CHAPTER - III

METHODOLOGY

3.0 Introduction

The methodology applied in this current study on **"A comparative analysis of working and non working women and their time management in Mahe District"** is discussed in this chapter under the following heads:

3.1 Selection of the problem
3.2 Selection of the area
3.3 Profile of the study area
3.4 Sample design and selection of sample size
3.5 Data collection and period of study
3.6 Quantitative tools applied
3.7 Monetisation of ESNA activities
3.8 Concepts

3.1 Selection of the problem

Labour is an integral factor of development. The quality and quantity of labour affect specialisation and division of labour as well as the market for goods and services. The utilization of labour force mainly depends on supply and demand for labour. The concept of employment of women has started playing a dominant role in the economic life of the country as well as at the global level. It has been increasingly realized that women play a meaningful role in the context of prosperity of the country and for raising the standard of living. Female participation in economic activity is not only a matter of human justice but also a route to faster and more sustainable development. There has been a substantial contribution towards economic development by women all over the world. Expanding women participation in economic activities not only enhances their productivity and earning potential but also helps to reduce their dependency and enhances their status besides helps to reduce fertility and slow down population growth there by improves child health and bestows greater decision making inside and outside the household thereby raising their

own standard of living and in the long run it will also help to reduce poverty and slow down population growth there by improves child health and bestows greater decision making inside and outside the household thereby raising their own standard of living and in the long run it will also help to reduce poverty and(Sarala Gopalan,1995) Women in India constitute nearly half of the country's population accounting for 586.5 million in absolute numbers as per(2011,Census) They constitute one third of the labour force. The dual role of women providing care to members of the household as well as undertaking paid employment outside the home shows that change is a foot in the global economy and it is bearing a woman's face."Manpower being the basic resource of any country and women constituting more than 50 percent of the population of India we cannot hope to enrich India by neglecting and ignoring women" (Dr.B.K.Krishnaraj Vanavarayar). A recent United Nations Report (2009) concluded that economic development is closely related to the advancement of women. In nations where women have advanced, economic growth has usually been steady. By contrast, in countries where women have been restricted, the economy has been stagnant (R.K.Kushwaha Atish Verma, 2015). No country can have an edge over other countries if the status and role of women is not improved. For centuries women were oriented to limit their ambitions and were less exposed. Presently women are getting exposed hence their visibility in economic sphere has been enhanced. But their role is usually under estimated. In this context it is stressed that reliable techniques have to be evaluated to measure the contribution of women to the family, especially non monetary contribution (Indira Hirway, 2002). The survey carried out by the Central Statistical Organization (2000) showed that women spent about 20.61 percent of their time on unpaid activities and 11.14 percent for paid activities. In the case of men it was 2.17 percent for unpaid activities and 24.98 percent for paid activities. Hence the researcher has made an attempt to analyze how Working and non working women spent their time on various activities.

3.2 Selection of the area

Women who constitute one third of the labour force not only produce goods and services but are also prime sources of accelerating human race. Their active and positive participation in labour force and in production as well

as service activities cannot be overlooked (Muthuraja, 2000). According to 2011 census, female work participation was 11.9 percent higher than the previous census 2001 figure of 8.4 percent. But as majority of the women are engaged in non-income earning household activities, they are wrongly considered as unproductive and the substantial labour force that they constitute goes unnoticed and invisible. Ambiga Devi and Geetha (2004) in a survey sponsored by the Central Statistical Organization reported that women spent about 20. 61 percent of their time on unpaid activities and 24.98 percent for paid activities.

