women (Kuki and Non-Kuki) and separately for unmarried women (Kuki and Non-Kuki). The index is calculated separately for married and unmarried as some of the variables are not applicable for unmarried women. Therefore those variables are omitted for calculating Health index of unmarried women. The following index is used for calculation of HI of ith respondents as,

$$HI_i = \frac{Actual\ value\ obtained\ by\ i^{th}respondents - Minimum\ value\ of\ the\ variables}{Maximum\ value\ of\ the\ variables - Minimum\ vlaue\ of\ the\ variables}$$

The variables used to measure Health Index are coded by using dichotomous values (0) and (1). The value (1) is allotted to responses wherever desirable and (0) is allotted to responses wherever not desirable. In the Health Index, the actual value obtained is the actual value observed for the respondent during the survey. Thereafter, the index value is analyses and ranked with the help of three different intervals which is discussed in the following section.

The table below shows the sets of variable and values allotted to construct the Health Index.

Table-4.1: Variables and Allotment of values of Health Index

	Sets of variables	Allotted Values
1	Age at the time of first marriage	Above 18 =1 , below 18 = 0
2	Antenatal Care(ANC)	Yes = 1 , No = 0
3	Postnatal Care	Yes = 1 , No = 0
4	Child delivery by skilled birth attendant	Yes = 1 , No = 0
5	Knowledge about AIDS	Yes = 1 , No = 0
6	Consult doctor for acute disease	Yes = 1 , No = 0
7	Any chronic disease neglected	Yes = 1, No = 0
8	Whether BMI appropriate or not	Yes = 1 , others = 0

Above mentioned all eight variables are applicable to ever married respondents, however it is not same in case of unmarried women. So, all the eight variables are used to construct the health index of ever married women while only four variables like Consult doctor for acute disease, any chronic disease neglected, Whether BMI appropriate or not and Knowledge about AIDS are applicable to unmarried women. So the maximum value for calculating the index is taken as '8' for married women while in case of unmarried women, the maximum value is taken as '4'.

The variables are selected with some concrete logic which relates to women health. The variables along with the rationale are as follows:

a) Age at time of first marriage is incorporated in the Health Index with a reason that early marriage may have a negative effect on the health of women .Early marriage life may resulting early childbirth and young women less than age of 18 is more likely to experience complication in pregnancy. Age at marriage and consequently the age at which they start bearing children have serious implications on the women health (Ghatak, 2005).

b) The variables ANC and postnatal care are included as it is the best ways to secure safe motherhood. The value '1' is given to the respondents who have visited at least once for check-up and have received the component of ANC and postnatal care. Women from lower socioeconomic group often find it difficult to make frequent visit to an antenatal clinic.(Park &Park 1989)

c) Child delivery by skilled birth attendant is important step in maternal health care. Skilled birth attendant are person who are trained to proficiency in the skills needed to manage normal pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns. Child delivery by unskilled person indicates low health status.

d) Knowledge about AIDS is vital as the prevalence of HIV/AIDS has been rising in an alarming proportion. This indicator is included to check the general awareness level of the women with their health.

e) The next two variables namely consult doctor for acute disease and any chronic disease neglected is used in order to reflect the importance given to health in spite of financial constraint.

f) The Body Mass Index is used to reflect the Nutritional status of the women. It is calculated by using the standard formula, given below.

$$BMI = \frac{Mass(kg)}{Height(m)^2}$$

Obese (BMI ≥ 30),

Overweight (25 ≤ BMI < 30),

Normal range (18.5 ≤ BMI < 25)

Underweight (BMI < 18.5)

(World Health Organization, 2000).

After calculating the health index for each respondent, the indices are categories into three intervals following the United Nations Development Programme given classification of human development.

The three categories interval of Health status is as follows

Table-4.2: Categories For Health Status of the Women

Rank	Interval
Low Health Status	(HI< 0.5)
Medium Health Status	(0.5 ≤ HI ≤ 0.799)
High Health Status	(HI ≥ 0.8)

4.4.2.2. Educational Status

In order to examine the Educational status of the women, an Educational Index (EdI) is developed for each respondent of Kuki and Non-Kuki irrespective of their marital status. The formula for calculating Educational Index is as follows

$$EdI_i = \frac{Actual\ year\ of\ schooling\ of\ the\ respondent - Minimun\ years\ of\ schooling}{Maximum\ years\ of\ schooling - Minimum\ years\ of\ schooling}$$

