

## **CHAPTER III**

### **METHODOLOGY**

This chapter presents the methodological steps adopted for the present investigation. The main purpose of the study was to assess the impact of economic role performed by tribal women on their status and household development. Descriptive type of survey design was considered to be appropriate for this study. Structured interview schedule supported by observations was used for the purpose of obtaining complete and authentic data. The interview method helps in establishing rapport with the respondents so as to gain their confidence and co-operation in eliciting information. Observation method was also used for the present study since it allows cross validating the time use data collected through recall method. The research procedures followed have been described under the following sub-heads :

1. Conceptual Framework
2. Variables
3. Operational Definitions
4. Selection of the Sample
5. Development of the Instrument
6. Method of Data Collection
7. Analysis of Data

#### **1. Conceptual Framework of the Study**

The framework is explained in terms of systems approach to management of resources by women. The systems framework consists of three elements :

1. Antecedents to management by women include :
  - (i) Personal Characteristics
  - (ii) Family Variables
  - (iii) Situational Factors
2. Managerial activity refers to economic role performance by women.
3. Outcomes of managerial activity by women are :
  - (i) Household development
  - (ii) Status of women

**Conceptual Framework to Study Impact of Economic Role of 'Gaddi' Women on Household Development and Status.**

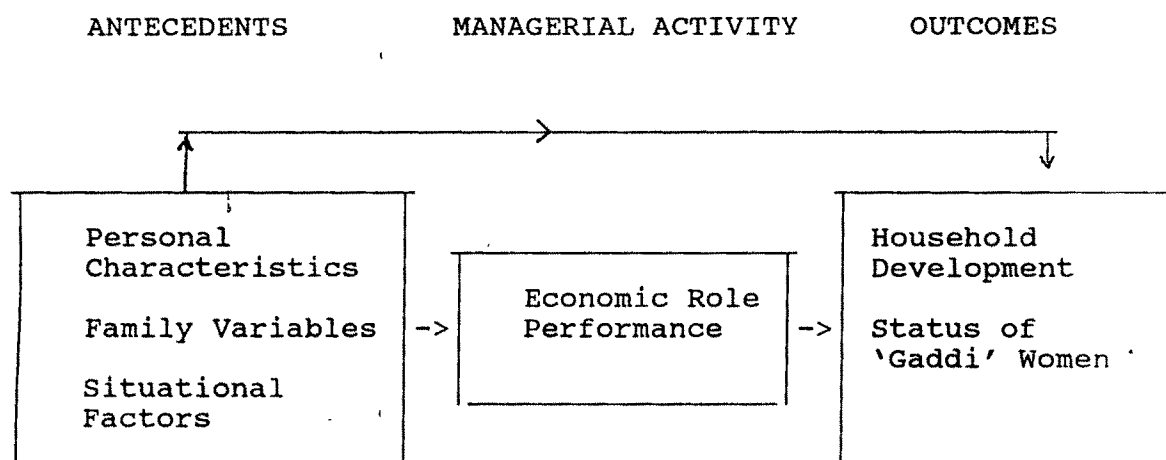


Figure 1

Women play a significant role in the economic life of their families. The framework proposes that tribal women's managerial activity - considered as economic role performance would depend upon several variables : personal characteristics, family

variables and situational factors. Contribution through economic role performance leads to household development and women's status as outcomes. Further it is theorized that these outcomes are also influenced by personal, family and situational variables (Figure 1).

## 2. Variables

The variables selected for the present research alongwith their relationship is shown schematically.

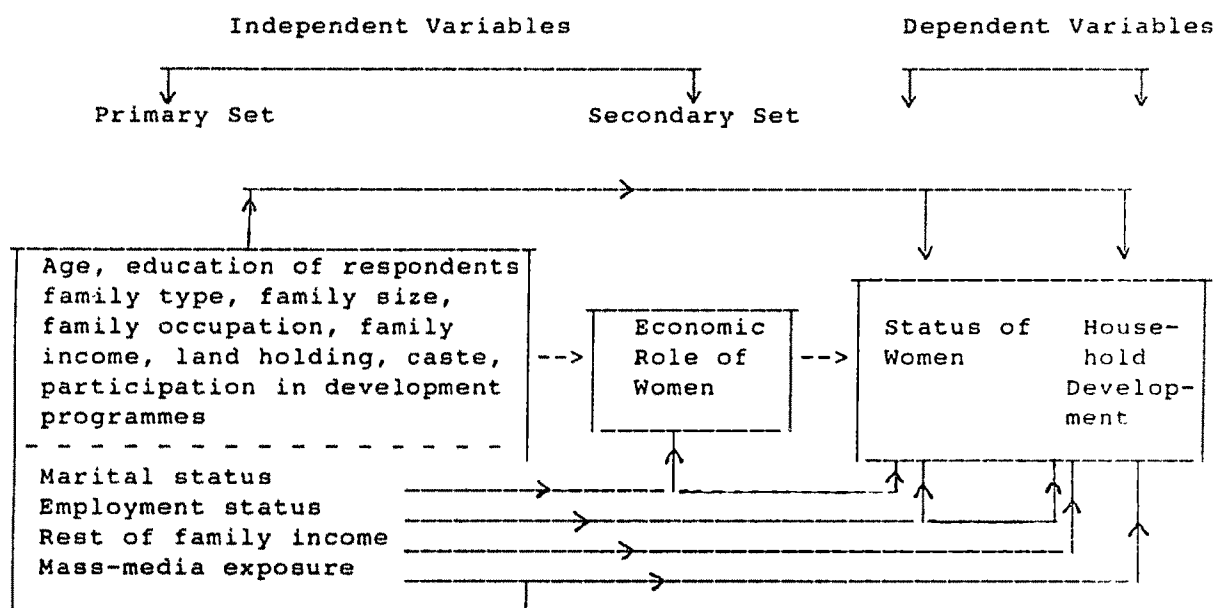


Figure 1a

In the following discussion the dependent variables and primary and secondary independent variables alongwith rationale for selecting them are highlighted.

