CHAPTER-III
DATA AND METHODOLOGY

This chapter provides an overview of methodological issues adopted for carrying out research on various problems of females headed households and its determinants. The Methodological framework discussed under the following sub heads: Operational definitions, analytical framework, description of data including area of study, sample size, sample design and method of data collection, description of data gathering tool, variables and measures and brief description of data analysis.

3.1 Operational definitions

The head of the household is usually identified with the person who has the greater authority in the family, who controls the general affairs of the family, including decision-making, concerning its economic, social and political affairs.

Within the household, women are regarded as the most stable and essential members for production and reproduction. At the same time the status of women, as well as the economic position tends to be determined by the occupational and social status of the household male breadwinner in the family. But sometimes the role of adult male member in the family may change due to widowhood, divorce, separation, migration of male member for a long time or loss of economic function by resident male due to severe disability or illness. The changing role of adult male member in the family within given economic and social context affects the household structure. With this situation the female-headed or single-mother household is one of the most prominent (Buvinic and Gupta 1997; Chant 2003).

Thus the concept of women headed households is useful to identify a growing number of “manless” households or households with no permanent or temporary male resident contributing to household income.
The present study defines two types of female headed households: namely actual FHHs and pseudo FHHs

3.1.1 Actual female headed households

Actual FHHs are the households with woman head earning more than 60 percentage of the household income and is the chief decision maker and contribute to the household’s welfare by providing care for children and aged in the family or other support, with out any adult male earning member in the family (18-60 years). This situation arise either through divorce or separation, widowhood or male breadwinner’s earnings and decision making power are lost due to long-term sickness or disability, it also contains households with only never married women.

3.1.2 Pseudo female headed households

Pseudo FHHs is defined as households with out regular presence of male head in the family and an adult woman irrespective of marital status is providing daily household welfare through caring for children and aged persons in the family or other non-financial support without being the economic provider and chief decision maker

3.2 Analytical Frame Work

With the permanent absence of male member in the family the women with chronic life events have to face economic problem and over work load creates different types of stresses including mental stress. Children belong to these single mother causes problems. Also with the temporary absence of male member through migration causes economic benefits to the family but stresses due to single responsibility and high level over parenting causes problem among children. The conceptual frame work used for the analysis of the present study is given below.
Conceptual framework

- Female Headed Households
- Actual Female Headed Households
- Pseudo Female Headed Households
- Economic Problems
  - Life strain events
  - Permanent absence of male earning member
  - Absence of male earning member through migration
  - Better economic Condition
  - Over caring of Children

Problems among children
3.3 Data

According to census report the proportion of female headed households has increased from 22 percent in 1991 to 24 percent in 2001. The study attempts to investigate the back ground characteristics of two types of female headed households in Kerala (namely actual FHHs and pseudo FHHs). For studying the problems of female headed households secondary data are not available in the census or in any other secondary sources. Therefore primary data were collected for the study.

3.3.1 Area of study

To represent the influence of regional variations one district each from south, central and north Kerala, namely Thiruvananthapuram, Thrissur and Kannur were selected for the study. Thiruvananthapuram is the southern most districts and the capital of Kerala state with 5.64 percent of total geographical area of the state accommodate 10.16 percent of the total population. The district has recorded a sex ratio of 1088 females per 1000 males in 2011 Censes. Percentage of female and male migration is comparatively low in the district.

There are 11 blocks representing Rural and 5 Municipalities and Thiruvananthapuram Corporation representing urban population in Thiruvananthapuram district. From the above Vamanapuram block and Thiruvananthapuram Corporation were selected randomly. The panchayat selected from Vamanapuram block is Manikkal. From the Manikkal panchayat the 6th and 11th wards were selected randomly for the study. The wards selected from Thiruvnnthpuram Corporation were the 20th and 23rd wards.

Thrissur district representing the central Kerala has 7.8 percent of total geographic area of the state accommodates 9.41 percent of the total population. The sex ratio is 1109 females per 1000 males in 2011. Percentage
of migrant population is comparatively higher in Thrissur district. There are 18 blocks and 7 municipalties and Thrissur Corporation representation rural and urban population in Thrissur district. From the above Irinjalakkuda block and Thrissur Corporation were selected randomly. The panchayat selected from Irinjalakkuda block is Parappukkara. From the Parappukkara panchayat the 7th, 6th, 10th, 9th, 14th and 7th wards were selected randomly for the study. The wards selected from Thrissur Corporation were the 10th and 15th wards.