Mahe a tiny pocket of the Union Territory of Puducherry has a population of 41,816 persons with females numbering 22,673 and 19,143 males with sex ratio in favour of women, it being 1184 females per 1000 males (Census 2011). This is the highest when compared to the sex ratio of Puducherry district (1029), Karaikal (1047) and Yanam (1038) as well as at all India level (940). The female literacy rate was 97.25 percent and male literacy rate 98.63 percent in Mahe. In spite of this the work participation rate was 28.2 percent and the female work force participation was 11.9 percent. Various causative factors like social customs and traditions prevalent among the Muslims especially account for the low female work participation rate. This is warranted by the fact that male members get themselves employed at Gulf and other states discouraging women folk to go for work. Government schemes and concessions announced in Mahe district which is given below are all attributed to lower participation of women work participation.

a. Grant of money for conducting marriages of girls especially in Mahe region. An amount of Rs.10,000 is granted to the families of the poor for conducting marriages.
b. To conduct funerals and other rites, the Government grants Rs.1,500 for the poor families to conduct their last rites of their kith and kins.
c. Monthly unemployment allowances of Rs.1,000 are given to unemployed graduates. Similarly pensions are given to widows whose husbands served in Puducherry administration.

d. Pensions are given to the freedom fighters who fought for the liberation of Mahe from the rule of French.
e. Computer training is also given to students who have passed their +2 school examination with an amount of Rs.1,000.
f. Rations and supply of rice, sugar etc free of cost is distributed to households below poverty line (BPL) every month through fair price shops in the district.
g. For house constructions the Government provides Rs. 1 lakh to those who are poor and have low income.
h. Seats in professional colleges in and around the union territory of Puducherry is an added attraction of people to settle down in Mahe as the Government bears cent percent cost of professional education of its natives who are the residents for 5 years.

In the light of above facts the present study on "A comparative analysis of working and non-working women and their time management in Mahe district" is undertaken to assess the time management of both working and non working women in Mahe.

3.3 Profile of the Study Area

Mahe is one of the former French settlements in India. It was captured in 1725 by the French squadron and later on recaptured by the French on November 13th, 1748 under the French captain, Mahe de Labouroonais in whose name the settlement is known. They intended to have port facilities on the west coast for trade. The British captured Mahe on 13.12.1761 but it was returned to the French. It was again captured in the year 1817. Naluthara, Cherukallai and St.George Fort were restored to them on 14.11.1853. Mahe was declared as a Municipality on 12.03.1880. The whole territory was divided in to 17 communes each being given municipal status. The commune was administered by an elected municipal council under the chairmanship of Mayor. This old French system of municipal administration was replaced by Pondicherry Municipalities Act 1973 on 26th January 1974.

The independence of India accelerated the freedom movement in Mahe and it was liberated from colonial rule on 21.10.1948 under the non violent movement. It was short lived for a week till arrival of two French warships. The French were able to crush the freedom movement for a short period. It gained momentum slowly. But the French were forced to withdraw from the enclave of Cherukallai on 26th April 1954 and thereafter from Palloor, Pandakkal and Chalakkara on 8th May 1954. They finally left Mahe on 16th July 1954. The French Government made an agreement with the Government of India and left Pondicherry on 1st November 1954. The treaty of cession was signed during the year 1956 and was ratified by the French parliament in August 1962.

Location

Mahe is a part of the union territory of Pondicherry which comprises of four French settlements namely, Puducherry, Karaikal, Mahe and Yanam. It lies on the west coast interspersed with bits of territory of Kerala state. The settlement consists of five enclaves, Mahe town, Cherukallai, Chalakkara Pallor, and Pandakkal. Surrounded by Kerala State; Mahe is bounded on west by the Arabian sea, on the north by Mahe river in Kannur district of Kerala State and on the east and south by Kozhikode district of Kerala state. Mahe is situated between Badagara and Thalassery with 58 kms from Kozhikode, 24 kms from Kannur and 8 kms south of Thalassery town. It is at distance of 630 kms from Pondicherry. This town is situated on the west coast of the Indian Peninsula .Mahe lies on the geographical coordinates of 33^0 16'0'' North,78^0 30' 0'' East.