## 2a. Dependent Variables

**Status of Women :** The sources of power and status may be in the nature of work participation such as productive sphere of work or economic role performed by women. What is the impact of economic role performance on status of women needs to be investigated. Various authors have clarified the concept of status and identified the indicators of status of women; decision making, financial control of women, authority of distribution, supervision and help received in work at home, age at marriage, training and skills for economic opportunities, observation of traditional practices and customs (Linton, 1936; Sultana, 1984; UNESCO, 1985; Mann, 1987; Shram Shakti, 1988; Dak and Sharma 1988; Basu 1992). These parameters of status of women can also be used in predicting the status of tribal women for the present study :

- i. Decision making
- ii. Training for work related to household industry and gainful employment
- iii. Leisure time availability
- iv. Observation of traditions and customs
- v. Help received in performing various tasks
- vi. Extent of freedom, control over and use of money
- vii. Age at marriage
- viii. Authority for distribution and supervision of work at home

**Household Development :** It has been assumed that women's contribution to household development is achieved through time spent in non-market productive work : quantified in money value, and wages earned through participation in market work. Contribution of women through real income and/money income may raise the levels of consumption of goods and services by the household members. Thus, a rise in the levels of consumption of goods and services can be considered as an indicator of development achievement (Todaro, 1977). In the present investigation the following primary and secondary indicators have been selected to determine household development of sample households (Ganguli and Gupta 1976).

1. Primary Indicators : Housing conditions, family health status as perceived by the respondents, food adequacy, saving and consumption expenditure pattern.
2. Secondary Indicator : Leisure time availability and its use by the respondents.

**2b. Independent Variables**

Independent variables are comprised of :

I. Primary and (II) Secondary set of variables

I. Primary variable includes

**Economic Role Performance :** It refers to woman's role and contribution through productive activities both within and outside the household, whether paid or unpaid. In case of a

tribal woman considerable amount of time is spent in performing multitude of productive tasks related to household, agricultural and allied activities. Besides this she also earns money through participation in gainful employment (Grewal, 1980; Sandhu, 1985; Saxena and Bhatnagar, 1985; Singh and Gandhi, 1987; Gill and Miglani, 1989; Sharma, 1991; Kulkarni and Murli, 1991). It has been assumed that woman's participation in economic role accords her status and enhances household development. But there is dearth of empirical data to establish this association.

## II. Secondary variables include

- (i) Personal characteristics
- (ii) Family variables
- (iii) Situational factors

### 2b. (i) Personal Characteristics

**Age of Respondents :** Age of the respondent was considered to be an important variable influencing her economic role performance (Kaur, 1986; Singal, 1989; Sharma, 1991). A few studies have reported that time spent on household activities decreased with increase in age of the homemaker (Bafna, 1979; Chauhan, 1981; Munjal, 1986; Kaur, 1990). Similar trend was observed with regard to agriculture work (Singh and Singh, 1981; Singal, 1989). Age also affects decision making pattern of woman which is a significant determinant of her status (Devi, 1980; Dube et al., 1982; Harode et al., 1992).

**Education of Respondents :** Education is an important variable as it influences the status and indirectly economic role performance of women. A few studies have shown a significant relationship between time spent on various tasks and education of homemakers (Sandhu, 1985; Kaur, 1986; Singal, 1989). Time spent on various tasks and leisure increased with increase in homemaker's education (Nimkar and Jategoonkar, 1971; Bafna, 1979). On the other hand (Singal, 1989) did not find any impact of education on time spent in various tasks. Educational level of homemaker was found to be a significant determinant of her status : (Rani, 1976; Ramachandran, 1978). It was categorically stated by National Committee on Status of Women, 1975; Nishchol, 1975; UNESCO, 1985; Shram Shakti, 1988; Kochar and Pandya, 1992). On the contrary, a few researchers reported that educated woman does not necessarily reflect her having good status (Gulati, 1984; Aggarwal, 1988; Basu, 1992). It was found that there was no unanimity in the findings of various researchers, therefore, it was thought appropriate to study this variable.

**Employment Status of Respondents :** Employment status of women was found to have a bearing on time-use pattern and status. Number of hours of employed work affected time spent by them on work at home, farm and in allied activities (Chauhan, 1981; Devi and Ravinderan, 1985; Singal, 1989). Full time homemakers spent more time on household work as compared to working women. (Kaur, 1982; Sandhu, 1985; Devi and Ravinderan, 1985). Similarly, farming homemakers spent more time on household work than non farming homemakers (Saini, 1983).

Gainful employment accords status to women (Rani, 1976; Sultana, 1984; Bhargava, 1987; Dak and Sharma 1988; Basu, 1992). Research studies have clearly indicated enhancement in status of employed women as a result of their increased earnings Grewal, 1985; Kochar and Pandya, 1992). But a few findings revealed that employment status and financial contribution to family income does not lead to a change in status of women (Baqui, 1976; Sethi, 1988). The literature cited in relation to this variable showed variation. Hence, it was considered essential to investigate its relation with status, household development as well as task performance in the study undertaken.

**Marital Status :** Marital status was considered as an important variable of the present study. A few research studies have been conducted to find women's status in female-headed households (Visaria and Visaria, 1985; Leela, 1991). Devi (1980) reported that marital status affected decision making pattern and status of women. However, there was lack of literature on association of this variable with time-use-pattern of women in various activities and household development. Thus, it was thought appropriate to study this variable.

#### 2b. (ii) Family Variables

**Family Type and Family Size :** Family type and size were found to be associated with time-use-pattern (Grewal, 1980; Sandhu, 1985; Kaur, 1986). The reviewed literature revealed a trend of direct linear correlation between amount of time spent on all activities and family size (Singal, 1989; Sharma, 1991;



Kulkarni and Murali 1991). Only one study showed no significant relationship (Chauhan 1981).

Homemakers belonging to nuclear families spend less time in performing various tasks and vice-versa : (Grewal, 1980; Kamalamma, 1981; Ghosh, 1985). Family type as a determinant of status of women was studied by Singh, 1975; Lal, 1979. A few researches revealed that family type influences decision-making pattern-a strong determinant of women's status : (Awasthy, 1982; Munjal, 1986; Singal, 1989).

**Family Income and Rest of Family Income :** Impact of family income on time-use-pattern of women was studied by Bafna, 1979; Chauhan, 1981; Sandhu, 1985; Jain, 1986; Singal, 1989. Few researchers have indicated that hours of productive work increased when a person's family income became smaller. Women of the households of high income group participated less in agricultural work (Sharma, 1980; Devi and Reddy, 1984). Rest of family income was derived by deleting employed women's cash income from total family income.

Family income as a determinant of women's status was investigated by Bhargava, 1987; Dak and Sharma, 1988; Basu, 1992. The relationship between family income and household development has not been explored. Hence, family income being an important variable was studied in the present investigation.