Kannur district representing the northern Kerala has 7.6 percent of total population covers 7.6 percent of the total area of the state. The sex ratio was 1133 females per 1000 males in 2011 Censes. In case of migration male predominates in all types of migration.

There are 7 blocks and 6 municipalities in Kannur district. From the above Payyannur block and Payyannur municipality were selected randomly. The panchayat selected from Payyanur block is Ramathally. From the Ramathally panchayat the 4th and 5th wards were selected randomly for the study. The total population in Payyannur was 768734(census 2001) and had land area 54.63 sq.kms. The wards selected from Payyannur municipality were the 22, 23, 25th and 26th.
3.3.2 Sample size

As the proportion of FHHs in Kerala is about 23 percent, the following criteria have been used for the calculation of sample size for the study

Sample size \( n = \frac{z \times p \times q}{d^2} \)

Where \( Z \) = Standardized Normal deviate (\( Z \)-value)

\( p \) = proportion of prevalence

\( q = 100 - p \)

\( d \) = Expected precision

i.e. \( n = \frac{(1.96)^2 \times 23 \times 78}{4^2} = 431 \)

That is, the minimum sample size required is 431. The number is rounded off to 500 and the sample size is fixed as 500.

3.3.3 Sample design

Out of 500 households selected 301 were actual FHHs and the remaining 199 households were pseudo FHHs the sample size in each district was calculated on the basis of the percentage distribution of FHHs in each district in census 2001, using the formula.

Sample size in each district = 500 \( \times \) (% of FHHs in each district).

To find the required number of rural and urban samples in each district, proportions of rural and urban populations in the district in census 2001 are used.
Kannur - 159

Rural = 70 (44% of total FHHs -census (2001))

Urban = 89 (56% of total FHHs)

Thrissur - 164

Rural =123 (75%-of total FHHs)

Urban =41 (25% of total FHHs)

Thiruvananthapuram - 177

Rural =127 (72%-census (2001))

Urban =50 (28% of total FHHs)
Flow chart showing the sampling Distribution

KERALA STATE

SOUTH THIRUVANANTHA PURAM
- URBAN
  - THIRUVANANTHA PURAM CORPORATION
    - Wards20&23
      - Sample 52
        - Sample size125
  - RURAL
    - VAMANAPURAM BLOCK
      - Wards6&11
        - Sample size125

CENTRL THRISSUR
- URBAN
  - THRISSUR CORPORATION
    - Wards10&15
      - Sample size41
- RURAL
  - IRINJALAKKUDA BLOCK
    - Parappokara panchayat
      - Wards7&14
        - Sample size123

NORTH KANNUR
- URBAN
  - PAYYANNUR MUNISIPALITY
    - Wards22&26
      - Sample size85
- RURAL
  - PAAYYANNUR BLOCK
    - Ramathally panchayat
      - Wards4&9
        - Sample 74
3.3.4 Data collection

Primary data for this study were collected from the selected households using a structured interview schedule questionnaire, in case of both types of households the information regarding socio economic and demographic characteristics of households and different types of stressors and problems related to the children are collected from the female head of the family under the age group of 15-59. The data was collected from the female heads of each households by personal interview method using the interview schedule. The field work for the study was conducted by the author herself with the help of Panchayat ward members, Accredited Social Health Activists(ASHAs) and Anganwadi workers in the respective areas.

3.4. Variables and measures

Certain measures are taken for analyzing the different types of problems among female headed households.

3.4.1. Economic problem among female headed households

3.4.1a Actual income

It is a usual practice of our society to under report income. so poverty measure based only in terms of income is misleading. Similar is the case of using consumption as measure of poverty. Some times a high-income household with a single woman might consume little and should not be treated as poor. Similarly individuals with fewer children do not need to spend as much for daily consumption as do those with more children; they are more likely to save from their income.

