CHAPTER I

INTRODUCTION

1.1 The Problem

Economic development refers to the structural changes in production and employment pattern, which enhance the productivity of labour and earnings of workers. As the economy shifts its productive activities from the primary sector to the secondary and tertiary sectors, workers also move from farms to factories and services, from rural to urban areas and from informal to formal work. The vast empirical studies of Colin Clark (1940), A.G.B. Fisher (1952) and Simon Kuznets (1966, 1969) have supported this theory and regarded this sectoral shift as an index of development in developed countries.

However, in developing economies one cannot expect the production and employment structure to move at the same pace (Bhalla 1997). There it seems to be a general rule that employment structure changes slowly and gradually, particularly so in rural areas. Consequently, diversifying the employment structure by increasing rural non-agricultural activities is often suggested and adopted as a policy measure to speed up the development process in these countries. 'Diversification' in this context is used broadly to indicate the extent of departure of rural workers from the traditional primary sector occupations to those in the secondary or tertiary sectors.

Compared with the other States of the Indian Union, Kerala has an 'apparently developed' (Eapen 1994) employment structure with primary sector absorbing a lower percentage of the workforces. The reports of the National Sample survey Organisation (NSSO) for the year 1999-2000 reveal only 42.8 per cent of males and 59.8 per cent of females in rural Kerala as engaged in
agriculture. This is against the national averages of 71.4 and 85.4 per cent of male and female workers. Moreover, there has also been statistical evidence of a progressive shift in employment to the tertiary sector, often bypassing the secondary sector in Kerala.

Despite the attractive wages prevailing in the primary sector and the existence of considerable unemployment in rural areas workers are not willing to take up agriculture as their primary occupation in the State. They show an excessive eagerness to get employed in the non-agricultural sectors even in areas far away from their villages. The result is a highly diversified employment structure in the macro statistics. The hitherto available literature on the topic suggests increased literacy and social development as reasons for the exit of workers from the primary sector. It may also be due to the inter-sectoral shift of workers that some regions of the State experience acute shortage of agricultural labourers. The present study mainly focusses on the nature and direction of this employment diversification among the rural workers especially women workers.

Another phenomenon that is to be noted along with diversification of employment is the change in the employment status of workers in the sector to which they have shifted. Employment status refers to the terms and conditions under which a person gets employed and it is an index of the nature and quality of work that people are getting into. When a rural economy diversifies the workers may rise in status either as self-employed workers or as regular employees. At the same time it is also possible that their status may be lowered to that of casual wage earners. While in most developed nations workers move to regular jobs or become self-employed, in developing countries like India, they move to the less advantageous position of casual labourers. The quinquennial rounds of NSSO during the 80s and 90s lend evidence to these facts. Thus in India, though there occurred a progressive shift of workers to non-agriculture, it has also been characterised by increased casualness of workers. Most of the
States in India, including the State of Kerala, follow suit. This feature currently discussed in literature as 'casualisation' is a matter of real concern, for it suggests that at any given level of employment diversification, the workers fail to get integrated to the development process.

To understand the impact of diversification on the employment status one needs to probe into the factors that have led to that process. If the rise in non-agricultural activities is due to the increased agricultural productivity through consumption and demand-induced linkages it is no cause of concern. On the other hand, if diversification is due to distress and sustained pressure on agricultural land or due to stagnation in that sector, it does pose a problem. Simultaneous operation of both these factors is also a possibility. This necessitates the identification of the major determinants of the diversification process. Whether this sectoral shift is a result of distress conditions or an indication of new opportunities for the workers is also a pertinent question that needs to be answered by this enquiry.

Similarly there is also the need to identify the determinants of employment status. The dimensions of job quality and job characteristics have to be investigated to decide on the casualness or otherwise of a particular job. If the emerging changes in the rural non-agricultural sector are likely to ensure any stability in employment and income to these rural women, it can be treated as a positive process. An increase in wages and improved working conditions, are also signs of betterment. On the other hand, if it has resulted in switching permanent agricultural labourers to daily wage labour, with low bargaining power for wages and other terms of work the shift has surely been a negative process. Similar is the case with self-employment and regular employment, wages and the nature of contract being the crucial factors.
1.2 Women Workers and Diversification

It is a well-established fact that in the process of development women workers are always allotted the 'nooks and crevices' even in developed countries. In developing nations they are always over-represented in the primary and informal sector jobs. Most often they willingly ignore the employer's failure to implement government-legislated standards (World Bank 1995). Identifying and explaining the determinants of women work participation in various sectors is a major challenge for all the studies related to labour market. Boserup's study of the role of women in development emphasises discontinuity in female participation associated with the transformation from rural agricultural to urban industrial societies. This U-Curve hypothesis of an initial fall due to either withdrawal or exclusion is supposed to have substantial regional variations (Boserup 1970). Still most studies on women's work and development strike a pessimistic note.