Educational Index is measured by using the educational status of the respondents. The actual year of schooling of the respondent is measured in terms of years of formal schooling of the respondents. For those candidate who do not attain formal schooling are given score '0' and for the remaining respondents, score is assigned according to their years spend in school with minimum score of one year. This means if a respondent spend less than one year in school then the respondent received a score '0'. During the survey, it is found out that the highest level of education among the

respondents is post graduation (Masters Degree). Therefore the maximum value is turn out to be as 17. So, using this maximum as "17" and minimum value as "0", the Educational Index of each respondent is calculated. After getting the index values, the values are categories into three intervals namely High Educational Status, Medium Educational Status and Low Educational Status. The table below shows the three interval of Educational Index using this mention three intervals the educational status of the respondent are categories and rank accordingly.

Table-4.3: Categories For Educational Status of the Women

Rank	Interval
Low Educational Status	(EdI< 0.5)
Medium Educational Status	(0.5 ≤ EdI ≤ 0.799)
High Educational Status	(EdI ≥ 0.8)

4.4.2.3.Income status

For carrying out the second objective, a dimensional index called Income index (InI) and occupational classification method are employed. The income index is calculated using the following formula

$$InI_i = \frac{Actual\ Income\ of\ the\ i^{th} respondent - Minimun\ Income}{Maximum\ Income - Minimum\ Income}$$

Where the actual incomes are represented by the income of the respondents earned in a month. The sole earning of the respondent is taken instead of the family income in order to know whether the respondents are self-dependent or financially dependent on other family member for with their basic earning. The minimum value and maximum value are found out during the survey as '0' and '35000'respectively. Using the minimum value '0' and maximum value '35000', the index of each respondent are calculated and categorised into three intervals as shown in the table.

Table-4.4: Categories for Income Status of the Women

Rank	Interval
Low Income Status	(InI< 0.5)
Medium Income Status	(0.5 ≤ InI ≤ 0.799)
High Income Status	(InI ≥ 0.8)

4.4.2.4. Employment status

The employment status of women reflect the social position she attains in the society and gives an indication of economic self-dependency

The employment status is measured by dichotomous value where '0' stands for not employed or unemployed and '1' stands for employed. But same points cannot be allotted to two women engage in different classes of occupation, even though both are employed. It will give a misleading result if both the women are given same points. So the following method is employed to find out the categorical employment status of women belonging to Kuki and Non-Kuki community. Distribution of economic activities is adopted from Chaudhuri, (1998) which is modified in this study in order to adapt the change brought by time and development in the occupation trend. During the field survey it was found that a significant number of respondent were holding Government job and holding Private enterprise job. So the distribution of the economic activities was modified by adding the two classification of occupation. The modified distribution of economic activities is stated as follows:

Table-4.5: Classification of Economic Activities of the Women

Cultivation	slash and burn, jhum cultivation, settle cultivation
Handicrafts/Handloom	weaving cloths, embroidery, making bamboo basket, broom
Trade and Commerce	Pity shops (pan ducan, tea stall), street vendor
Gathering of forest produce	collect and sell fuelwood/firewood, tobacco leaves, roots and spieces etc.
Daily wage labourer	those who work for labour (NREG, brick field, agriculture labour)
Holding Private enterprise job	Working in private schools, NGOs.
Holding Government job	who are government employees

4.4.2.5. Socio-economic Status (SES)

The socio-economic status of the women is measured with the help of self-developed Socio-economic Index (SEI) for both Kuki (married and unmarried) and Non Kuki (married and unmarried) women.

SEI is constructed as a weighted average of Health Index, Educational Index and Economic Index, where equal weightage is allotted for the three indices. Thus by giving equal weightage to the three indices, we define SEI of ith as,

$$SEI_i = \frac{1}{3}(HI_i) + \frac{1}{3}(EdI_i) + \frac{1}{3}(EI_i)$$

The Health Index (HI), Educational Index (EdI) which are being discussed in the earlier section are used for developing SEI. The Economic Index (EI) is being discuss in details in subsequent section