On the other hand some poor households with small children consume more in terms of their education or their health care. Individuals with fewer children do not need to spend as much for daily consumption as do those with more children, and poverty can’t measure only in terms of consumption expenditure.
Therefore finding out the real financial condition of the households under study, a new variable named ‘actual income level’ has been calculated using the income and expenditure reported for each household. Household having a reported income or expenditure in particular range has been assigned a value in the five point scale of actual income level. For the purpose of further analysis the five values are further recorded in to two groups namely ‘poor’ and ‘rich’.

3.4.1. b Deprivation in terms of assets

The indicators used for analysing the deprivation in terms of assets are

1. Ownership of assets

Land

a) landless (coded as 1)

b) less than 10 cents (coded as -2)

c) 10 and above (coded as -3)

Live stock

a) Poultry (coded as yes= -1, no= 1)

b) Cattle (coded as yes= -1, no= 1)

Source of drinking water

a) Own well/pipeline (coded as -1) b) Shared well/public tap/others (c coded as 1)

Ownership of savings account (coded as yes= -1, no= 1)

Electric supply (coded as yes= -1, no= 1).

Ownership of house (yes= -1, no= 1)
2. **Durables goods**

Lack of durable goods are coded as

- a) mattress (yes=-1, no=1)
- b) pressure cooker (yes=-1, no=1)
- c) chair (yes=-1, no=1)
- d) cot/bed (yes=-1, no=1)
- e) table (yes=-1, no=1)
- f) electric fan (yes=-1, no=1)
- g) radio (yes=-1, no=1)
- h) sewing machine (yes=-1, no=1)
- i) telephone (yes=-2, no=2)
- j) computer (yes=-4, no=4)
- k) refrigerator (yes=-3, no=3)
- I) watch (yes=-1, no=1)
- m) Bicycle (yes=-1, no=-1)
- n) motorcycle (yes=-4, no=4)
- o) four-wheeler (yes=-6, no=6).

3. **Housing condition**

Kuccha (coded as 1), Semi pucca (coded -2), Pucca (coded as -3). Sum of scores of assets namely ownership of assets, ownership of durables and Housing condition items are calculated for each households and the values obtained are classified as follows values up to (mean – S.D) are termed as low and sum of scores ranging from (mean – S.D) to (mean + S.D) are termed as medium and sum of scores above (mean +S.D) as high.

3.4.2 **Stresses among female headed households**

3.4.2.1 **Financial stress**

Family income sufficient (yes=0, no=1), having liability (yes=1, no=0), and having difficulties in financial management (yes=1, no=0) sum of scores of all these items up to (mean-S.D) are termed as low, sum of scores ranging from (mean-S.D) to (mean +S.D) are termed as medium and sum of scores above (mean +S.D) as high.

3.4.2.2 **Parental stress**

1. Difficulties in child care and supervision (coded as yes=1, no=0)

2. Feel anxiety about the future of the children (coded as yes=1, no=0). Scores of the above items are added. The sum obtained are classifies as ‘0’ and ‘>0’ ie, (1 and 2). The value ‘0’ means there is no parental strain and ‘>0’ means there is parental strain.
3.4.2.3 Stress related with domestic duties

1. If no other person helps the head in doing a household duty or if the duty is done only by heads it is coded as ‘1’ and if the head is helped by others in doing the duties it is coded as ‘0’.

The main duties considered are

a) Cooking b) washing c) shopping d) bill payment e) caring of children f) caring of aged g) other duties like supervision of land, construction of building etc. Also the answer to the question do you feel difficulty in managing household duties is coded as yes=1, no=0.

Scores of all these items are added and classified as follows.

Values up to (mean-S.D ) is termed as low, sum of scores ranging from (mean-S.D ) to (mean +S.D ) is termed as medium and sum of scores above (mean +S.D ) as high.

3.4.2.4 Role strain

Work-family conflict is a bi-directional construct representing two distinct types of conflict: (1) work interfering with family life (work -> family conflict) and (2) family life interfering with work responsibilities (family -> work conflict) (Gutek et al., 1991; MacEwen and Barling, 1994; O’Driscoll et al., 1992; Williams and Alliger, 1994.