Mahe D*istric*t Map

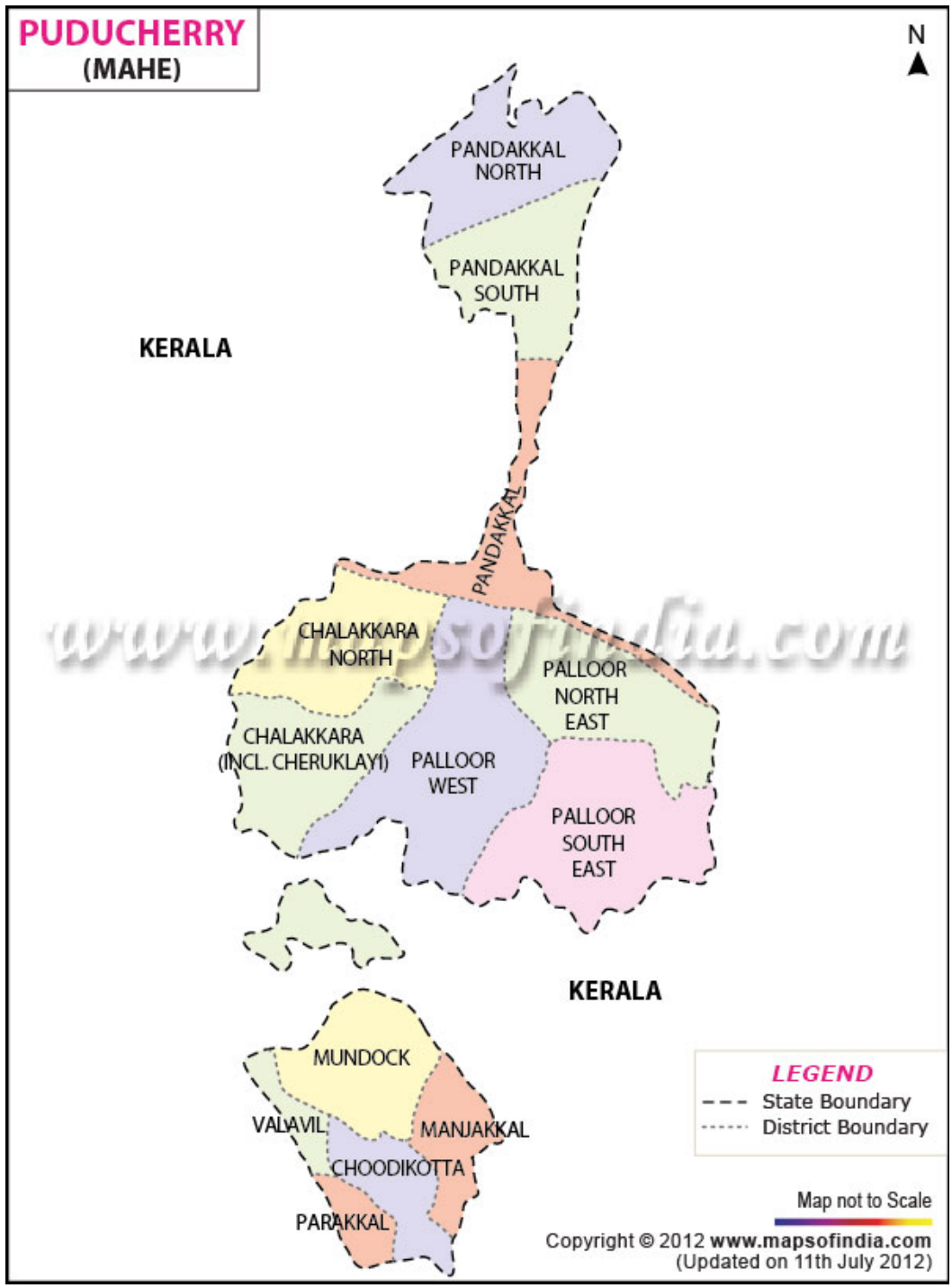

FIGURE - 1

Physical Features

The settlement is partly hilly consisting of a chain of seven small calcareous hills and plains. Mahe town, Cherukallai and Chalakkara are considered as hilly areas of the settlement. Pallor is partly hilly and Pandakkal is relatively flat sloping towards Ponniam river on its northern boundary

Area

Area of the settlement is 9 km^2, the smallest district in India.