Against this background the case of rural women workers in India is not much different. With more than 85 per cent of women workers still employed in primary sector, development seems to have eluded them. The NSSO statistics for the year 1999-2000 reveals that only 299 per thousand of rural women work for a living in India as against the male participation of 531 per thousand. Again, of these women workers one fourth are employed in the subsidiary category and of the rest 39.6 per cent work as casual labourers (NSSO 2001). Sectoral shift of women workers is only a recent development at the national level and has started to draw the attention of scholars. But these attempts had only been a part of their more varied objectives. The available evidences until now suggest both distress-led diversification and growth-led diversification in operation in rural India.
At the same time among the Indian States, Kerala is one that records a low level of work participation and a high degree of unemployment in official statistics. The situation is even worse for the women workers of Kerala, their work participation being 23.8 per cent and the unemployed constituting 20 per cent of the labour force (NSSO 2001). That this should be so is indeed an irony in Kerala - a State with very high female literacy and other social welfare indicators. It is quite evident that the levels of social progress are not reflective of economic progress.

Similarly a shift in employment is not necessarily a pointer to improved economic status of workers. The status distribution in tune with the national trend shows a sustained and substantial decline of workers in self-employment. Meanwhile, contrary to the national trend, it shows a decline in wage labour and increases in regular employment. Still, occupational sex segregation is severe especially in the tertiary sector to which these workers have shifted. Even women with education, crowd into these jobs that are sometimes semi-professional like teaching and nursing. Most often their work happens to be casual and irregular as domestic helpers, sales personnel, accounting staff etc. It is not uncommon that we come across women workers with similar human capital and experience having different wage contracts.

It is possible that all these developments have resulted in the withdrawal of women workers from the labour market in the rural as well as urban areas. Then the low-level participation of women workers is partially attributable to this factor also. Therefore a micro level enquiry is worthwhile regarding the rural women workers in Kerala. The study is also intended to cover the extent of diversification and the factors influencing it across the districts of Kerala over the census years 1981-2001.
1.3 Objectives

i) To highlight the sectoral variations in rural employment structure in Kerala.

ii) To identify the major determinants of diversification.

iii) To examine the process and pattern of rural non-agricultural activities undertaken by women in the selected villages of Ernakulam district.

iv) To assess the consequences thereof on the employment status of rural women workers in the sample.

1.4 Hypotheses

i) In Kerala the present employment structure favours the employment of more women in non-agricultural activities than in agricultural activities.

ii) Variables indicating development influence the process of diversification rather than those indicating distress.

iii) There is diversity in the process of diversification itself in the three blocks.

iv) The sectoral shift and the status shift in employment are not dependent.
1.5 Database and Methodology

The process of diversification in this study is analysed both at the regional and at the household level. To analyse the regional adjustments of sectoral diversification in rural Kerala and thereby to test the first two objectives of the study we utilise the secondary data. The reports of the NSSO, Directorate of Census Operations (Census), Directorate of Economics and Statistics (DES) and the Centre for Monitoring Indian Economy (CMIE) have been extensively used for this purpose.

The NSSO, under the Department of Statistics of the Government of India collects data on employment and unemployment in its quinquennial surveys. So far it has undertaken six such surveys, the latest being the one conducted during the 55th round for the year 1999-2000. The study has made use of these NSSO surveys as a framework of the national and State level rural work participation in non-agricultural sector.

Yet another source of labour force data is the decennial Census estimates. The study has included the Census estimates also along with the NSSO results as alternative estimates. Besides, the available provisional results of Census 2001 are included in the study. Nevertheless, the study depends on NSSO data for the structural framework because of the following reasons:

First, this data is considered to be superior to the Census data in the sense that it reflects a better enumeration of the subsidiary workers. Second, a detailed classification of the sectoral composition of workers is not yet available from the 2001 census, whereas we get this information for the country as a whole and for States from the NSSO 55th round. Third, NSSO is the only source of information on the employment status of workers by gender and residence.
But, NSSO data is available only up to the State level and there is no district-wise break-up. This is an important obstacle that we came across in our study. The sectoral variations in employment structure at the regional level therefore have to be obtained from the Census reports, as this is the only available source for the same at the disaggregated level of districts. Of the Census figures, researchers in general consider the 1971 estimates as gross underestimates owing to the exclusion of marginal workers, especially of female workers. So we have mainly made use of the 1961, 1981, 1991 and 2001 census figures for analysing the changes in employment structure.