The underlying rationale is that high levels of dissatisfaction associated with a given role may be experienced if one is frequently struggling to meet the demands of that role because of interference from another role (Frone et al., 1992a). That is individuals who experience high levels of work-family conflict may report elevated levels of family dissatisfaction because they are more likely to feel overwhelmed by the ensuing struggle to meet their responsibilities at home and therefore experience a reduction in the quality of their family life.
The items used for assessing the work-family conflict are “Are you satisfied with your present work (coded yes=0, no=1) and “Do you have any difficulty in coordinating your work and family responsibilities (coded as yes=1, no=0). Scores of the above items are added. The sum obtained are classifies as ‘0’ and ‘>0’ ie, (1 and2).the value ‘0’ means there is no role strain and ‘>0’ means there is role strain

3.4.2.5 Health problem

The main health problems (after husband’s absence) considered are Frequent head ache, blood pressure, disturbed sleep, asthma and heart diseases Female head has health problem, if the head is suffering from many of the above stated diseases. That is health problem is computed as frequent head ache=1/blood pressure=1/ disturbed sleep=1/astma=1/heart diseases=1/any other diseases=1 and the value ‘0’ means there is no health problem

3.4.3 Support from others

Perhaps, the most common finding across the different chronic diseases and conditions reviewed is the importance of social support, especially by spouses and other family members, in helping people cope positively with their condition. There was a widespread gender bias towards men in terms of the support received from their families, and this helped them respond better to their illness. Women were less likely to receive support, leading to less positive coping. Women were also more prone to accept their condition as part of themselves, rather than to see it as a challenge to be overcome, as their male counterparts tended to do.

In the present study support received is measured based on the source of help received in terms of financial help (cash or kind). Physical help or emotional support received from their relatives, friends or any other organisations. Source of help received from others are scored as follows.
Parents/siblings (Scored as 5), other relatives (Scored as 4), Coworkers/friends (Scores as 3), Employer (scored as 2) and Any other source (Scores as 1). Sum of all these items all these items up to (mean-S.D) is termed as low, sum of scores ranging from (mean-S.D) to (mean +S.D) is termed as medium and sum of scores above (mean +S.D) as high.

3.4.4 Personal resources

Personal resources is defined as the sense of control over one’s life or the extent to which individuals feel in control of their lives. Personal mastery or perceived control has been described as the degree to which individuals believe that they have control over the events that occur in their life (Pearlin & Schooler, 1978) and personal resources of the respondents were measured by response to four questions

1. Do you feel lack of confidence in decision making at the time of emergency? (Scored as 2=no and 0=yes)

2. Did you perceive any personal benefits by being the head of the households?
   a) Increased ability to take independent decision b) Increased ability to handle matters c) Increased ability to face adverse situation (Scores as 2=yes, 0-no)

Self esteem was measured using the question

3. How you perceive your present situation?
   (Scored as 2 -Happy, 1-satisfactory and 0-unsatisfactory). The scores are added and the sum items up to (mean-S.D) is termed as low, sum of scores ranging from (mean-S.D) to (mean +S.D) is termed as medium and sum of scores above (mean +S.D) as high.
3.4.5 Psychological problem

For measuring the psychological problem among female heads the main questions considered are

a) loss of identity b) feeling of isolation c) exploited in the society d) depression e) anxiety f) unhappiness) helplessness i) lack of peace of mind k) feeling of insecurity l) feeling of stress m) feeling of worthlessness and all these questions were coded as (0=never, 1=occasionally, 2=always). sum of all these items up to (mean-S.D ) is termed as low, sum of scores ranging from (mean-S.D) to (mean +S.D ) is termed as medium and sum of scores above (mean +S.D ) as high.

3.4.6 Children’s behavioural functioning

Children’s behavioural functioning was measured using mother’s report on child behaviour Negative behaviour (scored as yes= +2 and no=0)

1. Quiet and submissive

2. Violent and unmanageable

3. Lost interest in studies

4. Lost confidence in doing things

5. Spend more money

6. Behave irresponsible

Increase sense of responsibility (reverse coded.)

Negative peer group influence (scored as yes =+3, no=0)

Break in education (scored as yes =+4, no=0)

Sum of all these items up to (mean-S.D )is termed as low, sum of scores ranging from mean-S.D to( mean +S.D )is termed as medium and sum of scores above (mean +S.D) as high
3.4.6a Over parenting

Over parenting involves various activities that single mother spend with their children.