**Caste :** It is generally believed that women's participation in various paid and unpaid activities and time spent is governed by their caste. (Bose 1985). Caste differentials determine the

variation in modes of domestic and social life as well as types of houses and cultural pattern of people in rural areas (Desai 1978). Significant positive association between caste and time spent in household tasks was reported by Kaur (1986) whereas, significant negative relationship was revealed for farm related tasks. Scheduled caste women were engaged more in animal care and collection of fodder and fuel (Ghosh 1985). It can be concluded that higher caste women devoted more time to household tasks, whereas Kamalamma (1981) revealed no association between caste and time spent on household tasks. Caste as a determinant of women's status was investigated by a few researchers only. Thus, it was considered important to study this variable.

**Main Family Occupation :** Differences in time-use-pattern on household and farm-related work according to main occupation of family was reported by Saini, 1983 and Singal 1989. However, there was lack of literature showing relationship between main family occupation, status of women and household development. Therefore, main family occupation being an important variable has been included in the present study.

**Size of Land Holding :** Size of land holding plays a significant role in time spent by women in livestock and farm activities but not so much on household work (Munjai, 1984; Aggarwal, 1988). Time spent in various tasks was observed to decrease with increase in land holding size (Saxena and Bhatnagar, 1985; Singh and Gandhi, 1987; Sangwan et al., 1990). Land holding size also influences decision-making pattern of women, Zend and Harode (1991).

## 2b. (iii) Situational Variables

**Mass-Media Exposure :** Mass-media was selected as an influencing indicator of status of women by a few researchers (Dak and Sharma 1988; Basu, 1992). As no data were available on mass-media exposure in relation to economic role performance and household development, this variable was included for the study.

**Participation in Social, Community and Development Programmes :** Participation in social, community and development programmes influences time-use-pattern and status of women. Exposure and level of participation in these programmes was observed to be low (Thomas and Khan, 1990). Impact of planned policies have been investigated by various researchers and improvements in these schemes were suggested for greater participation of rural and tribal women (Sharma, 1980; Dixon, 1982; Law, 1985).

On the basis of these observations, it was thought appropriate to include all the above mentioned variables in the present investigation.

## 3. Operational Definitions

The following terms were operationally defined for measurement of variables of the present investigation.

**Household :** Household has been defined as an independent family consisting of a group of persons living together and usually taking food from the same kitchen.

**Economic Role :** It refers to women's role and contribution through participation in productive activities, both within and outside the household, whether paid or unpaid. In the present study it will be measured :

- (1) In terms of time spent by women in performing non-market productive work which will be quantified in money value.
- (2) Money income received in cash through participation in market work. Economic role has been used synonymously with economic contribution.

**Task Performance :** Task performance refers to performance of household, agricultural and allied tasks by the tribal women in day to day life. It included (1) participation and the frequency of task performance by the homemakers (2) time spent in performance of tasks.

**Frequency of Task Performance :** Frequency of task performance has been operationally defined as :

Daily - The task performed everyday, irrespective of how many times a day it is performed.

Weekly - The task performed once or twice a week.

Monthly - Tasks performed once a fortnight or a month.

Rarely - Tasks performed at long intervals.

**Non-employed Homemakers :** Women performing all household, farm and livestock care related activities.

**Employed Homemakers** : Women members of the family who perform all the above stated tasks as well as are occupied in market work for wages.

**Market Work** : It refers to wages earned through participation in gainful employment.

**Non-market Work** : It refers to time spent by respondents in household, agricultural and allied activities for which they are not paid.

**Productive Work** : It refers to market and non-market work. On the basis of review, the following classification of economically productive activities in household, agricultural and allied work has been developed in the context of the prevailing conditions in the tribal area under study.

Household Productive Work : It included various tasks related to household activities such as child care, meal preparation, care of house, care of clothes, shopping, account keeping, fetching water, fetching fuel and care of others.

Agricultural Productive Work : It included tasks involved in carrying out various agricultural operations such as land preparation, weeding, fertilizer application, harvesting, threshing, winnowing, transplanting, processing and storage. It also included animal care related activities and fetching fodder.

Allied Work : Allied work in the present context included activities such as spinning, weaving, kitchen gardening and tailoring.

**Status of Women :** Status of woman has been operationalized as power to exercise her rights and roles and freedom enjoyed by her in making choices within family and society. Specific indicators have been selected to determine status of tribal women as follows :

**General Indicators:**

1. Age at marriage
2. Training for work related to household industry and gainful employment
3. Leisure time availability
4. Observation of traditions and customs by women
5. Help received in performing various tasks
6. Extent of freedom, control over and use of money
7. Authority for distribution and supervision of work at home

**Decision Making:**

**Personal Matters :** Marriage, choice of bridegroom, career related matters, socializing and participation in community and development programmes.

**Family Matters :** Family health related aspects, education of children, income and expenditure and expenditure on durable items.

**Farm Matters :** Expenditure on farm related aspects, expenditure on tools and equipment and decisions related to farm management.

**Household Development :** It refers to overall development of respondent households and its family members due to women's economic contribution. The economic contribution by women through time spent in non-market work (quantified in money value) and money earned through market work may raise the level of consumption of goods and services by household members which in turn enhances their household development. It will be measured in terms of following primary and secondary indicators of development which reflect the levels of living enjoyed by tribal households.

Primary indicators include:

(1) Housing conditions (2) Family health status as perceived by the respondents (3) Food adequacy (4) Savings (5) Consumption expenditure.

Secondary indicator includes : Leisure time availability

**Consumption Expenditure :** In the present study consumption expenditure comprised all the expenditure incurred by the household on different selected goods and services. These include food, housing, clothing, fuel and light, education, health, intoxicants, entertainment, transportation and celebrations. The investigation of mean expenditure on food and non-food components per family unit will be calculated to find out levels of living of present sample households.

#### 4. Selection of the Sample

##### 4a. Locale of the Study

The present study has been carried out in Himachal Pradesh (Figure 2). Himachal Pradesh is bordered by Jammu and Kashmir in the north, Panjab in the west and south-west, Haryana in the south, Tibet in the east. The tribal areas of Himachal Pradesh are located in north and north-east of the Pradesh. The present study is restricted to Bharmour sub-division of Chamba district in Himachal Pradesh (Plate 5). This sub-division has been selected because it has been declared as tribal area of the state. The inhabitants of this sub-division belong to a specialized class of tribes, called 'Gaddis'. About 99 per cent of the total 'Gaddi' tribe population in the state is concentrated in this area.