4.4.2.6. Economic Status

In order to determine the Economic status of the women an Economic index (EI) is developed. Here, the per capita family income is taken into account instead of the respondent earned income. The per capita family income is used with the idea that the selected sample respondent may not be income earner. However, cases may be like that the woman economic status is high and also maintain a high standard of living to another woman due to presence of other higher income earners in the household. Women's personal incomes alone may not be indicative of their socio-economic status if they are sharing (or at least benefiting from) the incomes of others in the household. Combining information's about personal incomes with that of household incomes to identify income status of an individual, this measure implicitly assumes that everyone in the household has same experience of socioeconomic status (Baxter and Taylor, 2014). Thus it will be prudent to consider the per-capita family income instead of considering the income earn by the respondent. It is to be noted that income in this study serves as a surrogate for all dimensions of socioeconomic status that are not reflected in health and educational status.

$$EI_i = \frac{\ln(Actual\ per\ capita\ Income) - \ln(Minimum\ per\ capita\ Income)}{\ln(Maximum\ per\ capita\ Income) - \ln(Minimum\ per\ capita\ Income)}$$

After constructing the socio-economic index (SEI) for each sample respondents, that is, for both Kuki women (married and unmarried) and non Kuki women (married and

unmarried), the index value of each respondent is ranked with the help of three different intervals that is low socioeconomic status, medium socioeconomic status and high socioeconomic status. Base on this ranking of the respondent's socioeconomic status, a comparison will be made between SES of Kuki women and that of Non Kuki women.

The index value of each respondent is ranked with the help of three different intervals which are adopted from Human Development Index methodology provided by United Nations Developmental Programme .The intervals are as follows:

Table-4.6: Categories of the Socio-economic Status of the Women

Rank	Interval
Low Socioeconomic Status	SEI< 0.5
Medium Socioeconomic Status	$0.5 \leq SEI \leq 0.799$
High Socioeconomic Status	$SEI \geq 0.8$

4.4.2.7. Factors Influencing Socioeconomic Status of Women

Here an attempt has been made to identify the factors which influence the SES of sampled women. For this purpose we specify the model as a Logistic Regression Model with set of variables separately for married women and unmarried women. For married women (Kuki and Non Kuki women) seven variables but in case of unmarried women (Kuki and Non Kuki women) five variables are employed. The set of variables which are used to identify the factors influence the socio-economic status of married are discussed and define below followed by the description of variables for unmarried women.

4.4.2.8.Factors Influencing Socioeconomic Status of Married Women

We divide the entire set of variable into three categories. They are as follows:

1) Demographic Variables

2) Social Variables

3) Economic Variables

1) **Demographic Variables**

a) Family size: Family size is number of family member in the household of the each sample respondent. The size of the family generally have inverse relationship with socio-economic status of respondent {Rao and Rao (2010),pp-238}.

b) Age gap between the spouses: This indicator is included because in households in which men are considerably older than their wives, wives are believed to have a disadvantage in their ability to exercise power (Kishor, 1999). Rather than the actual difference itself, the percent difference is as it controls the age of the woman's husband, so that the same difference is given a higher value the lower the husband's age, basically giving this factor more importance for younger couples.

c) Age at time of first marriage: The variable age at time of marriage is taken with the logic that early the age of marriage of a woman lower will be the socioeconomic status. This is so because early marriage thwarts income earning opportunities of the women and also diminishes educational opportunities. It also lessens chances of creating social networks beyond the family Early marriage encourages high fertility over lifetime, with the resulting risk to the health condition of the women (Smith and Byron, 2005). It is measured by taking the age of the respondent at their first marriage. This factor will have negative relationship with the socio-economic status of women.

2) **Social Variables**

a) Body Mass Index: BMI indicates the nutritional status of the women. It is measured as dichotomous variable. If the BMI of the respondent is appropriate, then a score of '1' will be allotted otherwise a score of '0' will be allotted. Nutritional status of an individual also influences the SES of the person positively and it is defined as follows:

$$\text{Body Mass Index} = \frac{Mass(kg)}{Height(m)^2}$$

b) Literacy: Literate here we defined as minimum attainment of education level that is upto primary education. It is measured with a binary value, if the

respondent has attain minimum education level of primary school, then a score of '1' will be allotted whereas if the respondent have not attain the minimum level of education that a score '0' will be allotted. The educational level of respondents will have a positive influence on socioeconomic status of women.

c) Educational differences between the spouses: Women are often found to be at an educational disadvantage relative to men. It lower their decision making power, diminishes economic opportunities and large dependency on their spouses. Our indicator captures relative difference in education by taking the total number of years of formal schooling of the husband minus the years of schooling of the wife. This factor will have negative influence on the socio-economic status of women

3) Economic Variables

a) Income of the respondents: The income of the respondent is the amount (in rupees) the respondent is earning through formal or any informal employment in a month. The income of the respondent has a positive and direct relationship with the socio-economic status of the selected respondent as it will increase the standard of living and access to other resources.