Climate and Rainfall Conditions

The climate of the region is typical tropical maritime climate and has four seasons namely the dry weather from December to February, hot weather from March to May, south west monsoon from June to September and retreating or north east monsoon from October to November. The average annual rainfall of the settlement was 3,387 mm over three fourths of which was spread over the months of June to September from south west monsoon. The period from January to the mid of May is one of the continuous rise in temperature. April and early May are the hottest part of the year. January to August is relatively humid in the region.

Soils

There are no minerals in the region. The soil consists of top layers of earth for about 1.5.2.0 meters depth over strata of laterite stones.

Infrastructure

There are 6054 households in Mahe district in which 84 percent of the houses of Mahe have individual wells, as source of drinking water. About 12 percent of the households make use of tap water and as many as 2.84 percent of the households make use of hand pumps and a few of the others make use of tube wells, river, canal and spring water. But water is saline in most of the wells in the western side of Kozhikode -Kannur road of the town and in some other parts. During summer most of the wells dry up creating acute shortage of water.

Nearly 26.72 percent of the households have closed drainage system and as many as 28.90 percent of the households have open drainage for disposal of waste water. Yet 44.38 percent of the households have no drainage for the disposal of waste water. The sewage water of the town drains out to the sea and rivers. About 80 percent of the households have water closet and 7.96 percent of households have pit latrines. As many as8.49 percent of them do not have latrines.

Power supply in Mahe is facilitated form Kerala grid as per the agreement between the Government of Kerala and the Union Territory of Puducherry by the Government Electricity department. The length of the roads in Mahe is 110 kms. And there are 7,833 registered motor vehicles plying on the roads in Mahe district. There are four post offices, a telephone exchange and numerous public booths. There are five scheduled commercial banks and 5 co-operative banks operating in Mahe. The population per office is 7365.

The educational institutions are well dispersed throughout Mahe for easy access to children of all age groups. Mahe has 10 primary schools, a middle school, 2 high schools, 5 higher secondary schools, a Navodaya vidyalaya, a French school and a Government college, a polytechnic institute, a Government ITI and two B.Ed colleges. Two cooperative colleges have been started. There is one general hospital at Mahe and two sub centers one at Pallor and another at Pandakkal. Apart from this there is one ESI hospital, one Ayurvedic hospital and a Homeopathy clinic functioning at Chalakkara and at Mahe. Beside there are many primary health centers in Mahe catering to the health requirements of not only residents of Mahe but also from Kerala.

Mahe has a coastal length of 1km and the continental shelf of 15 sq.kms with 4158 fisherman population. There is one fish landing jetty at Mahe and two ice plants, a platform for drying fish. Mahe is located in the richest fishing area between Ponnani and Mangalore on the Kerala coast.

Demographic Features

The total number of non-workers in Mahe is 30,014 of whom there are 10,050 males and 19,964 females workers. The work participation rate is 28.2 percent of which 47.5 percent of them were male workers and females account for 11.9 percent. The selected statistical indicators of Mahe district is given below.