Bharmour sub-division in Chamba district of Himachal Pradesh in Mid-Himalayan zone is extremely backward yet commands a great historical importance. It was the original seat (Gaddi) of rulers of erstwhile Chamba state till 925 A.D. and it is this tract which is still regarded as the homeland of the scheduled tribes, the 'Gaddis'. Once called Brahmapura, as the original capital of Chamba state, it still harbours in its ancient temples, the monuments of its old glory and civilisation.

The Bharmour sub-division lies approximately between the north latitude  $32^{\circ} - 11'$  and  $32^{\circ} - 41'$  and east longitude  $76^{\circ} - 22'$  and  $76^{\circ} - 53'$ . The altitude varies from 1340 to 5900 metres above mean sea level. This valley of Ravi is enclosed on the



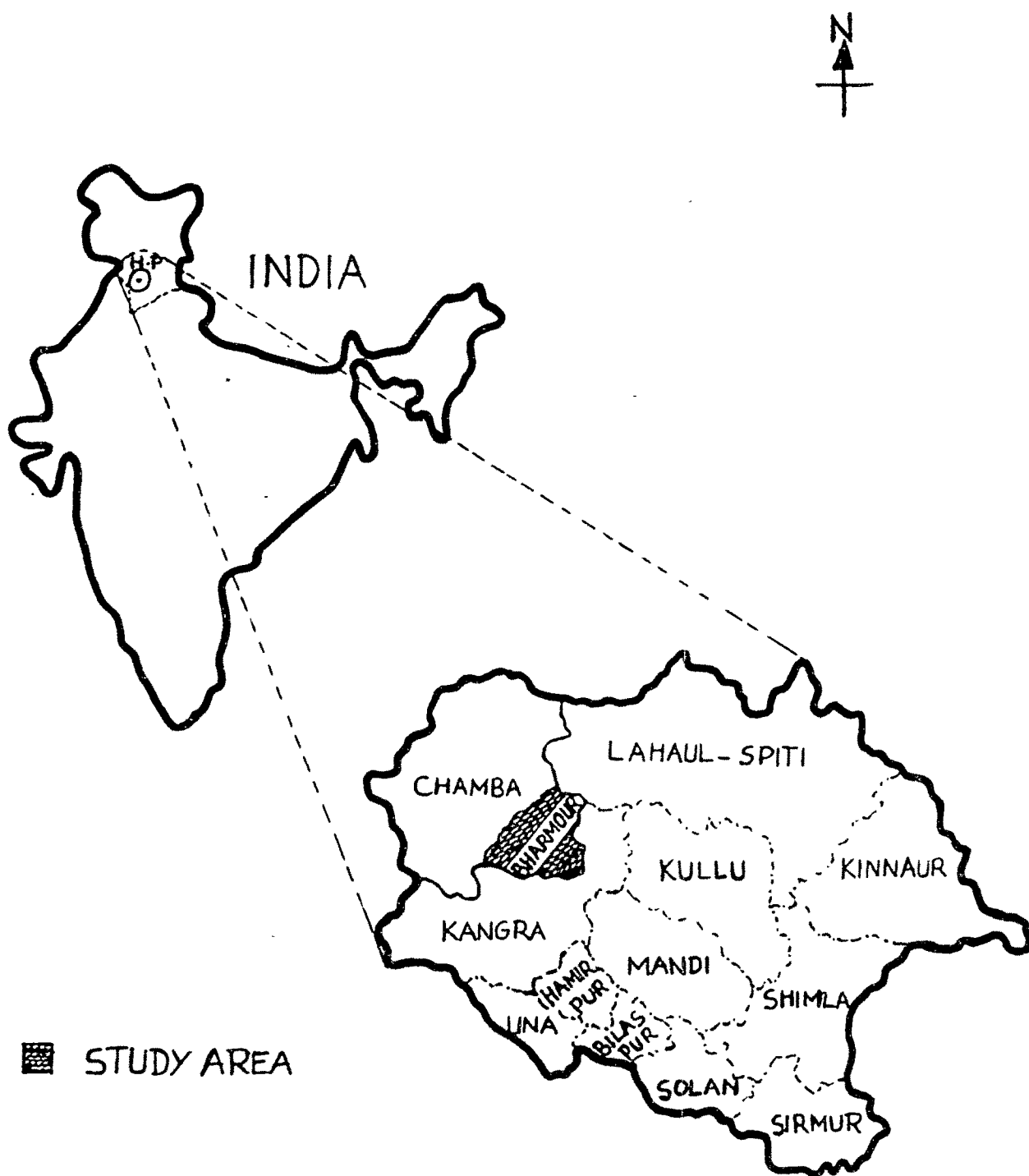


FIG.2 - MAP SHOWING THE STUDY AREA

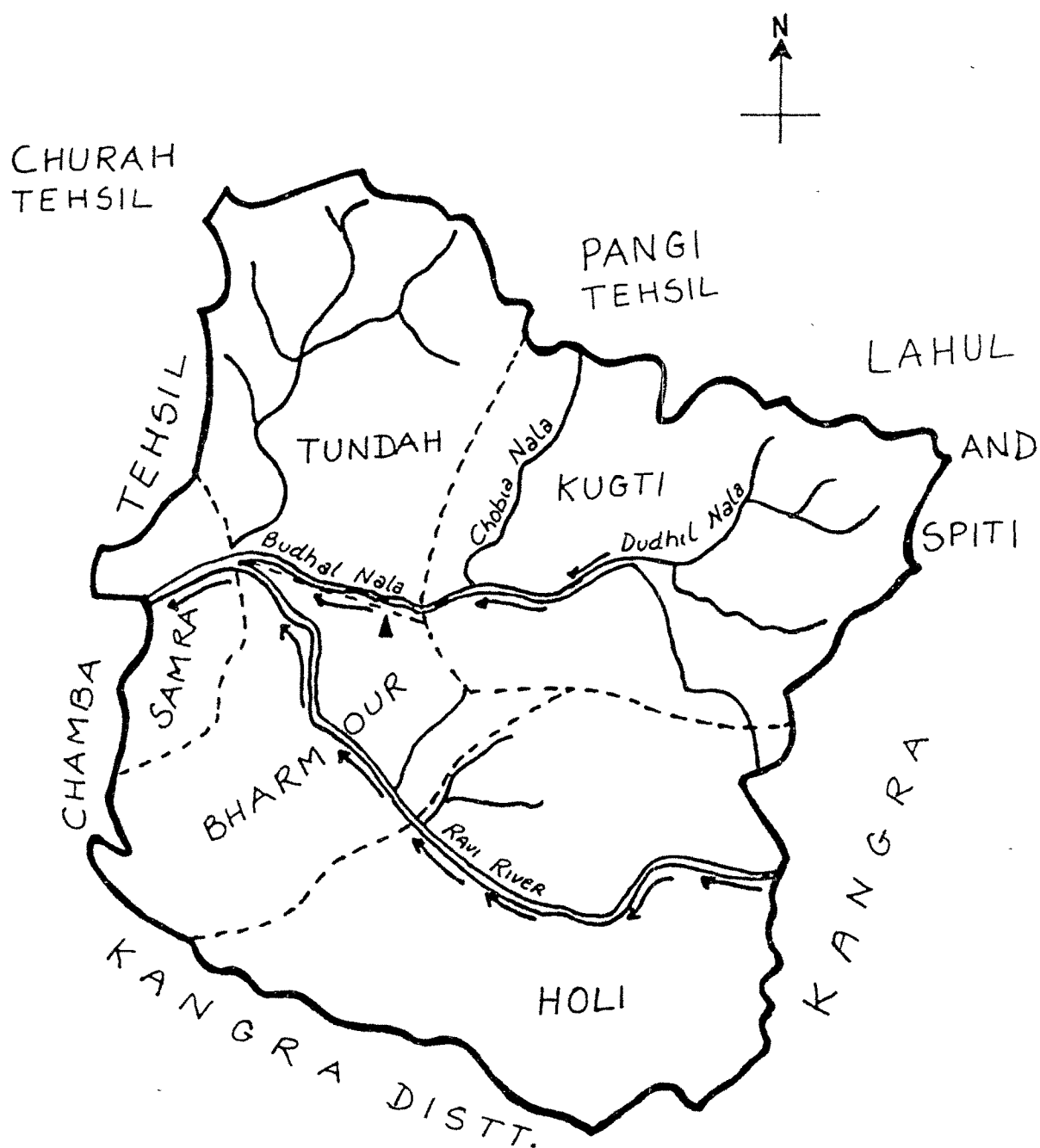


FIG. 3. MAP OF BHARMOUR SUB-DIVISION  
SHOWING SELECTED AREAS.

south by the lofty Dhauladhar, on the north by Pir Panjal of the Pangti range, on the east by an extension of the Dhauladhar which ultimately meets the Pir Panjal near Rohtang Pass. The boundaries of Bharmour tehsil, block and sub-division are co-terminus and its head quarters is located at Bharmour itself.

According to 1991 Census, the population of Bharmour tehsil stood at 33,726 persons. The females constituted 48.0 per cent of the total population and the sex ratio was alarming, only 924 females per 1000 males. The density of population was only 16 persons per square kilometre. In general, the climate is temperate with well marked seasons. The winter lasts from November to March and is characterized by snow fall which is generally heavy. The semi-arctic conditions prevail along the main ranges and from December to April, the passes are blocked with snow. The change over from winter to summer is gradual.

The Bharmour sub-division area is generally inaccessible to surface roads. Bharmour lies 64 kms from Chamba. Though the road to the head quarters is motorable for heavy vehicular traffic, winter snow, summer rains, land slides and fallen rocks prevent the road from being open for more than a few months of the year. People use suspension bridges and ropes to cross rivers. In the absence of proper roads, the only means of transportation available are human labour, mules, sheep and goats.

Nearly 82 per cent of the total population of the tehsil consists of scheduled tribes called 'Gaddi'. The tribal economy is not only limited to agriculture but shepherding and handloom



PLATE 5. VIEW OF 'BHARMOUR' VALLEY



PLATE 6. 'GADDI' WOMAN IN HER TRADITIONAL DRESS

weaving also plays an important role. 'Gaddi' women have been considered to be the backbone of tribal economy and there lies enough scope for quantifying their role in crop raising, cattle rearing, shepherding and handloom weaving in addition to daily household activities and outside employment (Plate 6).