From the analysis of the secondary data we get only a broad picture of the female rural employment structure of Kerala in comparison with that of the nation as a whole. To some extent the dynamics of the growth of female non-agricultural employment in the rural areas of the districts of Kerala has also been brought out. But beyond that it does not furnish any information on the regional diversity in the process of diversification of employment among rural women. Nor does it provide any reason for these behavioral patterns. The resultant changes in the status of workers are also to be unravelled. To fill these vacuums left in the secondary data a primary survey was carried out by selecting and analysing a sample of 450 households. The survey was conducted within a six-month period from 1st of January 2001 to 31st of May 2001. The procedure followed in the selection of the sample households is as follows:

1.6  Survey Design

1.6.1  Stage I - Selection of District

The district selected for micro level analysis is Ernakulam having a rural female work participation rate of 47.84 in non-agriculture. This rate is relatively closer to the State average of 42.9 as most other districts have larger variations
(Census 1991). Besides, the district ranks first in the State with regard to the share of income from non-agricultural sector not just in the current year, but all through the past decade. If we observe other development indicators, it can be seen that the district ranks high in matters of female literacy, education, health and social welfare activities. It is also a district, where a fairly high percentage of sectoral shifts among rural women workers have occurred between 1981 and 1991.

1.6.2 Stage II - Selection of C.D.Blocks

Ernakulam district consists of fifteen blocks. On the basis of the Percentage of the Rural Female Non-agricultural Workers (PRFNAW) in the census reports of 1991 these blocks are first divided into three groups. From each of these groups showing low, medium and high levels of participation one block each is selected as the second stage-sampling unit. To avoid extremes and to get a more representative sample we have selected the blocks that happened to be medians of the three groups of the distribution. Thus Vadavukode, Vazhakulam and Vyttila blocks are selected as those representing the lower, medium and the higher groups respectively. Selection of the blocks is shown as Appendix I.

1.6.3 Stage III - Selection of Villages

In the third stage, the villages for detailed household enquiry are selected. From the three blocks, two villages that had a female non-agricultural participation close to that of the corresponding blocks are selected. Thus Aikkaranadu and Thiruvaniyoor get chosen from the Vadavukode block, Edathala and Vazhakulam from the Vazhakulam block, and Kumbalam and Maradu from the Vyttila block. The selection of sample villages is also shown in Appendix I.
1.6.4 Stage IV- Selection of Households

In order to control the workload at the stage of listing of households, ward-wise distribution of female non-agricultural workers in the 1991 census was subjected to scrutiny. Still, due to the reorganisation of panchayath wards after 1991 we could not directly go for the identification of wards on this basis. So ward divisions of the panchayath for the recent panchayath elections were followed. With the help of experienced panchayath members and field staff of the panchayath offices, boundaries of these wards were located. From among these panchayath wards three each having high female non-agricultural participation were identified for selecting the sample households.

As the number of households having women workers is not available from any source we had to conduct a listing operation in the wards for the identification of sample households. Only those households with at least one-woman worker were chosen for listing and their basic details for identification were collected. Seventyfive households with women workers were listed from each of the three wards of the villages.

After the listing process we grouped together the households in the wards in each village. As the universe was unknown and considered sufficiently large a disproportionate sampling technique was adopted. Thus 75 households were selected at random from each village to reach a predetermined sample size of 450 households. These households from 18 wards of the 6 villages selected from the 3 blocks of Ernakulam District constitute the final units of sampling. The sampling frame is illustrated below in Table 1.1.
Table 1.1 Sampling Frame