TABLE 1

SELECTED STATISTICAL INDICATORS OF MAHE (2011)

Indicators	Units	Description
Area	Km^2	9
Population	Person	41,816
Male	Person	19,143
Female	Person	22,673
Sex ratio	Per '000 males	1,184
Population density	Per sq.km	4,646
Literacy rate	Percent	97.87
Male	Percent	98.63
Female	Percent	97.25
Work participation rate	Percent	28.2
Male	Percent	47.5
Female	Percent	11.9
Total workers	Person	11,802
Male	Person	9,093
Female	Person	2,709
Non workers	Person	30,014
Male	Person	10,050
Female	Person	19,964
Other workers	Person	10,264
Male	Person	8,181
Female	Person	2,083
Religion		
Hindus	%	68.77
Muslims	%	30.98
Christians	%	2.22
Others	%	.037

Source: Census Report 2011

3.4 Sample design and selection of sample size

"Mayyazhi" as Mahe is called in Malayalam was only a small seashore town ruled by the king of Badagara. The Union Territory of Puducherry comprises of 4 enclaves namely, Puducherry, Karaikal, Mahe and Yanam. Mahe district consists of five revenue blocks, viz, Mahe town Cherukallayi, Chalakkara, Palloor and Pandakkal. There are 6054 households and has 4646 population density per sqkm. The five revenue blocks have 14 revenue wards, viz, I) Parakkal, ii) Choodikota, iii) Valavil, iv) Mundock and v) Manjakkal under Mahe town. vi) Chalakkara south and Cherukallayi, vii) Chalakkara north under Cherkallayi block. viii) Palloor South west, ix) Pallor south east, x) Palloor north east, xi) Pallor North West under Pallor block, xii) Pandakkal south, xiii) Pandakkal center and xiv) Pandakkal north under Pandakkal block. Since Cherukallayi is a small entity it is incorporated with Chalakkara south ward.

Multi stage sampling procedure was adopted in the selection of the sample respondents.

In the **first stage**, Mahe district in Union Territory of Puducherry was selected.

In the **second stage**, the 5 Revenue Blocks coming under Mahe district were selected.

In the **third stage**, the 14 Revenue Wards falling under Mahe district were selected.

In the **fourth stage** working women and non- working women in proportion to their work force were calculated. The following table gives the total number surveyed in each of the Revenue block.

TABLE 2

NUMBER OF WOMEN WORK FORCE AND NUMBR SURVEYED

S. No	Revenue Blocks	Statistics on working women		Statistics on non-working women	
		Actual	Surveyed	Actual	Surveyed
1.	Mahe town	636	76	5,023	63
2.	Cherukallai & Chalakara	384	46	3,885	49
3.	Palloor	596	72	6,905	86
4.	Pandakkal	467	56	4,151	52
	Total	2,083	250	19,964	250

The table above illustrates the number of working and non working women surveyed for the study. Mahe town includes five revenue blocks namely, Parakkal, Choodikotta, Valavil, Mundock and Manjakkal comprising of 636 working women. Using proportionate sampling technique the number to be surveyed from each block was calculated, totaling 250 each among working and non working women.

3.5 Data Collection and Period of Study

An interview schedule with questions on the family details, work details, time spent on various activities in a normal day, assistance received from family members, problems faced by women in work place, at home and society, the level of job satisfaction and motivational factors for women to enter job was prepared. A pilot survey was administered to a sample of 20 working and 20 non working women in the months of November - December 2013. Based on the problems in conducting the survey, the schedule was modified and the modified schedule (Annexure I) was administered to the sample units during January - April 2014. Data was collected using face to face interview method by the researcher.

3.6 Quantitative Tools Applied

The following quantitative tools were applied while analysing the data

3.6.1 X^2 test

3.6.2 Factor analysis

3.6.3 KMO and Bartletts test of Sphericity

3.6.4 Rating Scale

3.6.5 Discriminant analysis

3.6.6 Garrett's score

3.6.7 Percentages, averages and graphs

3.6.1 X^2 Test

To find out whether the socio- economic and demographic factors influence women to enter work force, X^2 test was applied.

$X^2 = \Sigma (O-E)^2 / E$;

O = Observed frequency

E = Expected frequency

If the calculated value of X^2 (Chi square) is greater than the theoretical value of X^2 at (r-1) (c-1) degrees of freedom (r number of rows, c number of columns), then it is inferred that women to enter work force is dependent on the chosen socio, economic and demographic factors otherwise not.