The investigator herself belongs to this district and hence, is well versed with their local life style, language, social and cultural norms, which could help her in developing good rapport with the respondents for ensuring reliable data.

#### **4b. Sampling Method**

The multistage purposive cum-random sampling method was followed to select the study area and respondents. The stages comprised of selection of valley areas, selection of villages and selection of respondents.

##### **4b. (i) Selection of Areas**

The Bharmour sub-division can be divided into five valley areas. These valley areas are i) Bharmour, ii) Kugti, iii) Tundah, iv) Holi, v) Samra.

##### **4b. (ii) Selection of Villages**

For selection of villages lists of all inhabited villages in each valley were obtained from revenue records Bharmour. List of women employees were obtained from various government, semi government offices and private organizations. In consultation with Block-development officer of Bharmour sub-division a final

list of selected villages was prepared. Thus, twenty eight villages were selected from five valley areas.

4b. (iii) Selection of Households

The list of total number of the households in the selected villages was prepared with the help of a Gram Sevika (village level worker) who was maintaining upto date record of village households. The list of households was then stratified according to employment status of respondents. Thus, a sample of 100 employed and 100 non-employed respondent households was selected.

**5. Development of the Instrument**

The interview schedule supported by observation record sheet was constructed keeping in view the objectives of the study. A baseline general survey was conducted in the tribal area before constructing the instrument. The general survey and focus group discussions proved helpful in framing questions according to local situations and conditions. These were particularly useful in eliciting information on time use pattern and food consumption pattern of tribal respondents.

**5a. Interview Schedule**

(1) The interview schedule comprised of five sections.

Section I contained questions to elicit information about the personal and family background characteristics of respondents along with their migration pattern.

Section II included questions on respondent's exposure to mass-media and extent of participation in social, community and development activities.

Section III of the schedule dealt with details regarding economic role performance i.e. time spent in productive work : household, agricultural and allied activities. Informations on frequency of performance of these activities and help received by the tribal women was also obtained. Questions pertaining to time spent on outside employment, leisure, sleep and rest and overall time spending pattern were included in this section. This section also contained questions regarding occupational profile and economic contribution of respondents through paid and unpaid work.