As a whole seven important variables for married women are taken into account to identify the factors influencing the socio-economic status of the Kuki and non Kuki women.

4.4.2.9.Model Specification for Married Kuki and Married Non-Kuki women

The notations given to the selected independent variables for married are mentioned as follows:

1. Family size(x_1)

2. Income of the respondent(x_2)

3. Body mass index (x_3)

4. Literacy (x_4)

5. Age gap between the spouses (x_5)

6. Education difference between the spouses(x_6)

7. Respondent age at first marriage(x_7)

The above mentioned variables have been identified on the basis of review of literatures and field experience of the researcher. The above mentioned seven variables are the independent variables. To form the model in the next step the dependent variable needs to be specified. As mentioned in the earlier section of this chapter that the socio-economic status of sample women is determined on the basis of a self-developed socio-economic index and the value of the index lies between "0" to "1" for each respondent. The calculated value of socio-economic index (SEI) for each woman is measured as dependent variable for the regression. [Singh and Das (2013), pp-55-59]. Since the dependent variable ranges between "0" and "1", the model is specified in the following non-linear form to avoid the unboundness problem [Ramanathan (2008), pp-258-260, Debnath (2013) pp.431-432].

For Kuki women

$$SEI_i = \frac{1}{1+e^{-[\alpha+\Sigma_{j=1}^{7}\beta_j x_j + u_i}} \quad \forall\, j = 1,2\ldots.7, and\ \forall i = 1\ldots.150 \qquad (4.1)$$

For Non Kuki women

$$SEI_i = \frac{1}{1+e^{-[\alpha+\Sigma_{j=1}^{7}\beta_j x_j + u_i}} \quad \forall\, j = 1,2\ldots.7, and\ \forall i = 1\ldots.100 \qquad (4.2)$$

Where,

SEI_i = Socioeconomic index of ith respondent

α = coefficient of the constant term

β_j = coefficient of the seven independent variables

x_j = Independent variables

u_i = stochastic error

Therefore in order to determine the factors which are having influence on the SES of married Kuki women and married Non Kuki women, logistic regression is specified below.

Equation (4.1 & 4.2) can be written as,

OR, $$SEI_i = \frac{e^{\alpha+\Sigma_{j=1}^{7}\beta_j x_j + u_i}}{1+e^{\alpha+\Sigma_{j=1}^{7}\beta_j x_j + u_i}}$$

OR, $$\frac{SEI_i}{1-SEI_i} = e^{\alpha+\Sigma_{j=1}^{7}\beta_j x_j + u_i}$$

OR, $$\ln\left(\frac{SEI_i}{1-SEI_i}\right) = \alpha + \sum_{j=1}^{7}\beta_j x_j + u_i$$

OR, $$P_i = \alpha + \sum_{j=1}^{7}\beta_j x_j + u_i \qquad\qquad (4.3)$$

Using the seven variables, equation (4.3) can be rewritten in a linear form as for both of Kuki and Non Kuki,

$$P_i = \alpha + \beta_1 FS + \beta_2 INC + \beta_3 BMI + \beta_4 LIT + \beta_5 Age\_Gap + \beta_6 Edu\_Gap + \beta_7 Age\_M + u_i$$

P_i = log odd ratio of SEI of the *ith* respondents.

α = Co-efficient of constant

Fs = Family size

INC = Income of the respondents

BMI = Body mass index

LIT = Literacy

Age_Gap = Age gap between the spouses

Edu_Gap = Educational differences between the spouses

Age_M = Age at first marriage

$\beta_1\ to\ \beta_7$ = Coefficient of the independent variables

u_i = stochastic error

4.4.2.10. Factors Influencing Socio-economic Status of Unmarried Women

We divide the entire set of variable into three categories namely as demographic variables, Social variables and Economic variables.

1) **Demographic variables**

   a) Family size: Family size is number of family member in the household of the each sample respondent. The size of the family generally have inverse relationship with socio-economic status of respondent {Rao and Rao, (2010), pp-238}.

   b) Age of the Respondent: Younger women tend to have better access to education facilities. Because higher levels of education tend to be associated with having access to more resources through the opportunity to obtain better jobs and earn higher incomes (Lynch & Kaplan, 2000) Young women have low incomes, but their socio-economic status is often protected by their continuing to live in the

parental home(Baxter and Taylor,2014). Educational attainment is expected to be related to more positive socioeconomic among the working age population, especially in terms of employment or income (McLachlan et al., 2013).