3.6.2 Factor Analysis

Factor analysis is defined as a class of procedures that are primarily used for data reduction and summarization (Malhotra & Birks, 2007). The goal of this procedure is to reduce a large amount of variables into a manageable number and explain the maximum amount of variance in the data. This is feasible by grouping the variables into specific factors, as the underlying dimensions that explain the correlations among a set of variables which are named (Malhotra & Birks, 2007).

Factor analysis was applied when analysing the level of job satisfaction of the working women. A large number of variables were resolved into fewer levels of variables called factors. To extract factors, varimax rotation was applied and the extracted factors were orthogonal. For getting factors SPSS 15 Version was used

3.6.3 KMO and Bartletts test of Sphericity

Kaiser- Meyer- Olkin measure of sampling adequacy is a statistic that indicates the proportion of variance in the variables that might be caused by the underlying factors. If the value is closer to one; it generally indicates that factor analysis is useful with the data and the value is less than 0.50 implies that factor analysis would not be useful. Bartlett's test of Sphericity explains whether the chosen variables are not related with each other so that they are unsuitable for structure detection. Small values (less than 0.5) of the significance level indicate that factor analysis is useful with the data.

In the given study, KMO and Bartlett's test of Sphericity was employed while deriving factors on the level of job satisfaction of the working women

3.6.4 Rating Scale

Likert rating scale was used in the study for the respondents to express their opinion on various statements pertaining to the work under study in a five point rating scale as (i) strongly agree, (ii) agree, (iii) neutral, (iv) disagree and (v) strongly disagree. At one extreme of the scale there is' strongly agree' with the given statement and at the other end 'strongly disagree' and between these two lie intermediate points. Each point on the scale carries a score '5', '4', '3', '2' and '1' respectively starting from 'strongly agree', 'agree', ' neutral', ' disagree' to ' strongly disagree'

3.6.5 Discriminant analysis

To know the discriminating power of selected variables for women to go or not to go for paid works in the selected sample discriminant analysis was used. The sample was divided into two groups based on whether the women in the sample are working or not. . Group I consists of working women and group II of non- working women. The chosen variables were

1. Number of family members with less than 5 years age
2. Number of family members with 5 to 15 years of age
3. Number of family members with age 15 to 59 years of age

4. Number of family members with sixty plus years of age
5. Educational level of the women respondents
6. Age of the respondents
7. Income of the husband
8. Educational level of the husband
9. Marital status of the respondent

For educational level the values were given as follows:

Illiterate - 0; Primary education -1; Secondary education -2; Higher secondary - 3; Under graduate - 4; Post graduate -5; Professionals -6

For marital status codes were given as below:

Married-1; Unmarried -2; Widows -3; Divorcee -4

Using SPSS 16 Version step wise procedure was applied in the estimation of discriminant function.

3.6.6 Garrett's Score

Garrett's scoring technique was used to obtain the views of the respondents on the problems they faced at home, society and at work place. To get Garrett's score the percent position was first obtained using the formula

$$\text{Percent position} = \frac{100(R_{ij} - 0.5)}{N_j}$$

Where R_{ij} = rank given for i^{th} problem

N_j = number of problems ranked by the respondents

Garrett scores were obtained from Garrett Ranking Conversion Table.

3.6.7Percentages, Averages and Graphs

Using SPSS 16 Version, percentages and averages were calculated. Graphs were also drawn.

3.7 Monetisation of Extended SNA Activities of Women

There are unpaid activities which had no economic value either to household or to the economy. An attempt has been made to compute the monetary value of unpaid activities performed by the women in the study. Out of the two methods, namely the opportunity cost method and the replacement cost method, the former method was used in the analysis.

The opportunity cost method values the unpaid work at the rate of market wage of the paid work that the women had chosen. The assumption is that the household member has foregone the earnings for home productions. Depending upon the type of paid work that a woman might have chosen, skill of the woman and availability of jobs for the woman there will be changes encountered while valuing work.