<table>
<thead>
<tr>
<th>STAGE I: SELECTION OF DISTRICT</th>
<th>ERNAKULAM DISTRICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDY AREA</td>
<td>(15 C.D.Blocks)</td>
</tr>
<tr>
<td>STAGE II SELECTION OF C.D.Blocks</td>
<td></td>
</tr>
<tr>
<td>LOW RFNAW</td>
<td>MEDIUM RFNAW</td>
</tr>
<tr>
<td>VADAVUKODE (6 panchayaths)</td>
<td>VAZHAKULAM (6 panchayaths)</td>
</tr>
<tr>
<td>MEDIUM RFNAW</td>
<td>HIGH RFNAW</td>
</tr>
<tr>
<td>VAZHAKULAM (6 panchayaths)</td>
<td>VYTTILA (2 panchayaths)</td>
</tr>
<tr>
<td>STAGE III SELECTION OF VILLAGES</td>
<td></td>
</tr>
<tr>
<td>AIKKARANADU</td>
<td>THIRUVANIYUR</td>
</tr>
<tr>
<td>EDATHALA</td>
<td>VAZHAKULAM</td>
</tr>
<tr>
<td>KUMBALAM</td>
<td>MARADU</td>
</tr>
<tr>
<td>STAGE IV SELECTION OF HOUSEHOLDS - 75 HOUSEHOLDS FROM EACH VILLAGE.</td>
<td></td>
</tr>
<tr>
<td>TOTAL: 450 Households</td>
<td></td>
</tr>
</tbody>
</table>
1.7 Techniques of Data Analysis

In this section we present the main techniques used in the analysis of both the secondary and the primary data.

1.7.1 Analysis of Secondary Data

The first objective of highlighting the employment structure at the regional level is examined in the study by using simple percentages, coefficient of variation, trend projections, independent and paired sample tests etc. The data for this purpose came from NSSO and Census reports.

There are innumerable variables that affect the participation of workers in non-agriculture. When it comes to female workers the list of factors is further extended, as we have to consider their familial and maternal responsibilities. Then the identification of factors or underlying variables that explain the pattern of correlation within the observed variables becomes difficult. In most of the earlier studies that enquire into the determinants of non-agricultural employment at the national and regional level the basic tool of analysis adopted is Multiple regression. But in this case we could not use regression. So in order to study the second objective regarding the determinants of diversification at the regional level we have made use of factor analysis.

1.7.2 Factor Analysis

Factor analysis is always considered the best tool in situations where there is the need of data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables. In the present study it has helped us
1) To study the correlations among a large number of interrelated and quantitative variables influencing female non-agricultural employment. By grouping the variables into a few factors, the variables within each factor are found to be highly correlated compared to variables in other factors.

2) To interpret each factor according to the meaning of the variables in that factor.

The factor analysis model expresses each variable as a function of factors common to several variables and a factor unique to the variable\(^2\).

For factor extraction we have used the Principle Component Analysis (PCA). This is to find out the first linear combination of variables that accounts for the largest amount of variation in female non-agricultural employment, the second for the next largest amount of variance in a dimension independent of the first and so on. Successive components explain smaller and smaller portions of the total variance and are independent of one another. In each solution there are as many components as there are original variables. The variances of the components are commonly called eigenvalues (also called characteristic roots or latent roots). The size of the eigenvalues describes the dispersion or shape of the cloud of data points in a multivariate space that has one axis for each variable. After the initial factor extraction the results are again rotated to make larger loadings larger than before and smaller loadings smaller than before. This procedure is supposed to help in giving more meaningful interpretations to the subject area at hand.
1.7.3 List of Variables

The main variables taken for this part of the study are given in Table 1.2. The sources of these specified variables are listed in Appendix II.

Table 1.2

Variables used in Factor Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFSIZE</td>
<td>Average Family Size</td>
</tr>
<tr>
<td>ASHOLD</td>
<td>Average Size of Land Holdings</td>
</tr>
<tr>
<td>DENSITY</td>
<td>Population Density per sq. Kms</td>
</tr>
<tr>
<td>IDIND</td>
<td>Infrastructure Development Index</td>
</tr>
<tr>
<td>MWPR</td>
<td>Male Work Participation Rate</td>
</tr>
<tr>
<td>NDP</td>
<td>Net Domestic Product</td>
</tr>
<tr>
<td>NSA\TCA</td>
<td>Ratio of Net Sown Area to Total Cropped Area</td>
</tr>
<tr>
<td>PBSPOP</td>
<td>Percentage of Below Six Population</td>
</tr>
<tr>
<td>PANAU</td>
<td>Percentage of Area under Non-Agricultural Use</td>
</tr>
<tr>
<td>PANFC</td>
<td>Percentage of Area under Non-Food Crops</td>
</tr>
<tr>
<td>PRFLIT</td>
<td>Percentage of Female Literates</td>
</tr>
<tr>
<td>PUPOP</td>
<td>Percentage of Urban Population</td>
</tr>
<tr>
<td>SEXRATIO</td>
<td>Sex Ratio</td>
</tr>
<tr>
<td>SNANDP</td>
<td>Share of Non-Agricultural sector in NDP</td>
</tr>
</tbody>
</table>