Section IV consisted of questions related to several indicators of status of women such as age at marriage, freedom and control over use of money, observation of traditions and customs, authority of distribution of work at home, availability and use of leisure time, decision making pattern and perceived constraints about it by the respondents.

Section V of the schedule was designed to elicit information on housing conditions, health status, consumption expenditure pattern, food consumption pattern, food adequacy and material possessions of respondent households.

#### **5b. Time Observation Sheet**

An elaborate time observation sheet was prepared to record observation of the time utilization pattern of the respondents. This consisted of a list of detailed categories of tasks that a tribal woman is likely to pursue each day (Appendix A-I).

#### **5c. Pre-testing of the Instrument**

The interview schedule and time observation sheet was pretested to see the clarity in questions on 30 randomly selected working and non-working tribal women from non-sampled area. Few changes were incorporated in the interview schedule and more space was allocated for additional information on observation sheet; thus tool for data collection was finalised. The investigator was able to collect the required information through this tool and it improved reliability for the final data collection for this study.

### **6. Method of Data Collection**

#### **6a. Interview Method**

Data were gathered personally by using interview method supported by observations. The data were collected with the help of pre-tested schedule. The visits which were made during the initial general survey proved useful to establish a rapport with the villagers and to ensure confidence and cooperation from respondents in data collection.



The investigator was accompanied by the Gram Sevika to each selected village and was introduced to the village leaders, Mahila Mandal Pradhans and Anganwadi teachers. The investigator visited each house that was selected by purposive random sampling method and interviewed the respondents with the help of schedule. The purpose of study was explained to the homemakers. In several cases help was sought by questioning the head of the family/other members for authentic information, particularly related to land holding size, migration pattern and income and expenditure pattern. Data collection took more than 1 hour for each household. Additional time was spent due to distances involved in travelling on foot from one village to another, amongst scattered households in tribal villages in hilly terrain to reach sample household. The investigator stayed in the tribal area and data were gathered from month of August to December 1993.

The food consumption survey was carried out for each household by recall (24 hours) method. The quantity of raw foods used for the family in various preparations and volumes of cooked quantities of such preparations were recorded in terms of standardized cups. The respondent was asked to indicate the quantities of different items cooked and consumed by the family on the previous day in terms of standardized cups. The amount of raw food consumed by the family was thus obtained and the nutrient composition was calculated using figures from NIN publication, 'Nutritive Value of Indian Foods' (Gopalan, C. et al., 1993).

## **6b. Observation**

For detailed enquiry of time allocation to various tasks an observation of day's task performance was carried out in selected households. Selection of sub-sample was based on their cooperation and willingness to allow the investigator to do observations throughout the day. A sub sample of 40 households was selected which comprised of 20 employed and 20 nonemployed respondent households. Thus, the investigator observed the respondents from 7 A.M. to 6 P.M. Observations were conducted after complete rapport was established with the respondents and they became accustomed to the presence of the investigator.

Observations of task performance were carried out for one day for non-employed respondents and for two days for employed respondents i.e. one on working day and second on a holiday to find out variation in time spending pattern of employed respondents. The respondents were observed and the investigator tick marked the information in an appropriate time (minutes) column against each task which they pursued during the day of observation (Appendix A-I).

## **7. Analysis of Data**

### **7a. Categorization and Scoring**

For the purpose of analysis, variables of the study were categorized as given below.

i. Age

Age was recorded in terms of number of completed years of respondents at the time of interview.

1. Young : below 30 years
2. Middle : 30-44 years
3. Old : 45 and above

ii. Education

1. Illiterate
2. Primary
3. Middle
4. High school and above

iii. Employment Status

**Non-employed Respondents :** Who were not employed outside home for cash, kind, wages or self-employed at home.

**Employed Respondents :** Who were gainfully employed for wages.

iv. Marital Status

1. Married
2. Widows/Separated

v. Family Type

1. Nuclear
2. Joint

vi. Family Size

1. Small : 1-4 members
2. Medium : 5-7 members
3. Large : 8 or more members

vii. Main Family Occupation

It referred to family's means of livelihood :

**Farming** : Persons engaged in cultivation as owners/tenants.

**Pastoralism/Goat and Sheep Rearing** : Persons engaged in rearing their own flock of sheep and goats.

**Labourers** : Persons earning income on wage basis and may be employed temporarily as casual or agricultural labourers.

**Shop/Business/Small Scale Industry** : Persons engaged in independent business like owning shop, small scale industry etc.

**Services** : Persons engaged in services such as government, semi-government, private etc.

viii. Family Income

Family income referred to the monthly money income earned from various sources by the family.

1. Upto Rs. 1500/-
2. Rs. 1501 - 3000
3. Rs. 3001 - 4500
4. Rs. 4501 and above

ix. Land Holding

Land holding referred to the size of cultivated and grassland area possessed by an individual family. It was categorized as follows :

1. 0 - 0.5 acres
2. 0.6 - 1.0 acres
3. 1.1 - 1.5 acres
4. 1.6 and above

x. Caste

Caste referred to distinct hereditary order of society and was categorized as :

1. High Caste : Brahmins, Rajputs, Vaish
2. Low Caste : Sipi, Rehara

xi. Participation in Community and Development Programmes

**Extension Contact :** It referred to the frequency of contact between respondents and different categories of extension personnel within specified time period.

**Extent of Participation in Community and Development Programmes :** It referred to the frequency of attendance, involvement in discussions and decision making in development programmes by the respondents.

## xii. Exposure to Mass-Media

It referred to the frequency of reading newspapers, listening to radio and viewing television. Data on participation in development programme and exposure to mass-media were categorized and measured on 3 point scale as follows :

	Category	Score
1.	Regularly	3
2.	Sometimes	2
3.	Never	1

On the basis of the total score obtained on each aspect the respondents were categorized as follows :

	Extent of Exposure/Participation	Range of Score
1.	Low	1-3
2.	Medium	4-6
3.	High	7-9

## xiii. Status of Women

It included the indicators of status which have been categorized into :

(a) general indicators and (b) decision making.