Valuation of unpaid housework largely being carried out by female members in households, measures the importance of contribution of males and females in the development of human capital. Dr. S.K. Nath has developed the following methodology to monetize the time spent on ESNA activities.

$$V = \Sigma \left[T^{C}_{A} * 52 \right] * \frac{\left[W^{C}_{A} \right]}{8} * P^{C}_{A} + \Sigma\Sigma \left[T^{AD}_{A.S} X52 \right] X \frac{\left[W^{AD}_{A.S} \right]}{8} X P^{AD}_{A.S}$$

V = Average annual value (in crores) of work done for the entire district

T^{C}_{A} = The weekly average time spent by an average child aged 6-14 years for the ESNA activities for the type of area 'A' (rural / urban)

W^{C}_{A} = The daily (8 hours) wage rate for the children aged 6-14 years in area 'A' (rural/ urban)

P^{C}_{A} = The projected population under the type of area 'A' (rural/urban) in the age group 6-14 years.

$T^{AD}_{A.S}$ = The weekly average time spent by an average individual aged 15 years and above for the ESNA activities for the type of area 'A' (rural/urban) and sex 'S' (male/female)

$W^{AD}_{A.S}$ = The daily (8 hours) wage rate for an individual aged 15 years and above in area 'A' (rural/urban) and sex 'S' (male/female)

$P^{AD}_{A.S}$ = The projected population under the type of area 'A' (rural/urban) and sex 'S' (male/female) in the age group of 15 years and above.

The above method monetized the ESNA activities by taking account the time spent on ESNA activities and the minimum wage rate prevailed in the study area according to age and sex.

The replacement cost method considers what it would cost to hire a worker to perform the household activities (OECD 2011). The formula for this estimation procedure of unpaid household work according to replacement cost method is:

In the present study, the researcher has applied the replacement cost method to compute the value of unpaid household work done by women. To carry out the analysis, a pilot survey was first made by collecting data from households engaging domestic helpers in Mahe District. A sample of ten households, having paid domestic servants for doing household chores, from each of the four revenue blocks distributed within the 14 wards were taken for the study. The amount paid for these maids for household chores along with the size of the family and the time spent for doing ESNA activities were obtained. From this, amount paid for ESNA activities per person per hour were calculated. This calculated amount was used to monetize the ESNA activities of the women in the selected area which is explained in detail in '"Results and Discussion" chapter.

3.8 Concepts

The following are some of the concepts used in the study

SNA Activities

SNA activities are those activities that fall within the production boundary of the UN system of National accounts. These activities constitute the activities which are included in National accounts.

SNA activities include

1. Primary production activities i.e, crop farming, kitchen gardening etc. Animal husbandry, fishing, forestry, horticulture, gardening , collection of fruits, water, plants etc, Storing and hunting , processing and storage, mining, quarrying, digging, cutting etc
2. Secondary activities include construction and manufacturing activities
3. Trade, business and services

Non-SNA Activities

Non-SNA activities are not included in the National accounts but are covered under the General Production Boundary (The TUS conducted by India in 1998 by CSO followed the UN-SNA 1993 for classification of activities). They include all delegable production of services not covered under National Income Accounts. Personal services are non-delegated to others such as sleeping, watching TV etc. Time Use Statistics are thus quantitative summaries of how women allocate their time over a specified time period i.e over 24 hours of a day or over 7 days of a week on different activities and how much time they spend on each activity. TUS was first produced in the early decades of 1900's in social survey's reporting on the conditions of working class families.

Extended - SNA Activites

Extended SNA Activities include household maintenance ,management and shopping for own household, care for children, the sick, elderly and disabled for own household, community services and help to other households.

Non- SNA Activities

Non-SNA Activities includes learning, social and cultural activities. Mass media etc, personal care and self maintenance (GOI, 2001)

To carry out the analysis SPSS16 Version was used.