1.7.4 Analysis of Primary Data

The regional approach is of no use to understand the reasons and processes by which an individual worker chooses to diversify his or her
economic activities and the consequences thereof in the economic status of the worker. So, at the micro level the individual decisions are focused and diversification is viewed from the perspective of an individual worker's choice in a household. Then the decisions regarding whether to diversify or not from the part of the individual workers, is scrutinised with the help of a separate binary logit model-the diversification model. The factors that discriminate the group of diversified workers from primary sector workers are also identified with the use of a discriminant analysis.

1.7.5 Logit Model and Discriminant Analysis

By using the logit model we shall determine the factors behind the diversification of employment of rural women workers. In the general logistic model a qualitative dependent variable is expressed as a function of several explanatory variables, both qualitative and quantitative (Fox, 1984). In our case the dependent variable is diversification of workers and the explanatory variables are grouped into three categories representing individual, familial and job related characteristics.

Discriminant analysis is a tool that is used to identify the factors to discriminate between groups. It also examines the relative importance of each of these factors and arrives at a discriminant score. From the primary data collected a number of variables that may have an influence on diversification was selected by using the criterion of minimum and maximum partial F Value. The variables selected include general education, household size, years of experience, number of days employed last month, monthly income, age, number of non-agricultural members in the family, index for general and social participation.
1.8 Limitations

The study is concentrated in six villages of Ernakulam district. Even within these regions we have noted diverse employment patterns. So the findings of the study cannot be generalised for the State as a whole. Nevertheless, the villages are considered typical to represent the blocks and the district as they were chosen from three different agro climatic regions of the district to which all the villages in the district can be classified.

The study has made use of the 1991 Census estimates for the sampling frame due to the non-availability of other sources of data at the time of primary survey. Still, we have incorporated the available census figures of the year 2001 for the analytical purposes.

Even though an all-out effort has been made to make the invisible work of rural women visible by probing questions, the study has not accurately quantified the amount of housework done to avoid the biases in the process of measurement.

1.9 Plan of Study

After the introductory chapter that presents the objectives and sketches the methodology, we turn to a conceptual explanation of the process of diversification and the categorisation of workers according to their sector and status in the second chapter.

The third chapter goes through the existing literature highlighting the major hypotheses formulated up to this time and states the hypotheses of the present study.
In the fourth chapter is given the employment structure in rural Kerala and the process of diversification in the State.

The factors identified behind the process of diversification at the regional level are discussed in the fifth chapter.

Chapter six presents a profile of the study area -Ernakulam District- and that of the sample villages and households.

The seventh chapter analyses the process, causes and consequences of diversification from the perspective of the rural women workers in the sample households.

The eighth and final chapter will present the broad conclusions that emerge from the study.
Notes

1. As Kerala has only 14 districts we have only limited observations to run regression. Still, when such an exercise was done it was found that there are not enough degrees of freedom, and none of the variables had significance in the model.

2. Factor Analysis model used in the study takes the form,

\[ Z_j = a_{j1}F_1 + a_{j2}F_2 + \ldots + a_{jm}F_m + U_j \]

Where

- \( Z_j \) = the jth standardised variable
- \( F_i = \) the Common factors
- \( M = \) the number of factors common to all the variables
- \( U_j = \) the factor unique to the variable \( Z_j \)
- \( A_{ji} = \) the factor loadings

3. The Logistic Function used is as follows.

If \( P \) is the probability of being diversified then

\[ P = \frac{1}{1 + e^{-z}} \]

Where

- \( z = \) the linear combination
  \[ Z = B_0 + B_1X_1+B_2X_2+\ldots+ B_pX_p. \]

\( B_0, B_1, \ldots, B_p \) are coefficients estimated from the data and \( X_1, X_2, \ldots, X_p \) are the independent variables that are supposed to influence the dependent variable. The logistic model requires far fewer assumptions concerning independent variables and even when the assumptions are required it still performs well.

4. The minimum F Value to enter a variable is 3.84 or the minimum probability of F value to enter a variable is 0.05.