### **General Indicators**

1. Age at Marriage : Actual age of marriage was considered and scores were awarded as follows :

	Category	Scores
1.	Below 15 years	1
2.	15 - 18 years	2
3.	Above 18 years	3

2. Training for Work Related to Household Industry and Gainful Employment.

	Category	Score
1.	Complete	3
2.	Incomplete	2
3.	No training	1

3. Leisure Time

	Category	Score
1.	More than 2 hours	3
2.	1 - 2 hours	2
3.	Less than 1 hour	1

4. Observation of Customs and Traditions

	Category	Score
1.	Always	1
2.	Sometimes	2
3.	Rarely	3

5. Authority and Power of Delegation of Work and (6) Help Received in Performing Household, Agricultural and Allied Work were Scored as Follows :

	Category	Score
1.	Always	3
2.	Sometimes	2
3.	Rarely	1

7. Freedom (i) to Spend (ii) Save and (iii) Control Over Use of Money were scored as follows :

	Category	Score
1.	Always	3
2.	Sometimes	2
3.	Rarely/Never	1

**Decision Making :** Decision making was a strong indicator of women's status. Therefore, almost equal weightage of scores was given to decision making (47 per cent) and other general indicators (53 per cent). The various aspects of decision making have been listed below. It included decisions related to personal, family and farm aspects. Each aspect had further detailed and probing statements. Weighted averages were calculated for all statements on each aspect and status was measured on equal 3 point scale.

	Category	Score
1.	Independent decision	3
2.	Joint decision	2
3.	No decision	1

The maximum score was 51 and minimum 17. On the basis of total scores obtained the respondents were categorized as follows



Level of Status	Score Range
1. Low	upto 28
2. Medium	29-39
3. High	40-51

xiv. Household Development

It included the indicators of household development which have been categorized as primary and secondary on the basis of literature reviewed. (Ganguli and Gupta 1976). Each household development indicator comprised of detailed statements. Weighted averages were calculated for all the statements on each indicator and household development was measured on 3 point scale.

**Primary Indicators**

1. Housing Conditions

a. QUALITY OF CONSTRUCTION

Category	Score
1. Good	3
2. Average	2
3. Poor	1

b. FACILITIES IN THE HOUSE

i. WATER SUPPLY

Category	Score
1. Within house	3
2. Nearby source	2
3. Distant source	1

ii. ELECTRICITY SUPPLY

	Category	Score
1.	Fairly regular	3
2.	Irregular	2
3.	No supply	1

iii. MAINTENANCE OF HOUSE

	Category	Score
1.	Good	3
2.	Average	2
3.	Poor	1

2. Family Health Status

- a. FREQUENCY OF ILLNESS : It was observed for self, husband and children and scores were awarded as follows :

	Category	Score
1.	Frequently	1
2.	Sometimes	2
3.	Rarely	3

- b. HEALTH STATUS : It was monitored for self, husband and children.

	Category	Score
1.	Good	3
2.	Average	2
3.	Poor	1

c. IMMUNISATION FOR CHILDREN

	Category	Score
1.	Complete immunisation for all the children	3
2.	Incomplete immunisation	2
3.	No immunisation	1

3. Food Adequacy

Food adequacy per consumption unit in terms of calorie requirement was compared with I.C.M.R. standards and scoring was done as follows :

	Category	Score
1.	More than adequate	3
2.	Adequate	2
3.	Inadequate	1

4. Expenditure Pattern and Saving

a. EXPENDITURE PATTERN : Expenditure pattern was also assessed on the basis of per consumption unit as calculated for food adequacy. It was categorized and scored as follows :

1.	High expenditure	=	Mean + 1 S.D.	=	3
2.	Average expenditure	=	Mean	=	2
3.	Low expenditure	=	Mean - 1	=	1

(Food adequacy and consumption expenditure per consumption unit has been described in Appendix A-V).

**b. SAVING**

	Category	Score
1.	Sufficient saving	3
2.	Average saving	2
3.	No saving	1

**Secondary Indicator**

**1. Leisure Time**

	Category	Score
1.	More than 2 hours	3
2.	1-2 hours	2
3.	Less than 1 hour	1

The maximum expected score for household development was 27 and minimum 9. On the basis of total scores obtained by the respondents, the level of household development was categorized as follows :

Level of Household Development	Score Range
1. Low	upto - 15
2. Medium	16 - 21
3. High	22 - 27

**7b. Statistical Analysis of Data**

The data collected were coded by assigning code numbers. Data were analysed by employing descriptive as well as relational statistics. The entire data were analysed by comparing employed

and non-employed groups, and representation of the overall sample was also made in addition.

7b. (i) Descriptive Statistics

The data were analyzed in frequencies, percentages, mean and standard deviation for demographic variables, time-use pattern in various tasks, occupational profile of employed respondents, status of respondents, household development, methodologies used to estimate economic role performance and economic contribution of respondents.

7b. (ii) Relational Statistics

**Economic Role :** Economic role performed by respondents has been assessed in two stages.

1. Estimation of Non-market Work : It referred to the quantification of time spent in performing productive household, agricultural and allied tasks in terms of money value by employed and non-employed respondents.

2. Estimation of Economic Contribution :

(a) **FOR NON-EMPLOYED RESPONDENTS** : It included the valuation of time spent in terms of money in non-market work only, as they were not gainfully employed.

(b) **FOR EMPLOYED RESPONDENTS** : It included the valuation of time spent in terms of money value in non-market and income earned through participation in market work.

The following methods were used to ascertain the economic role performed by both employed and non-employed respondents on same data set.

#### **Method I**

##### **Market Alternative : Individual Function Cost (MA-IFC)**

This method assumes hiring a market replacement for each separate function in the household. The time spent by the respondent on each of such activities like meal preparation, care of house, child care, is valued at the market wage for each of these services.

The investigator contacted the labour office at Simla in Himachal Pradesh to know the wages prescribed by the state government in tribal area where the study was carried out and obtained the wages of workers who performed similar services as carried out in households. The market wages computed for the purpose of the study were notified w.e.f. 1.4.91.

The market wage estimates of the value of household, agricultural and allied work were consistently conservative, and they provided a minimum estimate of value, although in tribal area 25 per cent hike is given in wages, it being a difficult area to work. The added value of such benefits was not included while determining estimates of wages for these activities on the assumption that only local persons will be

replaced for performing household work (Gauger and Walker 1973).

The values estimated are conservative as it would be difficult to hire someone at these rates for relatively small amounts of time devoted to the same tasks. Time spent in child care, for instance, was valued at the rates for an attendant and not at the rates for a worker with specialized education in child development. Time spent in meal preparation was valued at the rates for an Indian style ordinary 'Dhaba' cook and not with specialized restaurant cook of a city. Deliberations with experts in the field were helpful to determine wage rates for overlapping activities. Moreover, average values of various non-market tasks were applied to neutralize the effect of overlapping activities.