The following activities are coded as 0 = never; 1 = some times; 2 = always (a) in leisure time away from the home together, (b) at home working or playing together, (c) having private talks (d) share your problem (reverse coded) e) give preference in children’s decision making sum of all these items all these items up to (mean – S.D) is termed as low, sum of scores ranging from (mean-S.D) to (mean+ S.D) is termed as medium and sum of scores above (mean+ S.D) as high

3.5 Method of analysing back ground characteristics

The indices calculated for the female headed households were cross classified with back ground variables to find out the association between variables. For analyzing the significance of association, chi-square analysis is employed. Logistic regression model is used for finding out the probability of occurring a state of affair.

3.5.1 Chi –square analysis

In a contingency table if the observed frequency in each of the cells is equal to the expected frequency in that cell, the attributes would be completely independent each other .difference between observed and expected values of various cells points to some degree of association between attributes .to find the degree of association ,χ² value is calculated.

The value of χ² is based on the difference between observed values and expected values and is calculated as

\[ \chi^2 = \sum \frac{(f - f_o)^2}{f_o} \]
Where \( f \) denotes the observed frequency and \( f_e \) the expected frequency. Degrees of freedom is calculated as \( df=(r-1) \) (c-1) if the calculated value of \( \chi^2 \) is greater than the table value of \( \chi^2 \) (at a given level of significance) corresponding to the given degree of freedom, the difference is significant.

### 3.5.2 Logistic regression model

Logistic regression model is used to find out the effects of different background characteristics on economic and psychological problems among female headed households as well as the effect of problems and different types of stresses among female headed households on problems among children of female headed households.

The dependent variables considered for the analysis are dichotomous in nature.

Let \( Y \) be the categorical dependent variable. Then \( Y \) will take the dummy values of ‘one’ or ‘zero’ as the female head has low or high level of different types of problems.

Let ‘\( p \)’ be the probability that the problem is in the category ‘one’ and \((1-p)\) is the probability that the respondent is in the other category.

Then the basic form logistic function is given by

\[
P = \frac{1}{1 + e^{-z}} \quad \text{----------------- (1)}
\]

Where ‘\( p \)’ is the probability of occurrence of an event and ‘\( z \)’ is the predictor variable and ‘\( e \)’ is the base to natural logarithm.

Subtracting 1 from both sides, the equation will become

\[
1-P = 1 - \frac{1}{1 + e^{-z}}
\]
\[ i.e., \ 1 - P = \frac{e^{-z}}{1 + e^{-z}} \]  \hspace{1cm} (2)

Dividing equation (1) by equation (2)

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

Taking natural logarithm of both sides

\[ \log \left( \frac{P}{1-P} \right) = z \]

Where \( \left[ \frac{P}{1-P} \right] \) is called as the odds and the quantity \( \log \left[ \frac{P}{1-P} \right] \) is called the log odds or the logit of \( P \).

The logistic regression equation estimates the effect of unit change in the independent variables on the logarithm of the odds that the dependent variables taken when controlled for the effect of other independent variables.

In logistic regression the parameters of the model are estimated using maximum likelihood method. That is the coefficients that make our observed results most “likely” are selected. Since the logistic model is nonlinear, an iterative algorithm is necessary for the parameter estimation. Since the likelihood is less than 1, it is customary to use 2 times the log of the likelihood as a measure of the how well the estimated model fits the data. Good model is one that results in a high likelihood of the observed results.

For the analysis of data using different statistical techniques, SPSS computer package is used.

3.6 Limitations of the study

The present study covered two types of female headed households. One is the households headed by woman who is the chief economic provider
and decision maker and the other is woman who heads the households only with the temporary absence of male economic provider. So the marital status of head is concerned, majority of the heads in the first category is not in marital union while the majority of female heads in the second category are currently married. So certain type of analysis based on marital status could not be made possible. Similar to the case of occupational status, major share of heads in the first category is working while heads in the second category is not working. So a comparative study of role strain among female headed households is not possible. Since the study is not longitudinal it is not possible to find out the changes in problem of female headed households.