2) Social variables

   a) Body Mass Index: BMI indicates the nutritional status of the women. It is measured as dichotomous variable. If the BMI of the respondent is appropriate (18.5≤BMI≤25), then a score of '1' will be allotted otherwise a score of '0' will be allotted. Nutritional status of an individual also influences the SES of the person positively and it is defined as follows:

a) Body Mass Index $= \frac{Mass(kg)}{Height(m)^2}$

b) Literacy: Literate is defined as minimum attainment of education level that is upto primary education. It is measured with a binary value, if the respondent has attain minimum education level of primary school, then a score of '1' will be allotted whereas if the respondent have not attain the minimum level of education that a score '0' will be allotted. The educational level of respondents will have a positive influence on socio-economic status of women.

3) Economic variables

a) Income of the respondents: The income of the respondent is the amount (in rupees) a respondent is earning through formal or any informal employment in a month. The income of the respondent has a positive and direct relationship with the socio-economic status of the selected respondent as it will increase the standard of living and access to other resources.

As a whole five important variables for unmarried women are taken into account to identify the factors influencing socio-economic status of the Kuki and non Kuki women.

Similarly, the following notations is given to the selected independent variables for unmarried women are mentioned as

   1. Family size(x_1)

   2. Income of the respondent(x_2)

   3. Age of the respondent(x_3)

4. Body Mass Index (x_4)

5. Literacy (x_5)

With the above five independent variables and the dependent variable as the SEI which lies between '0' to '1', the model is specify as follows

For Unmarried Kuki

$$SEI_i = \frac{1}{1+e^{-[\alpha+\Sigma_{j=1}^{5}\beta_j x_j + u_i}} \quad \forall\, j = 1,2\,....5, and\, \forall i = 1\,.....150 \qquad (4.5)$$

For Unmarried Non Kuki

$$SEI_i = \frac{1}{1+e^{-[\alpha+\Sigma_{j=1}^{5}\beta_j x_j + u_i}} \quad \forall\, j = 1,2\,....5, and\, \forall i = 1\,.....100 \qquad (4.6)$$

Where,

SEI_i = Socioeconomic index of ith respondent

α = coefficient of the constant term

β_j= coefficient of the five independent variables

x_j = Independent variables

u_i= stochastic error

Equation (4.5 & 4.6) can be written as,

OR, $$SEI_i = \frac{e^{\alpha+\Sigma_{j=1}^{5}\beta_j x_j + u_i}}{1+e^{\alpha+\Sigma_{j=1}^{5}\beta_j x_j + u_i}}$$

OR, $$\frac{SEI_i}{1-SEI_i} = e^{\alpha+\Sigma_{j=1}^{5}\beta_j x_j + u_i}$$

OR, $$\ln\left(\frac{SEI_i}{1-SEI_i}\right) = \alpha + \Sigma_{j=1}^{5}\beta_j x_j + u_i$$

OR, $$P_i = \alpha + \Sigma_{j=1}^{5}\beta_j x_j + u_i \qquad (4.7)$$

Using the five variables, equation (4.7) can be rewritten in a linear form as

$$P_i = \alpha + \beta_1 FS + \beta_2 INC + \beta_3 AGE + \beta_4 BMI + \beta_5 LIT + \mu_i$$

P_i = log odd ratio of SEI of the *ith* respondents.

α = Co-efficient of constant

FS = Family size

INC = Income of the respondents

AGE = Age of the respondent

BMI = Body Mass Index

LIT = Literacy

$\beta_1 \ to \ \beta_5$ = Coefficient of the independent variables

u_i= stochastic error

4.5 Conclusion

The chapter has provided the description of scientific methodology applied in the present study. The multistage sampling was involved in the selection of the district, tribal development block, selection of the villages and the selection of the sample unit. A pre-tested well-structured interview scheduled was employed to extract the required information from the sample respondents. Using simple percentage methods, Sopher Disparity Index, Discrepancy Index and gender Parity Index the secondary data collected from published and unpublished will be analyse. For primary data, dimensional index like Health Index, Income Index, Education Index, Socio-economic Index and a logistic regression model are set up for this present study.

With the above mentioned methodology, in the next to two consecutive chapters that is, Chapter V and Chapter VI, the data collected will be analysed and result will be drawn on the subject of the study.