Thus, the hourly wage rates so assigned by the government were applied to the amount of time spent by the respondent in performing each productive task in tribal area of Bharmour where the study was carried out (Appendix A-III). There are two approaches of calculating it :

- A. **Activity-wise for the Whole Sample** : The monetary value of non-market work was computed by multiplying the mean time spent by all the respondents on each of the productive task per day and per month with the corresponding wage rates for each type of task. Thus, the monetary value of all the productive tasks were added and then the average monetary value for all the respondents was arrived at.

**B. Respondent-wise from all the Activities :** The monetary value on non-market work was computed by multiplying the time spent by a respondent on all productive tasks per day and per month with the corresponding wage rate for each productive task. Thus, the monetary value of productive tasks of all the respondents was added and the average value of time spent on non-market work/productive activities was arrived at for all the respondents.

Thus, by using the above method one arrives at economic role of :

**Employed Respondents :** It included estimated monthly monetary value of time spent in non-market productive work as mentioned above + actual earnings from market work for each and every employed respondent in the sample.

**Non-employed Respondents :** It included estimated monthly value of time spent in non-market productive work for each and every non-employed respondent in the sample.

## **Method - II**

### **Opportunity Cost of Time**

According to this approach, the opportunity cost of time, is the wage foregone by abstaining from market work and choosing to remain at home. This approach is based on



utility maximising framework. This method assumes that time is allocated among its uses in the same way as income is distributed among competing goods and / services. In equilibrium, the marginal productivity is the same across all activities - work in the market, leisure, or home production.

A. Based on Earning Function

Steps

- i. **Estimation of an Earning Function (Y)** : Estimation of an earning function is based on data of employed women's earnings and time spent in market work to impute the expected wages of those who do not work in the market. It is based on Mincerian earning function (Mincer, 1974), regressing the hourly wage rate expressed in natural logarithms on the wage determining variables. The explanatory variables used in the present study were the women's education (EDU), education variable squared (EDU. SQ), which allows for the effect of schooling on wages to be nonlinear.

Work experience (EXP), and the experience variable squared (EXP. SQ) to measure the rate of growth of earnings with increasing experience, education and experience multiplied (EDU. X EXP).

The estimates of wage regression are given below ('t' values are in parantheses).

$$Y = 5.4655 + \frac{0.044}{(0.581)} (EDU) + \frac{0.009}{(1.374)} (EDU)^2$$

$$+ \frac{0.135}{(3.286)^{**}} (EXP) - \frac{0.00166}{(-1.062)} (EXP)^2 - \frac{0.0038}{(-1.323)} (EDU \times EXP)$$

$$R^2 = 0.46$$

$$'F' \text{ ratio} = 16.573^{**}$$

\*\* = Statistically significant at 0.01 level.

The results showed that out of the five explanatory variables, only experience turned out to be statistically significant. This may be due to the fact that out of 100 observations 52 per cent respondents were illiterate. The mean education was only 4.5 years. This might have led to education not explaining much variation in income. Forty six per cent variation in earnings was explained by these variables. The 'F' ratio turned out to be statistically significant at 0.01 level of significance indicating overall goodness of fit of the model. The co-efficients of the explanatory variables show that one year increase in schooling, schooling squared, increase in experience by one year, experience squared and education and experience interaction led to 0.044 per cent, 0.009 per cent and 0.135 per cent increase and 0.00166 per cent and 0.0038 per cent decrease in earnings respectively.

- (ii) **Estimation of Opportunity Cost of Per Unit Hour of Time Spent in Market Work (PHW)** : The estimates of wage equation (Y) were used to derive the opportunity cost per unit (hour) of time for each and every woman in the sample working and non-working.

Hourly wage rate is obtained by dividing monthly estimated earnings (by working women in market employment) by monthly hours of work in the market.

$$\text{Per hour wage (PHW)} = \frac{\text{Estimated mean monthly income}}{\text{Mean monthly hours of work in the market}}$$

$$\text{PHW} = \frac{423.09597}{160.3} = 2.6394$$

- (iii) **Estimation of Non-market Work** : The calculated per hour wage (PHW) is then multiplied by time spent in each non-market productive activity and this gives the value of non-market work for each and every woman in the sample.

- (iv) **Thus the Economic Role Performance for :**

- a. **Employed Respondents** : included estimated monetary value of time spent in non-market productive work as mentioned above + actual earnings from market work for each and every employed respondent in the sample.

- b. Non-employed Respondents : included estimated monthly value of time spent in non-market productive work (mentioned above step iii) for each and every respondent in the sample.

Note : The Opportunity Cost Method was tried with 2 more approaches. The methods, results and reasons of not using these methods have been included in Appendix A-IV.

### 7c. Testing of Hypotheses

Statistical analysis was carried out to test the relationship between selected variables.

1. Chi-square test was computed to determine : the association between economic role and personal, family and situational variables. Further Z-test was employed between significant variables and economic role to find out the level of relationship.
2. Pearson's Product Moment Correlation Coefficient ... was computed to test :
  - (a) The association between economic role and status of respondents.
  - (b) The association between economic role and household development of respondents.
3. 't' - test was used to determine the differences between two groups i.e., employed and non-employed on the following

- a. Time Spent on Various Tasks.
- b. Status of Respondents.
- c. Household Development.

4. The Statistical Package for Social Science (SPSS/PC-1) was carried out for statistical analysis of data such as : Multivariate Analysis was computed to find out significant differences in time spending pattern in performance of household, agricultural and allied activities and selected variables. It was followed by Univariate 'F'-test to determine the differences in time spent in individual tasks i.e., household, agricultural and allied. When significant 'F'-values were found Scheffes' procedure was carried out for further comparison. This procedure is widely used for making post hoc comparisons. The Scheffe's method is more rigorous than other multiple comparison methods and it permits evaluation of any and all comparisons, independent or not including those suggested by the outcomes of study.

Multiple Regression Analysis was employed to predict the impact of selected variables on :

- (a) Status of tribal women.
- (b) Household development.
- (c) To determine the earning function in computing monetary value of economic role of respondents.

The minimum level of significance required for judging the relationship under present study was 0.05 level of probability.